

Appendix A

Publicly Available Protocols for the BCOP Test Method

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Appendix A1

INVITTOX Protocol 98. The Bovine Corneal Opacity and Permeability Assay – Method of Gautheron

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THE BOVINE CORNEAL OPACITY AND PERMEABILITY ASSAY - METHOD OF GAUTHERON

The effects of a test compound on the opacity and permeability of a freshly collected bovine cornea can be used as a measure of eye irritancy potential.

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NOTE

*The protocol presents the standard operation procedure used in the Home Office UK/EEC Validation Study for Alternatives to the Draize Test. It should be noted that this protocol might need to be modified in light of experience gained in the study. Additional information added in the course of producing this **INVITTOX** protocol, e.g. this note, is presented in italics.*

Critical Assessment

This technique has the advantage over the Draize test that both of the end-points used are objective and quantitative, in contrast to the subjective scoring used in the *in vivo* test. In contrast to cell-culture-based systems, the three-dimensional structure of the tissue is preserved, thus giving a closer approximation of the *in vivo* situation. The sacrifice of animals is not required, as slaughterhouse material is used. It does not require any special conditions or facilities for cell culture and is therefore inexpensive and relatively simple to implement.

The protocol includes a method to be used for the testing of solids, which may present some difficulties. Interference with opacity measurements may be caused by highly coloured test compounds which can stain the cornea.

General

This assay was developed in the Merck Sharp & Dohme Research Laboratories to assess the ocular irritancy potential of process intermediates. The test utilizes bovine corneas from eyes freshly collected in a local abattoir, and measures two end-points, namely opacity and permeability. The objective values obtained from both parameters are combined, and the *in vitro* irritancy scores are compared to a previously established scale of ocular irritancy. For in-house products, irritancy is classified into three broad categories: mild, moderate and severe.

Equipment

1. opacitometer, e.g. Electro-Design, RIOM, France
2. corneal holders (15) in polypropylene
3. dissection equipment (scissors, forceps, scalpels)
4. plastic containers for collection of eyes
5. electric screwdriver
6. vacuum pump
7. water-bath
8. spectrophotometer
9. mortar and pestle
10. common tissue culture and laboratory equipment

Materials

1. Hank's balanced salt solution with Ca^{++} , Mg^{++} , (HBSS, Sigma H-1387), supplemented with 0.350 g/l sodium bicarbonate according to the supplier's recommendation.
2. Fetal bovine serum (FBS)
3. Eagle's Minimum Essential Medium (MEM, Sigma M-3024). This is routinely prepared from powder, supplemented with 2.2 g/l sodium bicarbonate and 0.292 g/l (2 mM) glutamine, according to the supplier's recommendations, and stored refrigerated (one-week stock). In experiments, the medium also contains 1% FBS, prepared daily, and is used at 32°C. In this protocol, MEM medium always refers to complete medium which should be preheated to 32°C before use.
4. Dulbecco's phosphate-buffered saline (DPBS Sigma-D5780).
5. Na-fluorescein (Sigma F-6377). The dye is used as a 0.4 or 0.5% solution in DPBS (4 or 5 mg/ml).
6. Saline, always refers to 0.9% NaCl in distilled water.

Bovine eyes

Eyes, excised by an abattoir employee, are collected in a plastic jar containing one litre of HBSS for approximately 25 eyes. Buffer storage and transportation of eyes to the laboratory are performed at room temperature. The eyes are generally used within two hours after killing the animals.

Procedure Details

1. Preparation of corneas

During dissection, great care should be taken to avoid damage to corneal surfaces (epithelial and endothelial). All eyes are carefully examined, and those presenting defects, such as neovascularization, pigmentation, opacity or scratches are discarded. Eye balls are first dissected free of surrounding tissues (lids, conjunctiva, ocular muscles and glands) and placed in a jar containing fresh HBSS. Selected corneas are dissected with a 2-3 mm rim of sclera for easier handling, and stored in a petri dish containing HBSS until use. Corneas are then mounted in holders, the endothelial side being placed onto the O-ring of the posterior part of the holder. The anterior part of the holder is placed on the cornea and held in place with three screws. Compartments are then filled (the posterior part first) with MEM medium and corneas are incubated for one hour in a water-bath at 32°C.

2. Basal opacity

Immediately after incubation, anterior and posterior compartments are refilled with fresh medium, and opacity is determined (the method to measure opacity is described below). It should be very close to zero, thus permitting the elimination of any damaged or folded corneas: the limits for selecting good corneas are below or equal to 3 and above or equal to -3.

3. Treatment

Medium is removed from the anterior compartment, using a needle (with the point cut to remove the liquid completely) attached to a vacuum pump, and replaced by the test compound or an appropriate vehicle. Two treatment protocols are used, depending on the physical state (liquid or solid) of the product evaluated:

Protocol 1 : 10 min. treatment - **for liquids and surfactants**

Protocol 2 : 240 min, treatment - **for all solids**

In both protocols, substances are prewarmed at 32°C for a few minutes before being applied to the cornea. This is particularly important for liquids since the treatment time is only 10 minutes. For solids, this step is sometimes difficult; they are prepared in a mortar and very insoluble substances might be very sticky, preventing their transfer into a tube. In this case, place the mortar into warm (32°C) water for a few minutes.

3.1. Protocol 1

Liquid substances are applied neat (0.750 ml). If dilutions are requested, the solvent can be saline, for water-miscible products. PEG-600 or Triacetin can be used for immiscible liquids; triacetin may be preferred when possible (i.e. if miscible with the test liquid), because PEG-600 may enhance the penetration of some substances.

Surfactants are usually applied at 10% in saline, or at the dilution provided, and 0.750 ml is applied onto each cornea. Other concentrations (in saline) can also be tested as required.

Because some compounds, for example certain organic solvents, may be aggressive to plastic, it is recommended that glass syringes be used for all chemicals. In order to apply compounds uniformly onto the corneas, slightly rotate the holder, maintaining the cornea in a horizontal position (holes should be closed with the caps provided). Corneas are incubated in a horizontal position for 10 minutes at 32°C in a water bath. The holders should be completely immersed in water to ensure a uniform temperature.

The test substance is then removed, and the epithelium is washed at least three times, until the medium is clear, with approximately 4 ml of MEM. The anterior compartment is refilled with medium, and opacity is measured. Corneas are again incubated at 32°C for a period of 2 hours. Both compartments are refilled with fresh medium and opacity is again determined. The values obtained at this time-point (120 min) are the only ones used in calculations.

3.2. Protocol 2

Solutions or suspensions of solid products are prepared at 20% (in practice, 1 g plus 5 ml saline), using a mortar and pestle for homogenous preparations (start grinding in the mortar with a small volume of liquid). A volume of 0.750

ml is applied onto the epithelium with an appropriate syringe and needle. For sticky suspensions, it may be necessary to use a needle with a large diameter, or even to unscrew the anterior glass for pasty substances. Corneas are placed in a horizontal position for 4 hours at 32°C. The holders should be completely immersed in a water bath. The test compound is then removed and the epithelium is washed at least three times, until the cornea is free of particles; gentle swirling movements of the holders are sometimes necessary. It is also possible to remove the anterior glass if product is still present in the chamber. Both compartments are refilled with fresh medium and the opacity measurement is performed immediately without any further incubation.

N.B. This is the general procedure testing substances. In the EC/UK Study, however, all liquids and surfactants were tested neat and all solids at 20% in saline.

3.3. Number of corneas used

The number of corneas used per experiment is generally 15, but more or less may be used depending on the availability of eyes, holders and the number of test compounds. Each experiment includes a control group treated with saline (or with triacetin or PEG-600 if one of these has been used as solvent), a positive control group treated with a reference substance (see section "Positive controls") and several (generally 3) groups of corneas treated with the test substance. Each group is composed of three corneas.

4. Opacity measurement

The opacitometer determines changes in light transmission passing through the corneas, and displays a numerical opacity value (arbitrary units).

4.1. Calibration

This operation is performed with no cornea in the Opacitometer (Electro-Design, RIOM, France), but using the calibration devices. The electrical zero (balance between photocells) is adjusted with the "balance" knob, and the apparatus is set to "75" with a standardized opaque sheet of polyester.

4.2. Measurement

The lateral glasses of the holders should be dried. Changes in corneal opacity are determined by comparison with "basal opacity" measured before treatment (t=0 opacity).

Each corneal holder is placed in the experimental (positive) compartment of the apparatus with *no holder* in the control (negative) compartment. Thus, the value obtained (for control or treated corneas) represents the absolute opacity value for a given cornea, but not the difference between a treated and a control cornea, as was determined in previous studies.

5. Permeability

This second step of the assay is performed immediately after the measurement of opacity. The medium is removed from the anterior compartment, and replaced by 1 ml of fluorescein solution (0.4% for liquids and surfactants, 0.5% for solids). Corneas are incubated in a horizontal position for 90 minutes, immersed in a water-bath at 32°C. Medium from the posterior chamber is then removed, and its optical density (O.D.) determined with a spectrophotometer at 490 nm.

6. Data calculation

6.1. Opacity

Opacity values measured at a given time-point (120 minutes in protocol 1, 240 minutes in protocol 2) are *first* corrected (individually for each cornea in the experiment) for basal opacity ($t=0$), i.e. " $t=120 - t=0$ " and " $t=240 - t=0$ ". Then each individual cornea in the experimental groups, including the positive controls, is corrected for the mean value of saline-treated corneas (negative control) at this time-point. The values obtained are therefore the "corrected values" of opacity.

6.2. Permeability

The mean O.D. of saline-treated corneas is calculated, and then the individual value for each experimental cornea is corrected for this mean to give the "corrected value" of permeability.

6.3 In-vitro score

This score is calculated with corrected values of opacity and permeability *for each individual cornea*, using the formula:

$$\text{score} = \text{opacity} + (15 \times \text{O.D.})$$

For a given substance, the final in-vitro score will be the mean \pm SD of three corneas.

7. Quality control

7.1. Basal opacity

Only corneas with a basal opacity of ≤ 3 and ≥ -3 are selected for the experiment.

7.2. Fluorescein solution

Stock fluorescein solutions prepared at 4 mg/ml or 5 mg/ml in DPBS should be diluted to 10 $\mu\text{g/ml}$ in complete MEM (the medium used throughout the experiment to fill the posterior compartment), and O.D. determined before application to corneas. An acceptable range is between 1.610 and 1.910, otherwise the dilution should be performed again, and, if necessary, a new solution prepared. The actual value for each experiment has to be reported on the data sheets.

7.3. Positive controls

A group of three corneas treated with a known reference substance has to be included in each experiment. The substance selected will depend on the broad category of products to be evaluated:

- a) BENZALKONIUM CHLORIDE (=BAK) (Sigma, # B-1383) 5% solution in saline, for surfactants
- b) N,N,-DIMETHYLFORMAMIDE (=DMF) (Aldrich, # 15,481-4), 100%, for liquids.
- c) IMIDAZOLE (=IMDZ) (Aldrich, # I-20-2), 20% in saline, for solids.

The limits (mean of three corneas) for a valid experiment are as follows:

| Compound | Opacity | Permeability | Score |
|-----------------------|---------|--------------|-------|
| Benzalkonium chloride | > 60 | > 3.000 | > 110 |
| N,N-Dimethylformamide | > 70 | > 1.500 | > 100 |
| Imidazole | > 35 | > 2.000 | > 70 |

8. Data interpretation (optional)

Based on experience at MS&D with reference and in-house compounds, and on data from collaborative studies, the following classification system was established:

In-vitro score:

| | | | | | |
|------|------|----|----|---|----------------------|
| from | 0 | to | 25 | = | mild irritant |
| from | 25.1 | to | 55 | = | moderate irritant |
| from | 55.1 | to | 80 | = | severe irritant |
| >= | 80 | | | = | very severe irritant |

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Appendix A2

INVITTOX Protocol 124. Bovine Corneal Opacity and Permeability (BCOP) Assay – SOP of Microbiological Associates, United Kingdom

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BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY - SOP OF MICROBIOLOGICAL ASSOCIATES LTD., UK

The effects of a test compound on the opacity and permeability of a freshly collected bovine cornea can be used as a measure of eye irritancy potential.

Background

This protocol is based on the SOP developed by Gautheron (*INVITTOX N° 98*), which participated in the EC/HO Validation Study and did not meet the criteria set by the management team of this study for its use as a replacement of the Draize rabbit eye irritation test (Balls *et al.*, 1995). A subsequent study (BCOP assay Prevalidation Process; 1997-1998) has been carried out to overcome the previously encountered shortcomings. The new and optimised protocol version is herewith included. The Microbiological Associates Ltd., in collaboration with other laboratories, has refined and optimised the original protocol developed by Gautheron with the aim to assess the effects of some of the variables in the assay in order to eliminate sources of variation, optimise the methodology and reduce inter and intralaboratory variation.

Experimental Description

Endpoint and

Endpoint Detection : - Corneal opacity measured using an opacitometer.
- Corneal permeability determined using sodium fluorescein and measured spectrophotometrically (increase in OD).

Test System : Freshly isolated bovine cornea (intact, epithelium-removed, Descemet's membrane and endothelium-removed; stroma)

Bovine eyes recovered from a slaughterhouse are inspected and undamaged corneas are dissected and mounted in specially constructed holders.

After a 1 hour incubation in media, the basal opacity of each cornea is recorded using an opacitometer.

Two methodologies have been developed to adapt the protocol to the physico-chemical nature of the test compound. The first method (A) is used to test non-surfactant liquids and surfactants. Liquids are tested neat and surfactants, liquid and solid, are diluted at 10%. Both are applied for 10 minutes.

Before reading the final opacity, the corneas are rinsed and incubated for 2 hours in refilled media to equilibrate.

The second method (B) is used with solids, tested at 20% (w/w) solution or suspension in 0.9% NaCl. After 4 hours incubation, the corneas are rinsed and the final opacity measured.

Then the permeability of each cornea is determined with a fluorescein solution after an incubation of 90 minutes. Method A uses a fluorescein concentration of 4 mg/ml and method B uses 5 mg/ml.

Test Compounds

Ten chemicals were selected for use in Phase III of the BCOP prevalidation process: 3 surfactants (anionic and non-ionic), 1 aromatic amine, 1 alcohol, 1 ester, 1 ether, 1 ketone, 1 inorganic chemical and 1 aldehyde.

Prediction Model

The two endpoints, corneal opacity and permeability, are combined to give a final in vitro score and related to the five categories of irritancy: non irritant, mild, moderate, severe, very severe (see section "Evaluation of Test Results" of the present SOP). These in vitro index scores were then compared with in vivo scores (Modified Maximum Average Scores) obtained in the Draize eye test and assigned to appropriate categories.

Modifications of the Method

With respect to the original protocol developed by Gautheron the protocol refinements, carried out during the recent prevalidation study, refer to reagents and procedure adopted; the way of measuring permeability, calculation of the results, the treatment and dilution of test compounds and the kind of positive controls used.

Status

This protocol has successfully been tested in the "BCOP assay Prevalidation Process (1997-1998)". The participating laboratories concluded that the process was effective in improving the reproducibility of the assay.

The refinements introduced into the protocol contributed to an

improvement in the intralaboratory variability of the assay. However, the assay was found to overestimate the irritancy of two chemicals and to underpredict the irritancy of the others of the 10 chemicals tested.

NOTE: General comments of the BCOP Method Summary apply. It can be obtained from ecvam.sis@jrc.it

Last update: August 1999

Procedure Details, April 1997*

BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY - SOP OF MICROBIOLOGICAL ASSOCIATES LTD., UK

Note: This protocol presents the standard operating procedure used in the study "BCOP assay prevalidation project" (1997). It should be noted that this protocol might need to be modified in light of experience gained in the study.

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□ The herewith included SOP has been sent to the person responsible for the method to update or confirm it. As soon as new information will become available this version will be updated.

1. Procedure

1.1 SUMMARY

Bovine eyes obtained from the local slaughterhouse are inspected for scratches and defects etc. Undamaged corneas are dissected and mounted in specially constructed holders. After a 1 hour incubation in media, the basal opacity of each cornea is recorded using an opacitometer.

Two methodologies have been developed and are used depending on the physical / chemical nature of the test article. The nature of the test article to be tested will therefore determine the methodology employed.

Method A is used to test non surfactant liquids and surfactants. Liquids are tested neat and surfactants, both liquid and solid, are tested at a 10% dilution and applied to the cornea for 10 minutes. After the 10 minute incubation the corneas are rinsed, the holders refilled with media and the corneas incubated for a further 2 hours in media to equilibrate. The final opacity reading is taken.

Method B is used for the testing of solids which are tested as a 20% slurry for 4 hours. After a 4 hour incubation the corneas are rinsed and the final opacity measurement recorded.

The corneas are then exposed to a fluorescein solution, and the permeability of each cornea determined after an incubation of 90 minutes. Method A uses a fluorescein concentration of 4 mg/ml and Method B uses 5 mg/ml. An aliquot of the media from below the cornea is read in a spectrophotometer to determine the permeability of the cornea to the fluorescein solution. The opacity and permeability values are combined to obtain an in vitro score.

1.2 EQUIPMENT

- Opacitometer (see Appendix A)
- Cornea holders ~25
- Spectrophotometer (see Appendix B)
- Water bath 32°C
- Vacuum pump
- Scalpel
- Scissors
- Forceps
- Electric Screwdriver
- Mortar & Pestle
- Positive displacement pipette
- Micro pipettes
- 5ml Syringes
- 30ml Syringes
- Needles (19G11/21,1 x 40)
- Cuvettes

1.3 MEDIA AND REAGENTS:

Media: Clear media without phenol red is to be used throughout the study

MEM without Phenol Red [Life Technologies; Cat No.51200
]

or

Powdered MEM dissolved in sterile deionised H₂O

[Sigma; Cat No. M-3024]

with added sodium bicarbonate [Sigma; Cat No. S-5761]

L-glutamine [Gibco; Cat No.043-05030]

Foetal Bovine Serum (FBS) [PAA; Cat No.A15-652]

Preparation of complete MEM (cMEM):

To MEM add 1% L-glutamine and 1% FBS (To be freshly prepared at the beginning of each assay)

Hank's Balanced Salt Solution W/O Phenol Red (HBSS)

[Life Technologies; Cat No. 14025-050]

or

Powdered HBSS dissolved in sterile deionised H₂O

[Sigma; Cat No.H-1387]

Penicillin-Streptomycin (10000 IU/ml-10000 IU/ml) solution

[Life technologies; Cat No. 15140-114]

0.9% NaCl Solution [Sigma; Cat No. S-8776]
or
Deionised H₂O plus 0.9% NaCl (0.9g / 100 ml)
[Sigma; Cat No. S 7653]

Preparation of Stock Fluorescein solution; (see Appendix C)
cMEM plus Sodium Fluorescein [Sigma; Cat No. F-6377]

Ethanol [Sigma-Aldrich; Cat No. 27,074-1]

Benzalkonium Chloride [Sigma; Cat No. B1383]

Imidazole [Sigma-Aldrich; Cat No. I,20-2]

All chemicals and solutions to be disposed after 1 year of purchase or preparation unless an expiry date is stipulated on the original packaging.

2. Methodology

2.1 pH

An estimate of pH for each neat (liquid) test article or diluted test article (if diluted/suspended in 0.9% NaCl) will be determined and recorded using universal pH paper.

2.2 BOVINE EYES

Bovine eyes, excised by an abattoir employee, will be collected as soon after slaughter as possible. Care should be taken to avoid damaging the cornea during excision. Excised eyes will be contained and transported to the laboratory in HBSS containing 1% (v/v) Penicillin/Streptomycin Solution (enough to cover all eyes in the receptacle) at room temperature. The eyes will generally be used within 3 hours (± 1 hour) after slaughter.

2.3 PREPARATION OF CORNEAS

All eyes will be carefully examined macroscopically for defects (opacity, scratches, pigmentation, etc) and those exhibiting defects will be discarded. The tissue surrounding the eyeball will be carefully pulled away and the cornea will be dissected such that approximately 2 to 3mm of sclera is present around the cornea. The isolated corneas will be stored in a petri dish containing HBSS plus 1% Penicillin/streptomycin Solution until all corneas are dissected.

The corneas are mounted immediately in the corneal holders with the endothelial side against the O-ring of the posterior half of the holder. The cornea should be gently flattened over the O-ring and holder surface with a wetted, gloved finger to expel any air. The anterior half of the holder will then be positioned on top of the cornea and fixed in place with screws. Both compartments of the corneal holder will be filled with cMEM, using a 30ml syringe. The posterior compartment will always be filled first to return the cornea to its natural concave position. Care should be taken to make sure no air bubbles are present within the holders. The holders will be plugged and incubated for 1 hour \pm 5 min at 32°C \pm 2°C in a water bath.

2.4 TREATMENT GROUPS

Three corneas will be treated with each test article solution/suspension. Three corneas per assay will be treated with the positive control and three corneas with 0.9% NaCl as the negative control group.

One of two treatment methods (Method A or B) will be used depending on the physical nature and chemical characteristics (liquid or surfactant versus non-surfactant solid) of the test article. The controls used will depend on the method being used.

2.5 CONTROLS

Test Article Positive Control

Method A Liquid test articles ethanol

Surfactant test articles benzalkonium chloride (10%)

Method B Solid test articles imidazole (20%)

Negative Control 0.9% saline

2.6 TREATMENT OF CORNEAS

At the end of the one hour incubation period, the medium will be removed from both compartments using a suitable pipette tip or flat ended needle attached to a vacuum pump to ensure complete evacuation, and replaced with fresh cMEM. Again, care should be taken to make sure no air bubbles are present within the holders. The posterior compartment will be plugged and the anterior left unplugged for opacity determination.

2.7 OPACITY MEASUREMENT

The opacitometer will determine the light transmission through the centre of each mounted cornea. A numerical opacity value (arbitrary unit) will be displayed and recorded. The opacitometer will be calibrated

at the start of each experiment in each assay (see Appendix A) and the opacity of each of the corneas will be determined by reading each holder in the right hand chamber of a calibrated opacitometer.

Once the basal opacity of all corneas has been recorded, the mean value of all corneas can be taken and any corneas deviating from this by more than 3 units will be discarded. Sets of three corneas can be selected randomly for treatment with each test article, positive control compound and negative control.

Immediately prior to treatment the medium will be removed from the anterior compartment of the holder using a suitable pipette tip or flat ended needle attached to a vacuum pump, taking extra care to make sure all excess liquid has been removed. This will be replaced with the test article, positive control compound or negative control

2.7.1 Method A:

Non surfactant liquids and the positive control compound (ethanol) will be tested neat (100%). Known surfactants (either solids or liquids) and positive control (Benzalkonium Chloride) will be tested at a 10% (w/w) concentration in 0.9% NaCl.

Seven hundred and fifty μl of a test substance will be introduced into the anterior part of the holder using a suitable micro pipette, or if the test article is viscous, a suitable positive displacement pipette will be used. Control corneas will also be treated with 750 μl of the negative control (0.9% NaCl) and with the positive control.

The anterior compartment will be plugged. The holder will be turned to a horizontal position and slightly rotated to ensure uniform covering of the test substance over the cornea, and will be incubated in a horizontal position at $32\pm 2^{\circ}\text{C}$ for 10 minutes (± 30 seconds) in a water bath.

The test substance will then be removed and the epithelium will be washed at least 3 times (or until the wash medium is clear) with approximately 3 ml of cMEM using a syringe to add media. After each wash the medium will be removed using a pipette tip or flat ended needle attached to a vacuum pump. If the test article proves difficult to remove by this method, the front cover may be removed and the cornea carefully washed using a gentle stream of cMEM from a wash bottle.

The anterior compartment will then be refilled with cMEM using a syringe. Care should be taken to ensure that there are no air bubbles in the compartment. Once all air bubbles have been removed the anterior compartment is re-plugged, the corneas will then be incubated for 2 hours ± 10 minutes at $32\pm 2^{\circ}\text{C}$ in the water bath.

At the completion of the 2 hrs incubation period, the media will be removed from the anterior and the posterior compartments using a pipette tip or flat ended needle attached to a vacuum pump and replaced with fresh cMEM, again making sure no air bubbles are present. The posterior compartment will be re-plugged, and the opacity of each cornea will be recorded. The values obtained at this measurement will be recorded and used in calculating the corneal opacity.

The corneas will be observed for opaque spots or other irregularities and these will be noted on the workbook and raw data forms.

2.7.2 Method B:

Solid materials and the positive control compound (imidazole) will be tested at 20% (w/w) solution or suspension in 0.9% NaCl. Homogeneous preparations can be prepared in a mortar and pestle by grinding the test article with a small amount of 0.9% NaCl and slowly adding the remaining amount.

Seven hundred and fifty μ l of the test substance, negative control (0.9% NaCl) or positive control will be introduced into the anterior part of the holder using a suitable positive displacement pipette. The front cover may be removed to obtain even coverage of viscous solutions or pastes. The holder will be slightly rotated (with the corneas maintained in a horizontal position) to ensure uniform covering of the test substance over the cornea. Both compartments will be plugged and the corneas incubated in a horizontal position at $32\pm 2^{\circ}\text{C}$ for 4 hours \pm 5 minutes in a water bath.

After incubation, the test substance, negative control or positive control compound will be removed and the epithelium washed at least 3 times (or until the cornea is free of particles) with approximately 3 ml of cMEM each time using a syringe to add media and a vacuum to remove it. If the test article proves difficult to remove by this method, the front cover may be removed and the cornea gently washed with cMEM using a wash bottle.

The media in the anterior and the posterior compartments will then be removed and replaced with fresh cMEM, again making sure no air bubbles are present in the holder. The posterior compartment will be plugged and an opacity measurement performed immediately without any further incubation.

The corneas will be observed for opaque spots or other irregularities and these noted on the workbook and raw data forms.

2.8 PERMEABILITY DETERMINATIONS

When carrying out this assay for the first time, a calibration curve for the spectrophotometer to be used must be carried out. (see Appendix B).

Each assay also requires the preparation and reading of two samples of quality control solution (see Appendix C).

2.8.1 Method A:

After the final opacity measurement is performed, the medium will be removed from the anterior compartment using a suitable pipette tip or flat ended needle attached to a vacuum pump. One ml of a 4 mg/ml fluorescein solution (see Appendix C) will be added to the anterior compartment using a micro pipette.

2.8.2 Method B:

After the opacity measurement is performed, the medium will be removed from the anterior compartment using a suitable pipette tip or flat ended needle attached to a vacuum pump and replaced with 1ml of a 5 mg/ml fluorescein solution (see Appendix C).

2.8.3 Method A and B:

After the addition of the fluorescein solution to the anterior side of the holder, the compartment will be plugged and the corneas will be incubated in a horizontal position for 90 minutes \pm 5 minutes at $32\pm 2^\circ\text{C}$ in a water bath.

After incubation the medium in the posterior chamber will be mixed by drawing ~2.5ml gently up and down a 5ml syringe with a needle attached 3 times. An aliquot of the mixed medium from the posterior chamber will be removed using the syringe and needle, and transferred to a cuvette with a 1cm path length.

The spectrophotometer will be adjusted to read at OD₄₉₀ and a sample of cMEM read. The spectrophotometer will be blanked on this solution prior to reading the transferred solutions. Any solutions giving an OD₄₉₀ beyond the range of the spectrophotometer (see Appendix B) will be diluted 1:4 in cMEM.

2.9 HOLDER CLEANING

All holders should be stripped at the end of the assay by removing the screws, glass holder rings, glass and the centre O-ring. The separate parts should be washed, and preferably steeped in hot water containing a suitable detergent. Care should be taken to ensure all traces of Na-fluorescein are removed. All parts should then be rinsed in water to remove all detergent and allowed to dry.

3. Criteria for Determination of a Valid Test

The test will be accepted if the positive control causes an *In Vitro* Score that falls within two standard deviations of the current historical mean.

Ethanol: 36.0 to 56.0

Benzalkonium chloride: 98.8 to 209.2

Imidazole: 111.2 to 164.0

4. Evaluation of Test Results

The *In Vitro* Score is generated from the opacity and permeability measurements as described below. A suitable computer spreadsheet can be used to make the following calculations (See Appendix D).

4.1 OPACITY

The change in opacity value of each treated cornea or positive control and negative control corneas will be calculated by subtracting the initial basal opacity from the post treatment opacity reading, for each individual cornea.

The average change in opacity for the negative control corneas will be calculated and this value subtracted from the change in opacity of each treated cornea or positive control to obtain a corrected opacity.

The mean corrected opacity value of each treatment group will be calculated from the individual corrected opacity values of the treated corneas for each treatment condition.

4.2 PERMEABILITY

The corrected OD₄₉₀ value (permeability) of each treated or positive control cornea will be calculated by subtracting the average negative control cornea value from the original permeability value for each

cornea.

The mean corrected permeability values of each treatment group will be calculated from the individual corrected permeability values of the treated corneas for each treatment condition.

4.3 IN VITRO SCORE CALCULATION

The following formula is used to determine the *In Vitro* Score:

In Vitro Score = Corrected Opacity Value + (15 x Corrected OD490 Value)

The In Vitro Score will be calculated for each individual treatment and positive control cornea. The mean In Vitro Score value for each treatment group will be calculated from the individual In Vitro Score values.

4.4 DATA INTERPRETATION

The following classification system was established by Gautheron et al (1992) and refined by Vanparys et al 1994 for materials tested under standard conditions. Results from test situations should be compared to known materials tested under similar conditions.

Proposed Prediction Model

| Draize <i>in vivo</i> Score | Draize Irritation Scale | <i>In Vitro</i> Score | Proposed <i>In Vitro</i> Irritation Scale |
|-----------------------------|-------------------------|-----------------------|---|
| 0 - 0.9 | minimal | 0 - 3 | non eye irritant |
| 1 - 25 | minimal/slight | 3.1-25 | mild eye irritant |
| 26 - 56 | moderate | 25.1-55 | moderate eye irritant |
| 57 - 84 | marked | 55.1-80 | severe eye irritant |
| 85 - 110 | extreme | >80.1 | very severe eye irritant |

5. Regulatory Requirements/Good Laboratory Practice

This assay will be performed in compliance with the provisions of the

Good Laboratory Practice Regulations for Non clinical Laboratory Studies.

Appendix A

Calibration of Opacitometer

An opacitometer (formerly from Electro Design) can be obtained from STAG BIO at the following address:

STAG BIO
Rond Point La Pardieu 6
av. Michel Ange
BP 09F 63063
CLERMONT FD Cedex 01
FRANCE

The opacitometer will be calibrated at the beginning of every experiment on ever test day as follows:

- The unit will be switched on and allowed to warm up for at least 10 minutes prior to calibration.
- With both calibration blocks inserted into the reading chambers, the balance knob will be adjusted to give a reading of zero. Calibrator number 1 will be inserted into the right hand calibration block and a reading taken. Calibrator number 1 should be adjusted to read 75 with the calibration knob on the opacitometer.
- The other two calibrators can be checked in the right hand calibration block and should fall into the range of 145-155 (calibrator 2), 218-232 (calibrator 3).

Once calibrated, the unit should be left on for the duration of the test.

If the opacitometer does not read within these ranges, the unit should be recalibrated by the manufacturer, STAG BIO.

Protocol of BCOP only requires the use of the right hand chamber of the opacitometer for reading the opacity. A calibration block should be left in the left hand reading chamber of the opacitometer for the duration of the assay and the opacity of the treated corneas will be read in the right hand chamber only.

Appendix B

Spectrophotometer linearity

The linearity of the spectrophotometer to be used in these studies and its ability to replicate the readings obtained by other users of the BCOP must be determined. The following process is intended to identify any difference in individual spectrophotometers used in different laboratories.

The optical density (OD) of a series of dilutions of Na-fluorescein (NaF) solutions in cMEM should be recorded.

A (100X) stock solution of Na-fluorescein (NaF) is made by dissolving 0.2g NaF in 100ml cMEM; a second stock solution (1X) is then prepared by diluting 1ml of the first stock (100X) in 100ml of cMEM in a standard flask; a concentration of 20 μ g/ml is achieved.

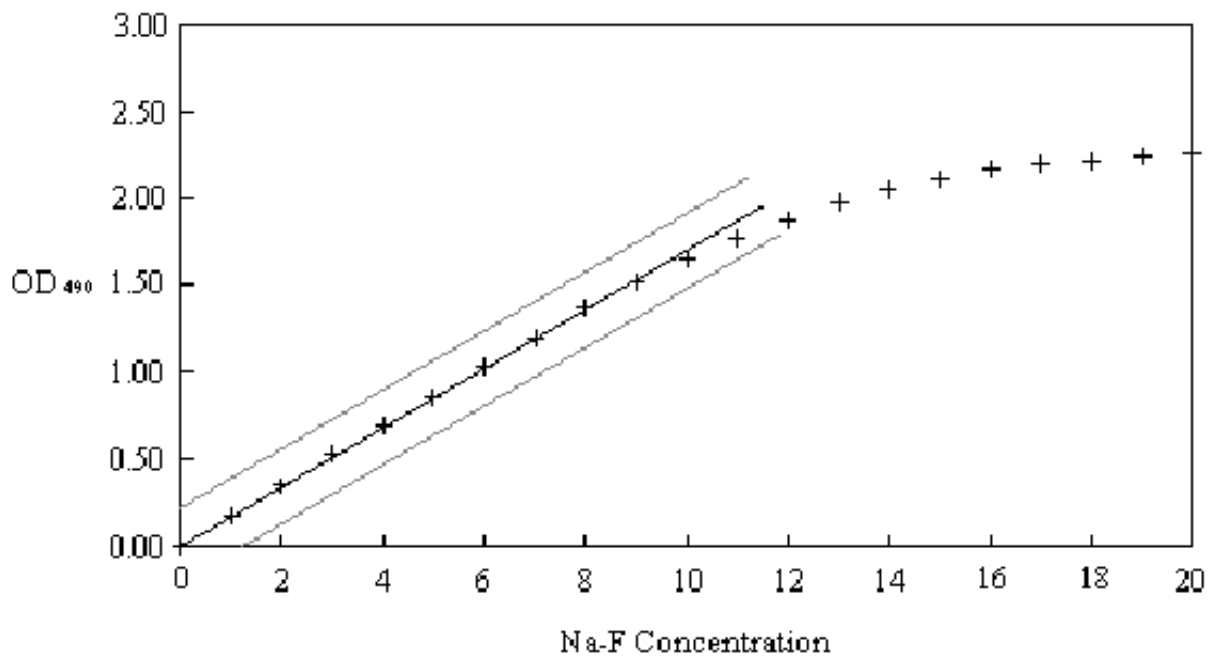
A series of 22 cuvettes will be prepared as described in Table 1. The OD determination is performed at 490 nm and results should closely follow those displayed in Figure 1.

Table 1: Preparation of the Standard Dilution Series of Na-fluorescein (NaF) in cMEM.

| Cuvette No. | # μ l cMEM | # μ l stock 1x | Concentration (μ g/ml) |
|-------------|----------------|--------------------|-----------------------------|
| 1 | 0 | 2,000 | 20 |
| 2 | 100 | 1,900 | 19 |
| 3 | 200 | 1,800 | 18 |
| 4 | 300 | 1,700 | 17 |
| 5 | 400 | 1,600 | 16 |
| 6 | 500 | 1,500 | 15 |
| 7 | 600 | 1,400 | 14 |
| 8 | 700 | 1,300 | 13 |
| 9 | 800 | 1,200 | 12 |
| 10 | 900 | 1,100 | 11 |
| 11 | 1,000 | 1,000 | 10 |
| 12 | 1,100 | 900 | 9 |

| | | | |
|-------------|-------|-----|---|
| 13 | 1,200 | 800 | 8 |
| 14 | 1,300 | 700 | 7 |
| 15 | 1,400 | 600 | 6 |
| 16 | 1,500 | 500 | 5 |
| 17 | 1,600 | 400 | 4 |
| 18 | 1,700 | 300 | 3 |
| 19 | 1,800 | 200 | 2 |
| 20 | 1,900 | 100 | 1 |
| blank 21&22 | 2,000 | 0 | 0 |

Figure 1: Example of a Calibration curve of a Spectrophotometer using a serial dilution of Na-F Solution in cMEM



A graph similar to that shown in Figure 1 should be prepared and used to determine the linear range of each spectrophotometer and thus determine the upper limit of absorbance. Solutions recording absorbance above the linear portion should be diluted further.

Figure 1 demonstrates spectrophotometer linearity below an OD490 of 1.80, hence if the OD490 > 1.80, a dilution factor of 1:4 will be required.

Appendix C

Preparation & Quality Control of Na-fluorescein Solution for use in the BCOP Assay

Method A;

Liquid/surfactant test compounds

A stock solution of Na-fluorescein (1g dissolved in cMEM 250ml) is prepared.

This is diluted 1/400 in cMEM in two steps;

Step 1: 950 μ l cMEM + 50 μ l Na-F stock;

Step 2: 50 μ l of Step 1 solution + 950 μ l cMEM dilution is performed.

The same process should be repeated to obtain two separate solutions for testing. The final solution from Step 2 is measured on the spectrophotometer after blanking on 1 ml of cMEM. The two values obtained are averaged and this reading must be between 1.71 and 1.91.

If the final dilution is within the specified range, the stock solution can be aliquoted into suitable vials and stored at $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ in the dark until required for use. To improve the consistency between assays, vials can be thawed and diluted for use on the day of assay. Any prepared solution not required should be discarded.

Method B;

Solid test compounds

A stock solution of Na-fluorescein (1.25g dissolved in cMEM 250ml) is prepared.

This is diluted 1/500 in cMEM in two steps.

Step1: 950 μ l cMEM + 50 μ l Na-F stock;

Step2: 40 μ l of Step 1 solution + 960 μ l cMEM dilution is performed.

The same dilution sequence should be repeated to obtain two separate solutions for testing. The final solution from Step 2 is measured on the spectrophotometer after blanking on 1 ml of cMEM. The two values obtained are averaged and this reading must be between 1.71 and 1.91.

If the final dilution is within the specified range, the stock solution can be aliquoted into suitable vials and stored at $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ in the dark until required for use. To improve the consistency between assays, vials can be thawed and diluted for use on the day of assay. Any prepared solution not required should be discarded..

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Appendix A3

Table of BCOP Protocols from the Reviewed Literature

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Table of BCOP Protocols from Reviewed Literature

| REFERENCE | INVITTOX Protocol #124 (BCOP Prevalidation - SOP of Microbiological Associates Ltd., UK) | INVITTOX Protocol #98 (EC/HO Validation Study; Balls et al. 1995) | Bailey et al. (2004) | Bruner et al. (1998) | Cassidy and Stanton (1997) |
|---------------------------------------|---|--|---|---|---|
| TEST METHOD COMPONENT | | | | | |
| Collection of bovine eyes | Eyes excised by an abattoir employee and collected as soon as possible after slaughter | Eyes are excised by an abattoir employee and collected in a plastic jar that holds approximately 25 eyes | | Eyes excised by an abattoir employee and collected as soon as possible after slaughter | Bovine eyes obtained from a local abattoir |
| Transport conditions | Eyes transported to the lab in a container with Hanks Balanced Salt Solution containing 1% (v/v) penicillin/streptomycin solution | Storage jar contains 1 L of Hanks Balanced Salt Solution with Ca ⁺⁺ , Mg ⁺⁺ , supplemented with 0.350 g/L sodium bicarbonate | Transported in a receptacle containing Hank's Balanced Salt Solution with Ca ⁺⁺ and Mg ⁺⁺ , and with 100 IU/mL penicillin and 100 µg/mL streptomycin (HBSS) | Eyes transported to the lab in a container with Hanks Balanced Salt Solution containing 1% (v/v) penicillin/streptomycin solution | Not noted |
| Temperature | Transported at ambient temperature | Transported at ambient temperature | Transported on ice | Not noted | Not noted |
| Time after slaughter until use | 3 (± 1) hours after slaughter | Within 2 hours after slaughter | Eyes arrive in the laboratory within 4-5 hours of removing first eyes in a batch from cattle | Eyes used within 12 hours after receipt at laboratory | Not noted |
| Cornea preparation | At lab, eyes carefully examined for defects; unacceptable eyes rejected | At lab, eyes carefully examined for defects; unacceptable eyes rejected | At lab eyes are examined carefully and those with defects such as neovascularization, pigmentation, opacity, or scratches are rejected for testing. | At lab, eyes carefully examined for defects; unacceptable eyes rejected | At lab, eyes carefully examined for defects; unacceptable eyes rejected |
| Description of cornea dissection | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea with care taken to avoid damage to corneal epithelium and endothelium | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that a rim of sclera surrounds cornea |
| Storage of isolated corneas until use | Isolated corneas stored in petri dish with HBSS 1% penicillin/streptomycin solution until all dissections completed | Isolated corneas stored in petri dish with HBSS until use | Isolated corneas stored in petri dish with HBSS/penicillin/streptomycin solution until mounted in holders | Rinsed in HBSS | Not described |
| Type of cornea holder used | Conventional cornea holder for opacitometer with anterior (epithelial side) and posterior (endothelial side) chambers | Conventional cornea holder for opacitometer | Cornea holder for opacitometer with anterior (epithelial side) and posterior (endothelial side) chambers | Stag Bio, Clermont, France | Specially designed holder for the assay with anterior (epithelial side) and posterior (endothelial side) chambers |

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|--|---|---|---|--|---|
| TEST METHOD COMPONENT | | | | | |
| Pretreatment incubation/equilibration in corneal holder | After positioning cornea in holder and fixing in place with screws, posterior then anterior compartments of the holder are filled with assay medium. Air bubbles should not be present in the chambers. | After positioning cornea in holder and fixing in place with screws, posterior then anterior compartments of the holder are filled with assay medium. | Holders and medium are prewarmed to 32°C before mounting corneas. Endothelial side of the cornea is placed against O-ring of posterior chamber. Anterior chamber is placed over the cornea and chambers are joined together. Posterior then anterior chambers are filled with assay medium, avoiding formation of air bubbles and minimizing shear forces on the corneal endothelium. | After positioning cornea in holder and fixing in place with screws, posterior then anterior compartments of the holder are filled with assay medium. | Corneas free of defects were mounted in holders. Both posterior and anterior holder compartments were filled with assay medium. |
| Duration | 1 hour (±5min) | 1 hour | 1 hour | 1 hour | 1 hour |
| Temperature | 32°C (±2°C) | 32°C | 32°C (±1°C) maintained in a forced air incubator | 32°C (±1°C) | 32°C |
| Medium used for incubation | Freshly prepared complete (c) MEM (MEM + 1% L-glutamine + fetal bovine serum; clear medium without phenol red is to be used) | Eagle's Minimum Essential Medium (MEM) supplemented with 2.2 g/L sodium bicarbonate and 0.292 g/L (2 mM) glutamine (stored refrigerated up to 7 days); 1% fetal bovine serum is added to MEM for experiments (prepared daily); complete (c)MEM is preheated to 32°C for experiments | Eagle's Minimum Essential Medium (MEM) without phenol red containing 1% fetal bovine serum (complete MEM) | Minimum essential medium (MEM) containing 1% fetal bovine serum | Complete minimum essential medium (MEM) |
| Basal (pretreatment) opacity measurement taken | An initial opacity measurement was made immediately after 1 hour equilibration period and replacement of incubation media with fresh complete MEM | An initial opacity measurement was made immediately after 1 hour equilibration period and replacement of incubation media with fresh complete MEM | After the 1 hour incubation period, the medium is removed from both chambers of each holder (anterior chamber first) and replaced with fresh complete MEM. Then an initial opacity reading is taken and recorded for each cornea. | An initial opacity measurement was made after equilibration period | An initial opacity measurement was made after equilibration period |
| Instrument used to measure opacity | Opacitometer, which determines light transmission through the center of each mounted cornea | Opacitometer, which determines light transmission through the center of each mounted cornea | Opacitometer (Spectro Designs OP-KIT), which determines light transmission through the center of each mounted cornea | Opacitometer | Spectro-Designs OP-KIT opacitometer |
| Instrument calibrated prior to test (y/n) | Yes | Not noted | Not noted | Not noted | Not noted |
| Criteria for acceptable corneas for testing after equilibration period | Basal opacity of all corneas in the test is recorded; mean opacity value is determined; corneas deviating from mean by >3 units are discarded | Basal opacity values should be between 3 and -3 | Corneas that display an initial opacity reading greater than 10 units from the average opacity for all of the corneas are not used in the assay | Not noted | Not noted |
| Treatment groups used (No. of corneas used/test substance) | 3 corneas per test article | 3 corneas per treatment group | 3 to 5 corneas per test article | 5 corneas per treatment group (3 for permeability and 2 for histopathology) | 5 corneas per treatment group |
| Controls | 3 corneas for each control | 3 corneas for each control | 2 or 3 corneas | 5 corneas for each control (3 for permeability and 2 for histopathology) | 2 or 3 corneas used depending on the type of control |

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|------------------------------|---|--|--|---|--|
| TEST METHOD COMPONENT | | | | | |
| Positive control(s), if used | Varies for test substance. For liquids, the control is ethanol; for surfactants, benzalkonium chloride (10%); for solids, imidazole (20%) | Varies for test substance. For liquids, the control is N,N-dimethylformamide; for surfactants, benzalkonium chloride (5% in saline); for solids, imidazole (20% in saline) | Liquids and surfactants: undiluted ethanol; solid test articles: 20% (w/v) solution of imidazole in complete MEM (without phenol red) | Pre-treatment exposure of 5 corneas to 100% ethanol for 10 minutes; post-treatment exposure of 5 other corneas that went through 24 hour treatment regimen with complete MEM to 100% ethanol for 10 minutes | 2 corneas were treated with ethanol |
| Negative/untreated control | 0.9% saline | Saline | Corneas that have opacity values close to the average opacity for all corneas are chosen as the negative (or solvent) control corneas. The negative control is sterile, deionized water. | MEM | 3 corneas with opacity readings close to the median opacity for all the corneas were treated with complete MEM |
| Other controls, if used | | Triacetin or PEG-600 when used as the solvent for dilutions | When alternate solvents are used, such as saline or phosphate buffered saline, solvent controls are run through the assay | | |
| Treatment of corneas | Just prior to treatment, the anterior chamber is completely emptied of cMEM using an appropriately sized pipette tip or needle attached to a vacuum pump | Just prior to treatment, the anterior chamber is completely emptied of cMEM using an appropriately sized pipette tip or needle attached to a vacuum pump | | Corneas receive four consecutive 6 hour exposures to test article over 24 hours. Just prior to first treatment, the anterior chamber is emptied. | Just prior to treatment, the anterior chamber is completely emptied of complete MEM |
| <i>Liquid substances</i> | Test substances are added to anterior chamber of holder, which is turned to a horizontal position and rocked gently to ensure complete coverage of cornea | Test substances are prewarmed at 32°C for a few minutes then added to anterior chamber of holder | Nonviscous and semiviscous liquids tested using "closed chamber method". Semiviscous and viscous liquids tested using "open chamber method". | Cosmetic formulations are tested by addition to the anterior chamber of the cornea holder | Liquid silicone polymers were tested by addition to the anterior chamber of the cornea holder |
| Concentration tested | 100% (neat) | Usually 100% (neat); if dilutions are required, saline is used for water soluble substances and PEG-600 or triacetin are used for water insoluble substances | Generally tested at 100% (neat); dilutions performed as needed or requested | 100% (neat) | 100% |
| Amount tested | 750 µL (test substances and controls) | 750 µL (test substances and controls) | 750 µL (test substances and controls) | 750 µL (test substances and controls) | 750 µL (test substances and controls) |
| Incubation time | 10 minutes (±30 seconds) | 10 minutes | Standard exposure time is 10 minutes; shorter or longer exposure times are also used | 6 hours x 4 exposure periods for a total of 24 hours | 10 minutes |
| Incubation temperature | 32°C (±2°C) water bath | 32°C water bath | 32°C (±1°C) for exposure times > 3 minutes; ≤3 minutes incubated at room temperature | 32°C (±1°C) water bath | 32°C incubator |

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|---|---|---|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Rinsing procedure | Epithelium is washed 3 or more times with 3 mL of cMEM from a syringe or until the wash medium is clear | Epithelium is washed 3 or more times with 4 mL of cMEM from a syringe or until the wash medium is clear | Epithelium is washed 3 or more times with 2-3 mL of cMEM (with phenol red) from a syringe. Once the rinsing medium is clear, one last rinse of the epithelium is performed using fresh complete MEM (without phenol red). | At the end of each 6 hour incubation, the test article was washed from the cornea with MEM, fresh MEM was added to both chambers, and opacity was measured. Fresh test article was added to the front chamber after the first three exposure periods. | Epithelium is washed 3 or more times with complete MEM until test material is completely removed. The anterior compartment was refilled with complete MEM and relative opacity determined. |
| Post-treatment incubation (time, temp.) | cMEM is added to anterior chamber of holder and corneas are incubated for 2 hours (± 10 minutes) in a 32°C ($\pm 2^\circ\text{C}$) water bath; fresh cMEM is added to both chambers and final opacity measurement is taken | cMEM is added to anterior chamber of holder and corneas are incubated for 2 hours in a 32°C water bath; fresh cMEM is added to both chambers and final opacity measurement is taken | The anterior chamber is refilled with fresh complete MEM. A post-treatment opacity reading is taken and recorded for each cornea. Visual observations are performed for each cornea. Holders are incubated in a vertical position at 32°C ($\pm 1^\circ\text{C}$) for up to 3 hours. For test articles with exposure times >10 minutes, the exposure time is subtracted from the 2-hour post-exposure incubation period. Other post-exposure incubation times may be used. If corneas are incubated for >4 hours, the incubation medium is supplemented with antibiotics, and changed every 6 hours. | Not performed | Corneas returned to incubator for approximately 2 hours, after which a second measure of relative opacity was taken (report does not state that fresh MEM is added before final opacity measurements) |
| <i>Surfactants</i> | | Test substances are prewarmed at 32°C for a few minutes then added to anterior chamber of holder | | Not applicable | Not applicable |
| Concentration tested | 10% (w/w) in 0.9% saline | 10% in saline; other concentrations (in saline) can be tested as required | | | |
| Amount tested | 750 μL (test substance and controls) | 750 μL (test substance and controls) | | | |
| Incubation time | 10 minutes (± 30 seconds) | 10 minutes | | | |
| Incubation temperature | 32°C ($\pm 2^\circ\text{C}$) water bath | 32°C water bath | | | |
| Rinsing procedure | Epithelium is washed 3 or more times with 3 mL of cMEM each time from a syringe or until the wash medium is clear | Epithelium is washed 3 or more times with 4 mL of cMEM from a syringe or until the wash medium is clear | | | |
| Post-treatment incubation (time, temp.) | cMEM is added to anterior chamber of holder and corneas are incubated for 2 hours (± 10 minutes) in a 32°C ($\pm 2^\circ\text{C}$) water bath; fresh cMEM is added to both chambers and final opacity measurement is taken | cMEM is added to anterior chamber of holder and corneas are incubated for 2 hours in a 32°C water bath; fresh cMEM is added to both chambers and final opacity measurement is taken | | | |
| <i>Solid substances</i> | | Test substances are prewarmed at 32°C for a few minutes then added to anterior chamber of holder | | Not applicable | Not applicable |

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|--|--|--|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Concentration tested | 20% (w/w) solution or suspension in 0.9% NaCl | 20% solution or suspension in saline (usually 1g test substance + 5 mL saline) | 20% (w/w) solution or suspension in sterile deionized water, complete MEM, or saline (or other appropriate solvent) | | |
| Amount tested | 750 µL (test substance and controls) | 750 µL (test substance and controls) | 750 µL (test substance and controls) | | |
| Incubation time | 4 hours (±5 minutes) | 4 hours | 4 hours (±5 minutes) | | |
| Incubation temperature | 32°C (±2°C) water bath | 32°C water bath (holders completely immersed) | 32°C (±2°C) water bath | | |
| Rinsing procedure | Epithelium is washed 3 or more times with 3 mL of cMEM each time from a syringe or until all particles are removed; fresh cMEM is added to both chambers and final opacity measurement is taken | Epithelium is washed 3 or more times with cMEM until all particles are removed; fresh cMEM is added to both chambers and final opacity measurement is taken | Epithelium is washed 3 or more times with 3 mL of cMEM each time from a syringe or until all particles are removed; fresh cMEM is added to both chambers and final opacity measurement is taken | | |
| Post-treatment incubation (time, temp.) | Not performed | Not performed | | | |
| Endpoints assessed | | | | | |
| <i>Corneal opacity</i> | | | | | |
| Data collected for opacity | Numerical opacity value (arbitrary unit) displayed by opacitometer; opaque spots or other irregularities are noted | Numerical opacity value (arbitrary unit) displayed by opacitometer | Numerical opacity value (arbitrary unit) displayed by opacitometer | Opacity measurements were recorded directly from the output display of the opacitometer; each opacity measurement was made relative to an air blank | Opacity value not described, but likely a numerical opacity value with an arbitrary unit displayed by opacitometer |
| <i>Permeability</i> | | | | | |
| Amount and concentration of sodium fluorescein solution used | Medium is removed from the anterior chamber, which is refilled with sodium fluorescein solution; amount of dye that reaches posterior chamber is evaluated as an indicator of increased permeability or damage to the cornea | Medium is removed from the anterior chamber, which is refilled with sodium fluorescein solution; amount of dye that reaches posterior chamber is evaluated as an indicator of increased permeability or damage to the cornea | Medium is removed from the anterior chamber, which is refilled with sodium fluorescein solution; amount of dye that reaches posterior chamber is evaluated as an indicator of increased permeability or damage to the cornea | 3 of the 5 treated corneas are used for permeability measurements. After the final 24 hour opacity reading, MEM was removed from the front chamber. | After the final opacity reading, medium was removed from both chambers of the holder. The posterior chamber was refilled with complete MEM. |
| Amount and concentration of sodium fluorescein solution used | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | 1 mL of a 4 mg/mL fluorescein solution was added to the anterior chamber | 1 mL of a 4 mg/mL fluorescein solution was added to the anterior chamber |
| Incubation time for fluorescein solution | 90 minutes ±5 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes ±5 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally |
| Incubation temperature for fluorescein | 32°C (±2°C) water bath | 32°C water bath (holders completely immersed) | 32°C (±1°C) | 32°C (±1°C) water bath | 32°C |
| Instrumentation used | Spectrophotometer set at 490 nm; cuvette with a 1 cm path length is used | Spectrophotometer set at 490 nm | Microplate reader | Beckman DU-640 spectrophotometer which is zeroed with a sample of MEM | Spectrophotometer set at 490 nm |
| Instrument calibrated (y/n) | Yes | Not noted | Yes | Not noted | Not noted |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | INVITTOX Protocol #124 (BCOP Prevalidation - SOP of Microbiological Associates Ltd., UK) | INVITTOX Protocol #98 (EC/HO Validation Study; Balls et al. 1995) | Bailey et al. (2004) | Bruner et al. (1998) | Cassidy and Stanton (1997) |
|--|--|---|---|---|---|
| TEST METHOD COMPONENT | | | | | |
| Data collected for permeability | Optical density reading at 490 nm | Optical density reading at 490 nm | Optical density reading at 490 nm | Optical density reading at 490 nm | Optical density reading at 490 nm |
| Aliquot taken from posterior chamber for OD 490 nm reading | 1 mL | Not noted | Most of medium is removed from posterior chamber, then mixed in a sample tube. A 360 µL aliquot is taken from the sample tube and transferred to a 96-well plate. Standard plate map provides 2 wells for each cornea in case a dilution is required. | 1 mL | Not noted |
| Other observations | | | During the final, post-treatment opacity reading, visual observations are performed for each cornea and, if necessary, are recorded. Special attention is taken to observe dissimilar opacity patterns, tissue peeling, or residual test article. | Histopathological examination of 2 corneas per treatment and control groups | Histological examination of all corneas |
| Evaluation of test results | | | | | |
| <i>Corneal opacity</i> | | | | | |
| Basal (pretreatment) opacity subtracted from opacity of each treated cornea? | Yes | Yes | Yes | Yes | Opacity changes for each cornea were calculated by subtracting the initial opacity value from the final opacity value |
| Opacity for each treated cornea corrected for average value of negative/solvent controls? | Yes | Yes | Yes | Yes | Yes |
| Mean corrected opacity value calculated for each treatment group? | Yes | No | Yes | | Yes |
| <i>Permeability</i> | | | | | |
| OD value for each treated cornea corrected for average value of negative/solvent controls? | Yes | Yes | Yes | Yes | Yes |
| Mean corrected permeability value calculated for each treatment group? | Yes | No | Yes | | Yes |

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|---|---|---|--|---|--|
| TEST METHOD COMPONENT | | | | | |
| Formula used to calculate <i>In Vitro</i> Score | <i>In vitro</i> score = corrected opacity value + (15 x corrected OD ₄₉₀ value); the <i>in vitro</i> score is calculated for each cornea and the mean <i>in vitro</i> score is calculated from the individual <i>in vitro</i> score values | <i>In vitro</i> score = corrected opacity value + (15 x corrected OD ₄₉₀ value); the <i>in vitro</i> score is calculated for each cornea and the mean <i>in vitro</i> score is calculated from the individual <i>in vitro</i> score values | <i>In vitro</i> score = mean corrected opacity value + (15 x mean corrected OD ₄₉₀ value) | <i>In vitro</i> score calculated only for ethanol controls = corrected opacity value + (15 x corrected OD ₄₉₀ value) | <i>In vitro</i> score = mean opacity value + (15 x mean OD ₄₉₀ value) |
| <i>In vitro</i> classification of ocular irritancy | BCOP score 0 -3 = nonirritant; 3.1 - 25 = mild eye irritant; 25.1 - 55 moderate; 55.1 - 80 = severe; > 80.1 = very severe | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate; 55.1 - 80 = severe; > 80 = very severe | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate irritant; 55.1 and above = severe irritant. | Not discussed | BCOP score 0 - 25 = nonirritating to mild eye irritant; 25.1 - 55 moderate; ≥ 55.1 = severe |
| Criteria for an acceptable test | Test is accepted if positive control gives an <i>in vitro</i> score that falls within 2 SDs of the current historical mean: ethanol (36.0 - 56.0); benzalkonium chloride (98.8 - 209.2); imidazole (111.2 - 164.0) | Test is accepted if positive control values fall within following limits: benzalkonium chloride (opacity > 60, permeability >3,000, score > 110); N,N-dimethylformamide (opacity >70, permeability > 1,500, score > 100); imidazole (opacity >35, permeability > 2,000, score > 70) | Test is accepted if positive control gives an <i>in vitro</i> score that falls within 2 SDs of the current historical mean, which is updated every 3 months. | The acceptable range for the <i>in vitro</i> score for the ethanol positive control was 22.1 to 44.7 (historical mean ±SD) | The acceptable range for the <i>in vitro</i> score for the ethanol positive control was 33.7 to 69.6 (historical mean ± 2SD) |
| Conducted in compliance with GLPs | Yes | Not noted | Yes | Not noted | Not noted |
| Other useful information | | | | Dose-response curves were presented in the publication for the formulations tested showing changes in opacity over 24 hours. Photomicrographs of some histological data also are presented. | Photomicrographs of some histological data are presented in the publication. |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Casterton et al. (1996) | Cerven and Moreno (1998) | Chamberlain et al. (1997) -- IRAG Evaluation (8 data sets) | Cooper et al. (2001) | Gautheron et al. (1994) (fresh and preserved corneas) |
|---------------------------------------|--|--|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Collection of bovine eyes | Bovine eyes are collected and stored in a plastic cooler containing Hanks' Balanced Salt Solution with Ca ⁺⁺ and Mg ⁺⁺ | Bovine eyes were received from a local supplier | Bovine eyes were collected from a local slaughterhouse | Bovine eyes were obtained from a local abattoir where the eyes were excised | Bovine eyes were collected from a commercial abattoir in a plastic jar for about 25 eyes |
| Transport conditions | Not described | Eyes were transported to the laboratory in Hanks Balanced Salt Solution in a refrigerated container. | Eyes were immersed in pH-adjusted (7.2-7.4) Hanks salt solution within 2 hours after the animals were killed | Eyes transported in a container with Hanks balanced salt solution supplemented with penicillin/streptomycin | 1 L of Hanks balanced salt solution (HBSS) with Ca ⁺⁺ and Mg ⁺⁺ |
| Temperature | Ambient temperature | Not noted | Not noted | Transported to laboratory over ice packs | Ambient temperature |
| Time after slaughter until use | Immediately after receipt and no more than 3 hours after removal from carcass | Eyes were examined within 1 hour after receipt | Not noted | Not noted | Eyes were used within 2 hours of killing the animals |
| Cornea preparation | At lab, eyes carefully examined for defects; unacceptable eyes rejected | At lab, eyes carefully examined for defects; unacceptable eyes rejected | At lab, eyes carefully examined for defects; unacceptable eyes rejected | Corneas were grossly examined for damage and those exhibiting defects were discarded | At lab, eyes carefully examined for defects; unacceptable eyes rejected |
| Description of cornea dissection | Cornea dissected such that approximately 1 - 2 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea; iris and lens were removed | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea |
| Storage of isolated corneas until use | Isolated corneas stored in petri dish with Eagle's Minimum Essential Medium (MEM) until use | Not noted | Not noted | Isolated corneas stored in petri dish with HBSS until they were mounted in a corneal holder | <i>Fresh corneas</i> : isolated corneas stored in petri dish with HBSS until they were used. <i>Preserved corneas</i> : corneas were washed 3x, each for 15 minutes, in HBSS supplemented with antibiotics (penicillin/streptomycin); after rinsing in normal HBSS, they were placed individually into wells of 6-well culture plates, each containing 12 mL preservative medium; plates were then placed in the refrigerator at 4-5°C until the next day; for use, the preserved corneas were removed from the refrigerator, left on the bench for 30 minutes at room temperature, and thereafter treated the same way as fresh corneas |
| Type of cornea holder used | Cornea holder with anterior and posterior chambers, and custom-fitted rack for spectrophotometer | Specially designed holders segmented into anterior and posterior chambers | Specially made holder with two 5 mL chambers that interface with the epithelial and endothelial surfaces of the cornea | Not noted | Not noted |

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|--|--|---|---|--|--|
| TEST METHOD COMPONENT | | | | | |
| Pretreatment incubation/equilibration in corneal holder | After positioning cornea in holder and fixing in place with screws, posterior then anterior compartments of the holder are filled with warmed MEM. | After positioning cornea in holder and fixing in place with screws, posterior then anterior compartments of the holder are filled with assay medium. Cornea was inspected afterwards to ensure it was still intact. | After mounting cornea in holder, both chambers were filled with medium. | Each cornea was mounted in a holder with the endothelial side against the O-ring of the posterior half of the holder; the anterior half of the holder was then positioned on top of the cornea and screws were tightened; posterior then anterior chambers were filled with medium | Corneas were mounted in holders, which were subsequently filled with medium |
| Duration | 1 hour | At least 1 hour, but not longer than 2 hours | 1 hour | 1 hour | 1 hour |
| Temperature | 32°C water bath | 32°C water bath | 32°C water bath | 32°C (±1°C) | 32°C (±1°C) |
| Medium used for incubation | Eagle's MEM supplemented with sodium bicarbonate, L-glutamine, and fetal bovine serum; continually warmed at 32°C during use; free of phenol red | Minimal essential media supplemented with 1% fetal bovine serum (MEM). | Eagle's minimal essential medium (MEM) supplemented with 1% fetal bovine serum | Eagle's minimum essential medium (MEM) without phenol red, with 1% fetal bovine serum (complete MEM) | Minimum essential medium (MEM) supplemented with glutamine and sodium bicarbonate as indicated by the supplier; the pH was adjusted to 7.4 and the medium was freshly used or stored refrigerated (1 week stock); in daily experiments it was supplemented with 1% fetal bovine serum and used prewarmed at 32°C |
| Basal (pretreatment) opacity measurement taken | For initial absorbance readings, each cornea is read against a blank in the reference beam | An initial opacity measurement was made immediately after equilibration period and replacement of incubation media with fresh MEM | The report states that the first opacity measurement was taken after the cornea was exposed to test substance | An initial opacity measurement was made immediately after 1 hour equilibration period and replacement of incubation media with fresh complete MEM | Not noted |
| Instrument used to measure opacity | Cary 219 UV-VIS spectrophotometer set at 570 nm | OP-KIT opacimeter produced by Electro-Design Corp. of Riom, France | Specially-designed opacimeter to determine the difference in light transmission between treated and control corneas | Spectro Designs OP-KIT opacimeter (Stag Bio, Clermont, Ferrand, France) | Opacimeter (Electro-Design, Riom, France), which determines the difference in light transmission between a treated and a control cornea |
| Instrument calibrated prior to test (y/n) | Calibration not described; instrument is balanced on two blank holders (filled only with MEM) | Not noted | Not noted | Not noted | The instrument was previously calibrated with standardized opaque sheets of polyester |
| Criteria for acceptable corneas for testing after equilibration period | Corneas with absorbance values > 0.1 are removed from the study | Not noted | Not noted | Not noted | Not noted |
| Treatment groups used (No. of corneas used/test substance) | At least 4 corneas per test material | Five corneas | 3 to 6 corneas for each treatment group | 5 corneas per formulation tested | 6 corneas per test substance |
| Controls | 3 corneas | 2 corneas (at each opacity reading, each treated cornea was scored in comparison with the 2 control corneas) | 3 to 6 corneas for each control | 3 corneas for negative control and 5 corneas for positive control | 3 corneas |

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|------------------------------|---|---|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Positive control(s), if used | Not described | | 3 labs reported use of acetone as a positive control for liquids; one lab reported use of imidazole as a positive control for solids | Ethanol | Not noted |
| Negative/untreated control | 3 corneas with the lowest absorbance values are selected as controls | | Not described | 3 corneas with opacity readings close to the median opacity for all the corneas were treated with complete MEM | 3 corneas treated with MEM |
| Other controls, if used | | | | | |
| Treatment of corneas | The anterior chamber is aspirated of MEM | Just prior to treatment, the anterior chamber is completely emptied of MEM. | | | The medium was removed from both chambers of the holders using a needle attached to a vacuum pump or a syringe. The posterior chamber was refilled with fresh MEM |
| <i>Liquid substances</i> | Prewarmed (32°C) test material is added to anterior chamber; corneas incubated in a horizontal position to completely bath the corneal surface with test material | Test substances are added to anterior chamber of holder, which is turned to a horizontal position | Test substances are added to anterior chamber of holder, which is turned to a horizontal position | Shampoo formulations were tested | Test substances are added to anterior chamber of holder, which is turned to a horizontal position |
| Concentration tested | 100% | 100% | 100% | 100% and 10% (w/v) prepared in complete MEM | 100% |
| Amount tested | 1.00 mL | 750 µL (test substances) | 500 µL (test substances) | 750 µL (test substances and controls) | 750 µL (test substances and controls) |
| Incubation time | 10 minutes | 10 minutes (± 1 minute) | 10 minutes (3 labs), 30 minutes (3 labs), or 60 minutes (1 lab); 1 lab used both 10 and 30 minute exposures; 1 lab did not report an exposure time | For most materials, incubation time was 10 minutes for undiluted materials and 60 minutes for 10% dilutions; in a separate study, 2 materials were tested undiluted for 10, 30, and 60 minutes AND as 10% dilutions for 10, 30, 60 and 120 minutes. | 10 minutes |
| Incubation temperature | Room temperature | 32°C water bath | 32°C | 32°C (±1°C) water bath | 32°C |

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|---|--|---|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Rinsing procedure | Epithelium is washed 3 or more times with HBSS until the wash medium is clear. After last rinse, both chambers are aspirated and filled with fresh MEM. | Test substance removed from chamber by washing with MEM. Both chambers then refilled with fresh MEM. NOTE: For test materials containing alcohol, an additional opacity measurement was taken following the 10 minute exposure time and addition of fresh medium to both chambers | At the end of the exposure, the epithelial side was washed, the anterior compartment was refilled with MEM + 1% fetal bovine serum and a first opacity measurement taken | Epithelium is washed 3 or more times with complete MEM containing phenol red to ensure complete removal of test material; corneas given a final rinse with complete MEM without phenol red; anterior chamber was refilled with complete MEM and opacity determined | Epithelium is washed 3 or more times with 4 mL of MEM until the wash medium is clear. Anterior chamber was refilled with medium, and first opacity measurement taken. |
| Post-treatment incubation (time, temp.) | Corneas are incubated for 2 more hours in a 32°C water bath | Corneas are incubated for 2 hours in a 32°C water bath; the MEM was changed and opacity measured, comparing each of the 5 treated corneas to the 2 control corneas | Corneas are incubated for 2 more hours in a 32°C water bath, followed by a second opacity reading, which was the reported value | Corneas are incubated in a 32±1°C water bath until total incubation time reaches 120 minutes. Post-treatment incubation varies depending on initial exposure time from 110 minutes to 90 minutes to 60 minutes or no further incubation. A second opacity reading was taken for all corneas except for those with a 120 minute exposure time. | After treatment, corneas were incubated for 2 hours at 32°C; a second opacity measurement was taken, which was used for calculations |
| Surfactants | Not described | Not applicable | Although surfactants were tested by some labs, a specific protocol for surfactants was not included in report | Not tested | |
| Concentration tested | | | | | 10% in MEM |
| Amount tested | | | | | 750 µL (test substance and controls) |
| Incubation time | | | | | 10 minutes |
| Incubation temperature | | | | | 32°C |
| Rinsing procedure | | | | | Epithelium is washed 3 or more times with 4 mL of MEM until the wash medium is clear. Anterior chamber was refilled with medium, and first opacity measurement taken. |
| Post-treatment incubation (time, temp.) | | | | | After treatment, corneas were incubated for 2 hours at 32°C; a second opacity measurement was taken, which was used for calculations |
| Solid substances | Solids are applied directly to the corneal surface. The glass window of the anterior chamber of the corneal holder is removed to facilitate application of solids. | | | Not tested | |

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|--|---|---|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Concentration tested | 100% | Solids dissolved in MEM at a 20% dilution | 20% (200 mg/mL) in MEM + 1% fetal bovine serum; many compounds were tested as suspensions | | Approximate 20% solution or suspension (200 mg + 1 mL) in MEM |
| Amount tested | Enough to cover the corneal thoroughly (about 1/8 teaspoon) | 750 µL (test substance) | 500 µL (test substance) | | 750 µL (test substance and controls) |
| Incubation time | 1 hour | | 4 hours | | 4 hours |
| Incubation temperature | 32°C water bath | 32°C water bath | room temperature | | 32°C |
| Rinsing procedure | Epithelium is washed 3 or more times with HBSS until the wash medium is clear. After last rinse, both chambers are aspirated and filled with fresh MEM. | Test substance removed from chamber by washing with MEM. Both chambers then refilled with fresh MEM. Opacity was measured, comparing each of the 5 treated corneas to the 2 control corneas. | The epithelial side was washed, fresh medium was added, and opacity was measured | | Epithelium is washed 3 or more times with 3 mL of cMEM each time from a syringe or until all particles are removed; fresh cMEM is added to both chambers and opacity measurement is taken |
| Post-treatment incubation (time, temp.) | 1 hour | Not performed | Not performed | | Not performed |
| Endpoints assessed | | | | | |
| <i>Corneal opacity</i> | | | | | |
| Data collected for opacity | UV-VIS spectrophotometer absorbance readings at 570 nm | A pre-exposure determination of opacity was made for each control by measuring each against the blanks supplied with the opacitometer; a pre-exposure determination of opacity was made for each of the test corneas by measuring against each control cornea | Not described | The opacity values obtained at the second opacity measurement (except for the 120 minute exposure group) were used to calculate the corneal opacity | Numerical opacity value (arbitrary unit) displayed by opacitometer |
| <i>Permeability</i> | After the final absorbance readings, both chambers are aspirated and the posterior side is filled with fresh MEM. | Immediately following the 2 hour opacity measurement, the MEM was changed in the posterior chamber of both the control and test corneas. | Fresh medium is added to the posterior compartment | After the final opacity measurement, the medium was removed from both chambers of the holder. The posterior chamber was refilled with fresh complete MEM. | After the final opacity measurement, the medium was removed from both chambers of the holder. The posterior chamber was refilled with fresh MEM. |
| Amount and concentration of sodium fluorescein solution used | 1 mL of fluorescein solution (0.4% in Dulbecco's phosphate buffered saline) was added to the anterior chamber | 1.0 mL of 0.4% sodium fluorescein solution | 1 mL of a 5 mg/mL solution of sodium fluorescein in Dulbecco's phosphate buffered saline was added to the anterior compartment | 1 mL of a 4 mg/mL fluorescein solution was added to the anterior chamber | 1 mL of a 0.4% fluorescein solution is used for liquids and surfactants; 1 mL of a 0.5% fluorescein solution is used for solids |
| Incubation time for fluorescein solution | 90 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally |
| Incubation temperature for fluorescein | 32°C water bath | 32°C water bath | Not specified | 32±1°C water bath | 32°C |
| Instrumentation used | Dynatech MR5000 microplate reader | Spectronic 20 spectrophotometer | Spectrophotometer | Molecular Devices Vmax kinetic microplate reader (Molecular Devices Corp., Menlo Park, CA, USA) | Spectrophotometer set at 490 nm |
| Instrument calibrated (y/n) | Not described | Not described | Not described | Not described | Not noted |

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|--|--|---|---|--|--|
| TEST METHOD COMPONENT | | | | | |
| Data collected for permeability | Optical density reading at 490 nm | Optical density reading at 450 nm | Optical density reading at 490 nm | Optical density reading at 490 nm | Optical density reading at 490 nm |
| Aliquot taken from posterior chamber for OD 490 nm reading | 100 μ L | Not described | Not specified | 360 μ L added to designated well of a 96-well plate | Not noted |
| Other observations | | | | | |
| | | | | Corneal swelling (wet weight of 8 mm tissue punch) and histology | |
| Evaluation of test results | | | | | |
| <i>Corneal opacity</i> | | | | | |
| Basal (pretreatment) opacity subtracted from opacity of each treated cornea? | Pretreatment absorbance values for each treated cornea are subtracted from the corresponding 2 hour post-treatment absorbance values | A pre-exposure determination of opacity was made for each control by measuring each against the blanks supplied with the opacitometer; a pre-exposure determination of opacity was made for each of the test corneas by measuring against each control cornea | Not described | Yes | Basal opacity not performed |
| Opacity for each treated cornea corrected for average value of negative/solvent controls? | The absorbance for each treated cornea is corrected by the mean absorbance value for the three control corneas | The corrected mean opacity score was calculated, using the control and treated cornea opacity values as determined from the OP-KIT opacitometer | The difference in light transmission between treated and control corneas was determined with the opacitometer | The corrected opacity value of each cornea was calculated by subtracting the average change in opacity of the negative control corneas from that of each treated cornea | The difference in light transmission between treated and control corneas was determined with the opacitometer |
| Mean corrected opacity value calculated for each treatment group? | No | The corrected mean opacity score was calculated, using the control and treated cornea opacity values as determined from the OP-KIT opacitometer | The mean value of opacity \pm SD was calculated for each substance | The mean opacity value of each treatment group was calculated by averaging the mean corrected opacity values of the treated corneas for each treatment group | For each substance evaluated, the mean value of opacity \pm SD was calculated |
| <i>Permeability</i> | | | | | |
| OD value for each treated cornea corrected for average value of negative/solvent controls? | The instrument setup allows calculations to take into account both the blank and the control values; therefore, the resulting readings require no further correction | The corrected mean OD 450 nm score was calculated using the control and treated OD values | The amount of dye penetration through the control corneas was subtracted from the amount of dye penetration through treated corneas | The corrected OD ₄₉₀ was calculated by subtracting the mean OD ₄₉₀ value of the negative control corneas from the OD ₄₉₀ of each treated cornea | Not noted |
| Mean corrected permeability value calculated for each treatment group? | Instrument setup takes into account number of replicates per test material; the obtained value represents the mean corrected optical permeability that results from exposure of the corneal surface to a test material | The corrected mean OD 450 nm score was calculated using the control and treated OD values | The mean absorbance value \pm SD was calculated for each substance | The mean OD ₄₉₀ value of each treatment group was calculated by averaging the corrected OD ₄₉₀ values of the treated corneas | The mean OD ₄₉₀ value of each treatment group was calculated by averaging the OD ₄₉₀ values of the treated corneas |

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|---|--|--|---|---|--|
| TEST METHOD COMPONENT | | | | | |
| Formula used to calculate <i>In Vitro</i> Score | The two endpoints, opacity and permeability, are evaluated separately. | <i>In vitro</i> score = corrected mean opacity value + (15 x mean corrected OD ₄₅₀ value) | For some submissions, <i>in vitro</i> score = opacity value + (15 x OD ₄₉₀ value). In other submissions, the opacity and permeability values are considered separately, with the irritancy classification based on the greater of the two values. | <i>In vitro</i> score = mean opacity value + (15 x mean OD ₄₉₀ value) | <i>In vitro</i> score = mean opacity value + (15 x mean OD ₄₉₀ value) |
| <i>In vitro</i> classification of ocular irritancy | The irritation class is based on the endpoint that equates to the greater irritation potential: mild (opacity <0.400 or permeability <0.175); moderate (0.400 ≤ opacity < 1.300 or 0.175 ≤ permeability < 0.600); severe (opacity >1.300 or permeability >0.600) | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate; 55.1 and greater = severe | Not noted | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate; 55.1 and greater = severe (applied to both undiluted and diluted test materials) | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate; 55.1 and greater = severe |
| Criteria for an acceptable test | Not noted | Not noted | Not noted | Not described | Not noted |
| Conducted in compliance with GLPs | Not noted | Not noted | Not noted | Not described | Not noted |
| Other useful information | | | A generalized BCOP protocol was provided in the IRAG report for the eight BCOP data sets evaluated by the IRAG working group. Although some protocol differences were noted between the testing laboratories (e.g., exposure time and data analysis), some generalizations do not reflect a majority of other published protocols (e.g., amount of substance tested, use of assay medium, measuring basal corneal opacity prior to exposure period). Note that the generalized protocol description was not very detailed, and that individual protocols for each of the 8 data sets were not provided. | | |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|---------------------------------------|---|---|---|--|--|
| TEST METHOD COMPONENT | | | | | |
| Collection of bovine eyes | | Bovine eyes were obtained from a local abattoir where the eyes were excised | Bovine eyes were collected in a plastic container | Bovine eyes obtained from a local abattoir | Eyes collected from a local slaughterhouse |
| Transport conditions | Transported in a receptacle containing Hank's Balanced Salt Solution with Ca ⁺⁺ and Mg ⁺⁺ , and with 100 IU/mL penicillin and 100 µg/mL streptomycin (HBSS) | Eyes transported in a container with Hanks balanced salt solution supplemented with penicillin/streptomycin | Eyes transported in Hanks balanced salt solution | Eyes transported to the laboratory in a saline solution (Hanks) | Eyes transported to the laboratory immersed in pH-adjusted (7.2 - 7.4) Hanks salt solution |
| Temperature | Transported on ice | Transported to laboratory over ice packs | Room temperature | Not noted | Not noted |
| Time after slaughter until use | Eyes arrive in the laboratory within 4-5 hours of removing first eyes in a batch from cattle | Not noted | Collection of eyes and transportation to testing laboratory was completed within 2 hours | Not noted | Eyes were collected and transported to the laboratory within 2 hours of killing the animals |
| Cornea preparation | At lab eyes are examined carefully and those with defects such as neovascularization, pigmentation, opacity, or scratches are rejected for testing. | Corneas were grossly examined for damage and those exhibiting defects were discarded | All eyes were carefully examined visually, or with a stereomicroscope, if needed, and eyes presenting defects were rejected | Eyes were carefully examined for their quality at the laboratory | At lab, eyes carefully examined for defects; unacceptable eyes rejected |
| Description of cornea dissection | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Iris and lens were removed, and cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Not noted | Selected corneas were dissected with a 2-3 mm rim of sclera attached; the iris and the lens were removed |
| Storage of isolated corneas until use | Isolated corneas stored in petri dish with HBSS/penicillin/streptomycin solution until mounted in holders | Isolated corneas stored in petri dish with HBSS until they were mounted in a corneal holder | Isolated corneas stored in petri dish with HBSS until they were mounted in a corneal holder | Not applicable. After dissection, corneas were quickly mounted in holders | Corneas were mounted in holders immediately after dissection |
| Type of cornea holder used | Cornea holder for opacitometer with anterior (epithelial side) and posterior (endothelial side) chambers | Not noted | Conventional cornea holder for opacitometer with anterior (epithelial side) and posterior (endothelial side) chambers | Composed of specially designed plastic chambers with two separate compartments | Holder consisted of two 5 mL chambers |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|--|---|---|--|--|---|
| TEST METHOD COMPONENT | | | | | |
| Pretreatment incubation/equilibration in corneal holder | Holders and medium are prewarmed to 32°C before mounting corneas. Endothelial side of the cornea is placed against O-ring of posterior chamber. Anterior chamber is placed over the cornea and chambers are joined together. Posterior then anterior chambers are filled with assay medium, avoiding formation of air bubbles and minimizing shear forces on the corneal endothelium. | Each cornea was mounted in a holder filled with medium | Each cornea was mounted in a holder with the endothelial side against the O-ring of the posterior half of the holder; the anterior half of the holder was then positioned on top of the cornea and screws were tightened; posterior then anterior chambers were filled with medium | Corneas were firmly clamped in between the anterior and posterior compartments | |
| Duration | 1 hour | 1 hour | 1 hour | 1 hour | 1 hour |
| Temperature | 32°C (±1°C) maintained in a forced air incubator | 32°C (±1°C) | 32°C (±1°C) | 32°C | 32°C |
| Medium used for incubation | Eagle's Minimum Essential Medium (MEM) without phenol red containing 1% fetal bovine serum (complete MEM) | Eagle's minimum essential medium (MEM) without phenol red, with 1% fetal bovine serum (complete MEM) | Prewarmed Eagle's minimum essential medium | Eagle's minimum essential medium supplemented with 1% fetal calf serum | Eagle's minimum essential medium (pH 7.2-7.4) supplemented with 1% fetal bovine serum |
| Basal (pretreatment) opacity measurement taken | After the 1 hour incubation period, the medium is removed from both chambers of each holder (anterior chamber first) and replaced with fresh complete MEM. Then an initial opacity reading is taken and recorded for each cornea. | An initial opacity measurement was made immediately after 1 hour equilibration period and replacement of incubation media with fresh complete MEM | An initial opacity measurement was made immediately after 1 hour equilibration period | Not noted | No |
| Instrument used to measure opacity | Opacitometer (Spectro Designs OP-KIT), which determines light transmission through the center of each mounted cornea | Spectro Designs OP-KIT opacitometer (Stag Bio, Clermont, Ferrand, France) | Opacitometer | Opacitometer | Specially-designed opacitometer; light passes simultaneously through a control and treated cornea held in separate chambers and the transmitted light is detected by photocells in each chamber |
| Instrument calibrated prior to test (y/n) | Not noted | Not noted | Not noted | Not noted | Instrument was calibrated but it's not clear if this was done prior to each test |
| Criteria for acceptable corneas for testing after equilibration period | Corneas that display an initial opacity reading greater than 10 units from the average opacity for all of the corneas are not used in the assay | Not noted | Not noted | Not noted | Not noted |
| Treatment groups used (No. of corneas used/test substance) | 3 to 5 corneas per test article | 5 corneas per formulation tested | 3 corneas per formulation tested (cosmetics and personal care products) | Not noted | 4 corneas per test compound |
| Controls | 2 or 3 corneas | 3 corneas for negative control and 2 corneas for positive control | 3 corneas with the lowest opacity scores were selected as negative controls | Vehicle controls used, but specific number not noted | 1 cornea for the "control" slot in the opacitometer |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|------------------------------|--|--|--|--|---|
| TEST METHOD COMPONENT | | | | | |
| Positive control(s), if used | Acetone was the concurrent positive control (10 minute exposure) | Ethanol | | | Not noted |
| Negative/untreated control | Corneas that have opacity values close to the average opacity for all corneas are chosen as the negative (or solvent) control corneas. The negative control is sterile, deionized water. | 3 corneas with opacity readings close to the median opacity for all the corneas were treated with complete MEM | Eagle's MEM | Eagle's MEM | On each experimental day, two corneas were exposed to the vehicle and the one remaining the clearest was used as the control for the opacitometer |
| Other controls, if used | | | | | |
| Treatment of corneas | | | The MEM was removed from both compartments, anterior compartment first, and the posterior compartment refilled with fresh MEM. | After equilibration, fresh medium was added to the posterior compartment (endothelial side) and test material or vehicle was added to the anterior compartment (epithelial side) | To start the experiment, fresh MEM with 1% FBS was added to the posterior compartment |
| <i>Liquid substances</i> | <i>Nonviscous and semiviscous liquids</i> tested using "closed chamber method". <i>Semiviscous and viscous liquids</i> tested using "open chamber method". | | The test material was added to the anterior compartment | Cosmetic formulations were tested | Test substances were added to the anterior compartment (epithelium side) |
| Concentration tested | 10% (w/v) solution | 100% for conditioners; shampoos were tested at both 100% and 10% (w/v) prepared in complete MEM | 100% | Not noted | 100% |
| Amount tested | 750 µL (test substances and controls) | 750 µL (test substances and controls) | 750 µL (test substances and control) | Not noted | 500 µL |
| Incubation time | 1 hour | Undiluted materials were incubated for 10 minutes and 10% dilutions were incubated for 60 minutes | 10 minutes | 10 minutes | 30 minutes |
| Incubation temperature | 32°C (±1°C) | 32°C (±1°C) | 32°C (±2°C) water bath | Not noted | Room temperature |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|---|---|--|--|--|--|
| TEST METHOD COMPONENT | | | | | |
| Rinsing procedure | Epithelium is washed 3 or more times with 2-3 mL of cMEM (with phenol red) from a syringe. Once the rinsing medium is clear, one last rinse of the epithelium is performed using fresh complete MEM (without phenol red). | Epithelium is washed 3 or more times with complete MEM containing phenol red to ensure complete removal of test material; corneas given a final rinse with complete MEM without phenol red; anterior chamber was refilled with complete MEM and opacity determined | The epithelium was washed at least three times, until the medium was clear, with MEM | The epithelial side was washed; no details provided | The epithelial side was washed; no details provided |
| Post-treatment incubation (time, temp.) | The anterior chamber is refilled with fresh complete MEM. A post-treatment opacity reading is taken and recorded for each cornea. Visual observations are performed for each cornea. Holders are incubated in a vertical position at 32°C ($\pm 1^\circ\text{C}$) for 1 hour. | After treatment, corneas were incubated for 2 hours at 32(± 1)°C; a second opacity measurement was taken, which was used for calculations | The anterior compartment was refilled with MEM, and an initial opacity measurement taken. Corneas were incubated for 2 hours at 32(± 1)°C, and a second opacity measurement was taken, which was used for calculations | The anterior compartment was refilled with fresh medium. Corneas were incubated for 2 hours, temperature not noted | The anterior compartment was refilled with MEM + 1%FBS and a first opacity reading was performed; corneas were incubated at 32°C for another 2 hours followed by a second opacity reading which was the reported value |
| <i>Surfactants</i> | | Not tested | Not tested | | |
| Concentration tested | | | | Not noted | |
| Amount tested | | | | Not noted | |
| Incubation time | | | | 10 minutes | |
| Incubation temperature | | | | Not noted | |
| Rinsing procedure | | | | The epithelial side was washed; no details provided | |
| Post-treatment incubation (time, temp.) | | | | The anterior compartment was refilled with fresh medium. Corneas were incubated for 2 hours, temperature not noted | |
| <i>Solid substances</i> | | Not tested | | Not tested | |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|--|--|---|--|---|---|
| TEST METHOD COMPONENT | | | | | |
| Concentration tested | | | Concentration not noted, although solids were tested as solutions or suspensions | | 20% (200 mg/mL) in MEM + 1%FBS as solutions or suspensions |
| Amount tested | | | 750 μ L (test substance and vehicle control) | | 500 μ L |
| Incubation time | | | 4 hours | | 4 hours |
| Incubation temperature | | | 32°C (\pm 2°C) water bath | | Room temperature |
| Rinsing procedure | | | Epithelium was washed at least three times with MEM until the medium was clear and and particulate free. Gentle swirling movements were necessary to remove particulates from the surface of the cornea. The posterior then the anterior chambers were refilled with fresh MEM, and a final opacity measurement taken. | | Epithelial side was washed, but no details provided; opacity was measured |
| Post-treatment incubation (time, temp.) | | | Not performed | | Not performed |
| Endpoints assessed | | | | | |
| <i>Corneal opacity</i> | | | | | |
| Data collected for opacity | Numerical opacity value (arbitrary unit) displayed by opacitometer | The opacity values obtained at the second opacity measurement (except for the 120 minute exposure group) were used to calculate the corneal opacity | Opacity was measured by placing each control cornea in the "control" compartment of the opacitometer. Each treated cornea was placed the "treated" compartment and the values displayed were recorded. The glass portion of each holder was dried prior to opacity measurement. | No details provided | The opacity reading is expressed as arbitrary units on a scale which is determined by calibrating the instrument with increasing thicknesses of a standard opaque material (provided by the manufacturer) |
| <i>Permeability</i> | Medium is removed from the anterior chamber, which is refilled with sodium fluorescein solution; amount of dye that reaches posterior chamber is evaluated as an indicator of increased permeability or damage to the cornea | After the final opacity measurement, the medium was removed from both chambers of the holder. The posterior chamber was refilled with fresh complete MEM. | Medium was removed from both chambers of each holder, anterior chamber first. Fresh MEM was added to the posterior chamber. | Medium was removed from both compartments. Fresh medium was added to the posterior compartment. | After the final opacity readings were completed, medium was removed from the holders. Fresh medium was added to the posterior compartment. |
| Amount and concentration of sodium fluorescein solution used | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | 1 mL of a 4 mg/mL fluorescein solution was added to the anterior chamber | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | Sodium fluorescein solution was added to the anterior compartment; no details provided | 1 mL of 5 mg/mL Na-fluorescein solution in Dulbecco's phosphate-buffered saline was added to the anterior compartment |
| Incubation time for fluorescein solution | 90 minutes \pm 5 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally | 90 minutes | 90 minutes; holder incubated horizontally |
| Incubation temperature for fluorescein | 32°C (\pm 1°C) | 32 \pm 1°C water bath | 32°C (\pm 2°C) water bath | Not noted | Not noted |
| Instrumentation used | Microplate reader | Molecular Devices Vmax kinetic microplate reader (Molecular Devices Corp., Menlo Park, CA, USA) | Optical density was measured spectrophotometrically in a plate reader using 200 μ L MEM as a blank | Not specified | Measured spectrophotometrically at 490 nm (peak wavelength for Na-fluorescein absorbance) |
| Instrument calibrated (y/n) | Yes | Not described | Not noted | Not noted | Not noted |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|--|--|--|---|---|--|
| TEST METHOD COMPONENT | | | | | |
| Data collected for permeability | Optical density reading at 490 nm | Optical density reading at 490 nm | Optical density reading at 490 nm | Absorbance values determined spectrophotometrically at 490 nm | Optical density reading at 490 nm |
| Aliquot taken from posterior chamber for OD 490 nm reading | Most of medium is removed from posterior chamber, then mixed in a sample tube. A 360 μ L aliquot is taken from the sample tube and transferred to a 96-well plate. Standard plate map provides 2 wells for each cornea in case a dilution is required. | Not noted | 200 μ L | Not noted | Not noted |
| Other observations | During the final, post-treatment opacity reading, visual observations are performed for each cornea and, if necessary, are recorded. Special attention is taken to observe dissimilar opacity patterns, tissue peeling, or residual test article. | Corneal swelling (dry weight of 8 mm tissue punch) and histology | | | |
| Evaluation of test results | | | | | |
| <i>Corneal opacity</i> | | | | | |
| Basal (pretreatment) opacity subtracted from opacity of each treated cornea? | Yes | Yes | Not noted | Not noted | Basal opacity not measured for each cornea |
| Opacity for each treated cornea corrected for average value of negative/solvent controls? | Yes | The corrected opacity value of each cornea was calculated by subtracting the average change in opacity of the negative control corneas from that of each treated cornea | The difference in light transmission between treated and control corneas was determined with the opacitometer | Not noted | Opacitometer determines the difference in light transmission between treated and control corneas |
| Mean corrected opacity value calculated for each treatment group? | Yes | The mean corrected opacity value of each treatment group was calculated | Not noted | Not noted | Mean opacity value \pm SD was calculated for each treatment group |
| <i>Permeability</i> | | | | | |
| OD value for each treated cornea corrected for average value of negative/solvent controls? | Yes | The corrected OD ₄₉₀ was calculated by subtracting the mean OD ₄₉₀ value of the negative control corneas from the OD ₄₉₀ of each treated cornea | Not noted | Not noted | No |
| Mean corrected permeability value calculated for each treatment group? | Yes | The mean OD ₄₉₀ value of each treatment group was calculated | Not noted | Not noted | Mean OD value \pm SD was calculated |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Gettings et al. (1996) | Jones et al. (2001) | Rachui et al. (1994) | Rougier et al. (1994) | Sina et al. (1995) |
|---|---|---|--|---|--|
| TEST METHOD COMPONENT | | | | | |
| Formula used to calculate <i>In Vitro</i> Score | <i>In vitro</i> score = mean corrected opacity value + (15 x mean corrected OD ₆₀₀ value) | <i>In vitro</i> score = mean opacity value + (15 x mean OD ₆₀₀ value) | <i>In vitro</i> score = opacity value + (15 x OD ₆₀₀ value) | <i>In vitro</i> score = opacity value + (15 x absorbance value) | It was not clearly stated that mean values were used in the formulas. <i>In vitro</i> score = opacity value + (15 x OD ₆₀₀ value). This formula was derived empirically during in-house and interlaboratory evaluation studies. Data generated for 36 compounds in a multilaboratory study were subjected to a multivariate analysis to determine the equation of best fit between the <i>in vivo</i> and <i>in vitro</i> data. |
| <i>In vitro</i> classification of ocular irritancy | The surfactant-based formulations induced little opacity, so the permeability value was used to assign an <i>in vitro</i> classification (>0.600 = severe irritant) | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate; 55.1 and greater = substantial | For each test substance an average was taken of <i>in vitro</i> scores obtained for 3 corneas. BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 mild/moderate; 55.1 and greater = severe | Not noted; likely the same one used by Gautheron et al. (1994) | BCOP score 0 - 15 = nonirritant/mild; >15 - 25 = mild eye irritant; >25 - 55 moderate; >55 = severe |
| Criteria for an acceptable test | Test is accepted if positive control gives an <i>in vitro</i> score that falls within 2 SDs of the current historical mean, which is updated every 3 months. | Not described | Not described | Not noted | Not noted |
| Conducted in compliance with GLPs | Yes | Not noted | Not noted | | Not noted |
| Other useful information | | | | | |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|---------------------------------------|---|---|---|
| <i>TEST METHOD COMPONENT</i> | | | |
| Collection of bovine eyes | | | Bovine eyes were excised in the slaughterhouse shortly after slaughter. |
| Transport conditions | Transported in a receptacle containing Hank's Balanced Salt Solution with Ca ⁺⁺ and Mg ⁺⁺ , and with 100 IU/mL penicillin and 100 µg/mL streptomycin (HBSS) | Transported in a receptacle containing Hank's Balanced Salt Solution with Ca ⁺⁺ and Mg ⁺⁺ , and with 100 IU/mL penicillin and 100 µg/mL streptomycin (HBSS) | Eyes were transported immersed in Hanks' balanced salt solution |
| Temperature | Transported on ice | Transported on ice | Not noted |
| Time after slaughter until use | Eyes arrive in the laboratory within 4-5 hours of removing first eyes in a batch from cattle | Eyes arrive in the laboratory within 4-5 hours of removing first eyes in a batch from cattle | Not noted |
| Cornea preparation | At lab eyes are examined carefully and those with defects such as neovascularization, pigmentation, opacity, or scratches are rejected for testing. | At lab eyes are examined carefully and those with defects such as neovascularization, pigmentation, opacity, or scratches are rejected for testing. | |
| Description of cornea dissection | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Cornea dissected such that approximately 2 - 3 mm rim of sclera surrounds cornea | Corneas were dissected from eyes leaving a small sclera rim (about 2 mm), after which they were rinsed twice in HBSS before mounting in corneal holders |
| Storage of isolated corneas until use | Isolated corneas stored in petri dish with HBSS/penicillin/streptomycin solution until mounted in holders | Isolated corneas stored in petri dish with HBSS/penicillin/streptomycin solution until mounted in holders | Not noted |
| Type of cornea holder used | Cornea holder for opacitometer with anterior (epithelial side) and posterior (endothelial side) chambers | Cornea holder for opacitometer with anterior (epithelial side) and posterior (endothelial side) chambers | Not noted |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|--|---|---|---|
| TEST METHOD COMPONENT | | | |
| Pretreatment incubation/equilibration in corneal holder | Holders and medium are prewarmed to 32°C before mounting corneas. Endothelial side of the cornea is placed against O-ring of posterior chamber. Anterior chamber is placed over the cornea and chambers are joined together. Posterior then anterior chambers are filled with assay medium, avoiding formation of air bubbles and minimizing shear forces on the corneal endothelium. | Holders and medium are prewarmed to 32°C before mounting corneas. Endothelial side of the cornea is placed against O-ring of posterior chamber. Anterior chamber is placed over the cornea and chambers are joined together. Posterior then anterior chambers are filled with assay medium, avoiding formation of air bubbles and minimizing shear forces on the corneal endothelium. | |
| Duration | 1 hour | 1 hour | 1 hour |
| Temperature | 32°C (±1°C) maintained in a forced air incubator | 32°C (±1°C) maintained in a forced air incubator | 32°C |
| Medium used for incubation | Eagle's Minimum Essential Medium (MEM) without phenol red containing 1% fetal bovine serum (complete MEM) | Eagle's Minimum Essential Medium (MEM) without phenol red containing 1% fetal bovine serum (complete MEM) | Eagle's Minimal Essential Medium (MEM, Sigma) supplemented with serum and sodium hydrogen carbonate pH adjusted to 7.2 (complete MEM). |
| Basal (pretreatment) opacity measurement taken | After the 1 hour incubation period, the medium is removed from both chambers of each holder (anterior chamber first) and replaced with fresh complete MEM. Then an initial opacity reading is taken and recorded for each cornea. | After the 1 hour incubation period, the medium is removed from both chambers of each holder (anterior chamber first) and replaced with fresh complete MEM. Then an initial opacity reading is taken and recorded for each cornea. | An initial opacity measurement was made immediately after 1 hour equilibration period and replacement of incubation media with fresh complete MEM |
| Instrument used to measure opacity | Opacitometer (Spectro Designs OP-KIT), which determines light transmission through the center of each mounted cornea | Opacitometer (Spectro Designs OP-KIT), which determines light transmission through the center of each mounted cornea | OP-KIT, Electro Design, Riom, France |
| Instrument calibrated prior to test (y/n) | Not noted | Not noted | |
| Criteria for acceptable corneas for testing after equilibration period | Corneas that display an initial opacity reading greater than 10 units from the average opacity for all of the corneas are not used in the assay | Corneas that display an initial opacity reading greater than 10 units from the average opacity for all of the corneas are not used in the assay | Corneas were rejected if their background opacity grade was greater than 3 |
| Treatment groups used (No. of corneas used/test substance) | 3 to 5 corneas per test article | 3 to 5 corneas per test article | 6 corneas per test compound |
| Controls | 2 or 3 corneas | 2 or 3 corneas | 3 corneas |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|------------------------------|--|--|--|
| TEST METHOD COMPONENT | | | |
| Positive control(s), if used | <i>Liquids and surfactants</i> : undiluted ethanol; <i>solid test articles</i> : 20% (w/v) solution of imidazole in complete MEM (without phenol red) | <i>Liquids and surfactants</i> : undiluted ethanol; <i>solid test articles</i> : 20% (w/v) solution of imidazole in complete MEM (without phenol red) | Not noted |
| Negative/untreated control | Corneas that have opacity values close to the average opacity for all corneas are chosen as the negative (or solvent) control corneas. The negative control is sterile, deionized water. | Corneas that have opacity values close to the average opacity for all corneas are chosen as the negative (or solvent) control corneas. The negative control is sterile, deionized water. | Complete MEM |
| Other controls, if used | | | |
| Treatment of corneas | | | Just prior to treatment, the anterior chamber is completely emptied of MEM |
| Liquid substances | <i>Nonviscous and semiviscous liquids</i> tested using "closed chamber method". <i>Semiviscous and viscous liquids</i> tested using "open chamber method". | <i>Nonviscous and semiviscous liquids</i> tested using "closed chamber method". <i>Semiviscous and viscous liquids</i> tested using "open chamber method". | Test substances were added to the anterior compartment (epithelium side) |
| Concentration tested | Generally tested at 100% (neat); dilutions performed as needed or requested | Generally tested at 100% (neat); dilutions performed as needed or requested | 100% |
| Amount tested | 750 µL (test substances and controls) | 750 µL (test substances and controls) | 750 µL |
| Incubation time | 10 minutes (±30 seconds) | 10 minutes (±30 seconds) | 10 minutes |
| Incubation temperature | 32°C (±1°C) | 32°C (±1°C) | Not noted |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|---|---|---|--|
| TEST METHOD COMPONENT | | | |
| Rinsing procedure | Epithelium is washed 3 or more times with 2-3 mL of cMEM (with phenol red) from a syringe. Once the rinsing medium is clear, one last rinse of the epithelium is performed using fresh complete MEM (without phenol red). | Epithelium is washed 3 or more times with 2-3 mL of cMEM (with phenol red) from a syringe. Once the rinsing medium is clear, one last rinse of the epithelium is performed using fresh complete MEM (without phenol red). | Not noted |
| Post-treatment incubation (time, temp.) | The anterior chamber is refilled with fresh complete MEM. A post-treatment opacity reading is taken and recorded for each cornea. Visual observations are performed for each cornea. Holders are incubated in a vertical position at 32°C (±1°C) for 2 hours. | The anterior chamber is refilled with fresh complete MEM. A post-treatment opacity reading is taken and recorded for each cornea. Visual observations are performed for each cornea. Holders are incubated in a vertical position at 32°C (±1°C) for 2 hours. | Corneas were incubated for 2 hours; however, no other details provided |
| <i>Surfactants</i> | | | Not tested |
| Concentration tested | | | |
| Amount tested | | | |
| Incubation time | | | |
| Incubation temperature | | | |
| Rinsing procedure | | | |
| Post-treatment incubation (time, temp.) | | | |
| <i>Solid substances</i> | | | |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|--|--|--|---|
| TEST METHOD COMPONENT | | | |
| Concentration tested | 20% (w/w) solution or suspension in sterile deionized water, complete MEM, or saline (or other appropriate solvent) | 20% (w/w) solution or suspension in sterile deionized water, complete MEM, or saline (or other appropriate solvent) | 20% solutions or suspensions were prepared in complete MEM |
| Amount tested | 750 µL (test substance and controls) | 750 µL (test substance and controls) | 750 µL |
| Incubation time | 4 hours (±5 minutes) | 4 hours (±5 minutes) | 4 hours |
| Incubation temperature | 32°C (±2°C) water bath | 32°C (±2°C) water bath | Not noted |
| Rinsing procedure | Epithelium is washed 3 or more times with 3 mL of cMEM each time from a syringe or until all particles are removed; fresh cMEM is added to both chambers and final opacity measurement is taken | Epithelium is washed 3 or more times with 3 mL of cMEM each time from a syringe or until all particles are removed; fresh cMEM is added to both chambers and final opacity measurement is taken | Not noted |
| Post-treatment incubation (time, temp.) | | | Not performed |
| Endpoints assessed | | | |
| <i>Corneal opacity</i> | | | |
| Data collected for opacity | Numerical opacity value (arbitrary unit) displayed by opacitometer | Numerical opacity value (arbitrary unit) displayed by opacitometer | Numerical opacity value (arbitrary unit) displayed by opacitometer |
| <i>Permeability</i> | Medium is removed from the anterior chamber, which is refilled with sodium fluorescein solution; amount of dye that reaches posterior chamber is evaluated as an indicator of increased permeability or damage to the cornea | Medium is removed from the anterior chamber, which is refilled with sodium fluorescein solution; amount of dye that reaches posterior chamber is evaluated as an indicator of increased permeability or damage to the cornea | Medium was removed from both chambers of the corneal holder and the posterior chamber was refilled with fresh complete MEM. |
| Amount and concentration of sodium fluorescein solution used | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | 1 mL of a 4 mg/mL fluorescein solution is used for liquids and surfactants; 1 mL of a 5 mg/mL fluorescein solution is used for solids | 0.4% or 0.5% sodium fluorescein solution for liquids or solids, respectively; dye diluted in Dulbecco's phosphate buffered saline (Sigma) |
| Incubation time for fluorescein solution | 90 minutes ±5 minutes; holder is incubated horizontally | 90 minutes ±5 minutes; holder is incubated horizontally | 90 minutes; holder is incubated horizontally |
| Incubation temperature for fluorescein | 32°C (±1°C) | 32°C (±1°C) | Not noted |
| Instrumentation used | Microplate reader | Microplate reader | Cary 1 UV-visible spectrophotometer set at 490 nm |
| Instrument calibrated (y/n) | Yes | Yes | Not noted |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|--|---|---|---|
| TEST METHOD COMPONENT | | | |
| Data collected for permeability | Optical density reading at 490 nm | Optical density reading at 490 nm | Optical density reading at 490 nm |
| Aliquot taken from posterior chamber for OD 490 nm reading | Most of medium is removed from posterior chamber, then mixed in a sample tube. A 360 µL aliquot is taken from the sample tube and transferred to a 96-well plate. Standard plate map provides 2 wells for each cornea in case a dilution is required. | Most of medium is removed from posterior chamber, then mixed in a sample tube. A 360 µL aliquot is taken from the sample tube and transferred to a 96-well plate. Standard plate map provides 2 wells for each cornea in case a dilution is required. | Not noted |
| Other observations | During the final, post-treatment opacity reading, visual observations are performed for each cornea and, if necessary, are recorded. Special attention is taken to observe dissimilar opacity patterns, tissue peeling, or residual test article. | During the final, post-treatment opacity reading, visual observations are performed for each cornea and, if necessary, are recorded. Special attention is taken to observe dissimilar opacity patterns, tissue peeling, or residual test article. | |
| Evaluation of test results | | | |
| <i>Corneal opacity</i> | | | |
| Basal (pretreatment) opacity subtracted from opacity of each treated cornea? | Yes | Yes | Initial opacity of each cornea was subtracted from the chemically induced value |
| Opacity for each treated cornea corrected for average value of negative/solvent controls? | Yes | Yes | Not noted |
| Mean corrected opacity value calculated for each treatment group? | Yes | Yes | Yes |
| <i>Permeability</i> | | | |
| OD value for each treated cornea corrected for average value of negative/solvent controls? | Yes | Yes | Not noted |
| Mean corrected permeability value calculated for each treatment group? | Yes | Yes | Yes |

Table of BCOP Protocols from Reviewed Literature

| REFERENCE | Swanson et al. (1995) | Swanson and Harbell (2000) | Vanparys et al. (1993) |
|---|--|--|--|
| TEST METHOD COMPONENT | | | |
| Formula used to calculate <i>In Vitro</i> Score | <i>In vitro</i> score = mean corrected opacity value + (15 x mean corrected OD ₄₉₀ value) | <i>In vitro</i> score = mean corrected opacity value + (15 x mean corrected OD ₄₉₀ value) | <i>In vitro</i> score = mean opacity value + (15 x mean OD ₄₉₀ value) |
| <i>In vitro</i> classification of ocular irritancy | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate irritant; 55.1 and above = severe irritant. | BCOP score 0 - 25 = mild eye irritant; 25.1 - 55 moderate irritant; 55.1 and above = severe irritant. | BCOP score 0 -3 = nonirritant; 3.1 - 25 = mild eye irritant; 25.1 - 55 moderate; > 55 = severe |
| Criteria for an acceptable test | Test is accepted if positive control gives an <i>in vitro</i> score that falls within 2 SDs of the current historical mean, which is updated every 3 months. | Test is accepted if positive control gives an <i>in vitro</i> score that falls within 2 SDs of the current historical mean, which is updated every 3 months. | Not noted |
| Conducted in compliance with GLPs | Yes | Yes | Not noted |
| Other useful information | | | |

Appendix B

Characterization of the Substances Tested in the BCOP Test Method

| | | |
|-----------|--|-------------|
| B1 | Chemical and Product Classes of Substances Tested in the BCOP Assay | B-3 |
| B2 | Components of Formulations Tested in Gettings et al. (1996) | B-13 |
| B3 | Components of Formulations Tested in Swanson et al. (1995) | B-17 |
| B4 | Components of Formulations Tested in Swanson and Harbell (2000)..... | B-23 |

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Appendix B1

Chemical and Product Classes of Substances Tested in the BCOP Assay

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Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|--|--------------------|--------------------------------|--|
| 1-1 (#1) | - | Formulation | Insect repellent |
| 1-2 (#2) | - | Formulation | Insect repellent |
| 1-3 (#3) | - | Formulation | Insect repellent |
| 2-4 (#4) | - | Formulation | Insect repellent |
| 2-7 (#7) | - | Formulation | Insect repellent |
| 2-8 (#8) | - | Formulation | Insect repellent |
| Acetone | 67-64-1 | Ketone | Solvent; Antiseptic; Chemical intermediate; Raw material |
| Alkyl phosphoric acid ester/amine salt | - | Organic salt, Ester, Amine | Petroleum product |
| All Purpose Cleaner (#5) | - | Formulation | Cleaner |
| All Purpose Cleaner (#7) | - | Formulation | Cleaner |
| Allyl alcohol | 107-18-6 | Alcohol | Pesticide |
| Aluminum hydroxide | 21645-51-2 | Alkali, Aluminum compound | Chemical intermediate, Dessicant |
| 2-Aminophenol | 95-55-6 | | Chemical intermediate |
| Ammonium nitrate | 6484-52-2 | Inorganic salt, Onium compound | Fertilizer; Chemical intermediate; Industrial explosive |
| Amway all fabric bleach | - | Formulation | Detergent |
| Amway automatic dishwashing compound for soft water | - | Formulation | Detergent |
| Amway automatic dishwashing compound, standard formula | - | Formulation | Detergent |
| Amway concrete floor cleaner | - | Formulation | Cleaner |
| Amway Dish Drops dishwashing liquid | - | Formulation | Detergent |
| Amway dry chlorine bleach | - | Formulation | Bleach |
| Amway fabric softener | - | Formulation | Fabric softener |
| Amway Kool Wash delicate fabric detergent | - | Formulation | Detergent |
| Amway LOC all purpose cleaner | - | Formulation | Cleaner |
| Amway prewash liquid | - | Formulation | Detergent |
| Amway Pursue disinfectant cleaner | - | Formulation | Cleaner |
| Amway Redu dye stain remover | - | Formulation | Stain remover |
| Amway SA8 laundry liquid | - | Formulation | Detergent |
| Amway SA8 limited phos laundry powder | - | Formulation | Detergent |
| Anthracene | 120-12-7 | Polycyclic | Dye manufacturing agent |
| Anti-Dandruff Shampoo (HZY) 100% | - | Formulation | Surfactant-containing formulation |

Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|--------------------------------|--------------------|-----------------------------------|--|
| Aromatic hydrocarbon #1 | - | Hydrocarbon (cyclic) | Solvent/industrial chemical; Petrochemical product |
| Aromatic hydrocarbon #2 | - | Hydrocarbon (cyclic) | Solvent/industrial chemical; Petrochemical product |
| Aryl phosphonates | - | Not classified | Lubricant additive; Petrochemical product |
| L-Aspartic acid | 70-47-3 | Amino acid | Organic intermediate; Fungicides; Germicides |
| Baby Shampoo No. 1 (HZP) | - | Formulation | Surfactant-containing formulation |
| Baby Shampoo No. 2 (HZF) | - | Formulation | Surfactant-containing formulation |
| Bathroom Cleaner (#6) | - | Formulation | Cleaner |
| Benchmark-Group 1 (#12) | - | Formulation | Insect repellent |
| Benchmark-Group 2 (#13) | - | Formulation | Insect repellent |
| Benzalkonium chloride (100%) | 8001-54-5 | Onium compound | Surfactant (cationic); Bactericide; Fungicide; Preservative |
| Benzalkonium chloride (1 %) | 8001-54-5 | Inorganic salt, Onium compound | Fertilizer; Chemical intermediate; Industrial explosive |
| Benzalkonium chloride (10%) | 8001-54-5 | Onium compound | Surfactant (cationic); Bactericide; Fungicide; Preservative |
| Benzalkonium chloride (5%) | 8001-54-5 | Onium compound | Surfactant (cationic); Bactericide; Fungicide; Preservative |
| Benzethonium chloride | 121-54-0 | Amine, Onium compound | Bactericide |
| Benzoyl-L-tartaric acid | 2743-38-6 | Carboxylic acid, Ester | Optical resolution agent |
| Betaine monohydrate | 590-47-6 | Amino acid, Onium compound | Not classified |
| BRIJ-35 | 9002-92-0 | Alcohol | Emulsifier |
| 4-Bromophenetole | 589-10-6 | Ether | Not classified |
| Bubble Bath (HZK) 100% | - | Formulation | Surfactant-containing formulation |
| n-Butanol | 71-36-3 | Ketone | Solvent; Synthetic flavor; Drycleaning |
| 2-Butoxyethanol | 111-76-2 | Alcohol | Solvent |
| Butyl acetate | 123-86-4 | Ester | Solvent; Synthetic flavor ingredient |
| Butyl cellosolve | 111-76-2 | Alcohol, Ester | Solvent |
| Butyrolactone | 96-48-0 | Lactone, Heterocycle | Synthetic intermediate; Solvent |
| gamma-Butyrolactone | 96-48-0 | Heterocyclic, Lactone | Synthetic intermediate; Solvent |
| Captan 90 concentrate | 133-06-2 | Imide, Organic sulfur compound | Pesticide |
| 4-Carboxybenzaldehyde | 619-66-9 | Carboxylic acid, Aldehyde | Not classified |
| Carboxylic acid amides | - | Formulation | Lubricant additive; Petrochemical product |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | Heterocyclic, Onium compound | Surfactant (cationic); Germicide; Laboratory reagent |
| Cetylpyridinium bromide (1%) | 140-72-7 | Surfactant, cationic | Germicide; Laboratory reagent |

Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|--------------------------------------|--------------------|----------------------------------|--|
| Cetylpyridinium bromide (10%) | 140-72-7 | Heterocyclic, Onium compound | Surfactant (cationic); Germicide; Laboratory reagent |
| Cetylpyridinium bromide (6%) | 140-72-7 | Heterocyclic, Onium compound | Surfactant (cationic); Germicide; Laboratory reagent |
| Chlorhexidine | 55-56-1 | Amine/Amidine | Disinfectant; Mouthwash; Anti-infective agent |
| 2-Chloro-2,4,4-trimethylpentane | - | Hydrocarbon (halogenated) | Solvent/industrial chemical; Petrochemical product |
| Clarified slurry oil | - | Hydrocarbon (cyclic) | Petrochemical product |
| Cleaner/Degreaser (#13) | - | Formulation | Cleaner |
| Cleansing Gel (HZQ) 100% | - | Formulation | Surfactant-containing formulation |
| Cutting fluid (conc.) #1 | - | Formulation | Cutting fluid; Petrochemical product |
| Cutting fluid (conc.) #2 | - | Formulation | Cutting fluid; Petrochemical product |
| Cyclohexanol | 108-93-0 | Alcohol | Solvent; Chemical intermediate |
| Cyclohexanone | 108-94-1 | Ketone, Hydrocarbon (cyclic) | Solvent, Chemical intermediate |
| Degreaser (#16) | - | Formulation | Degreaser |
| Deoxycholic acid, sodium salt | 302-95-4 | Alcohol, Carboxylic acid (salt) | Detergent/Surfactant, Chemical intermediate |
| Diacetone alcohol | 123-42-2 | Ketone, Alcohol | Solvent |
| Dibenzyl phosphate | 1623-08-1 | Ester, Organophosphorus compound | Not classified |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | Acyl halide | Anti-infective; Anti-fungal; Preservative |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | Amide, Organic sulfur compound | Intermediate for pharmaceuticals, pesticides, perfumes |
| 2,4-Difluoronitrobenzene | 446-35-5 | Acyl halide | Anti-infective; Anti-fungal; Preservative |
| 1,3-Diisopropylbenzene | 99-62-7 | Hydrocarbon (cyclic) | Not classified |
| Dimethylbiguanide | 657-24-9 | Amidine | Pharmaceutical |
| 2,2-Dimethylbutanoic acid | 595-37-9 | Carboxylic acid | Pharmaceutical metabolite |
| 2,5-Dimethylhexanediol | 110-03-2 | Alcohol | Intermediate for pharmaceuticals, pesticides, perfumes |
| Dimethyl sulfoxide | 67-68-5 | Organic sulfur compound | Solvent |
| Dodecane | 112-40-3 | Hydrocarbon (acyclic) | Not classified |
| EDTA, di-potassium salt | 25102-12-9 | Amine, Carboxylic acid (salt) | Chelator |
| Ethanol | 64-17-5 | Alcohol | Solvent; Beverages; Antifreeze agent |
| Ethanol (#14) | 64-17-5 | Alcohol | Solvent |
| 2-Ethoxyethanol | 110-80-5 | Alcohol | Solvent |
| Ethyl acetate | 141-78-6 | Ester | Solvent; Synthetic flavoring |
| Ethyl acetoacetate | 141-97-9 | Carboxylic acid, Ketone | Chemical intermediate, Flavoring agent |
| 2-Ethylhexanol | 104-76-7 | Alcohol | Intermediate for pharmaceuticals, pesticides, perfumes |
| 2-Ethyl-1-hexanol | 104-76-7 | Alcohol | Solvent; Plasticizer |

Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|------------------------------------|--------------------|--|---|
| Ethylhexyl acid phosphate ester | - | Ester, Carboxylic acid | Lubricant additive; Petrochemical product |
| 5-Ethylidene-2-norbornene | 16219-75-3 | Not classified | Solvent/industrial chemical; Petrochemical product |
| Ethyl-2-methylacetoacetate | 609-14-3 | Ketone, Ester | Not classified |
| 3-Ethyltoluene | 620-14-4 | Hydrocarbon (cyclic) | Not classified |
| Ethyl trimethyl acetate | 3938-95-2 | Ester | Solvent |
| Eye Make-Up Remover (HZH) 100% | - | Formulation | Surfactant-containing formulation |
| Facial Cleaning Foam (HZR) 25% | - | Formulation | Surfactant-containing formulation |
| Facial Cleanser (HZZ) 100% | - | Formulation | Surfactant-containing formulation |
| Floor Cleaner (#10) | - | Formulation | Cleaner |
| Floor Cleaner (#2) | - | Formulation | Cleaner |
| Floor Stripper (#14) | - | Formulation | Floor stripper |
| Floor Stripper (#17) | - | Formulation | Floor stripper |
| Floor Stripper (#18) | - | Formulation | Floor stripper |
| Foam Bath (HZZ) 100% | - | Formulation | Surfactant-containing formulation |
| Fomesafen | 72128-02-0 | Imide, Ether, Nitro compound | Pesticide |
| Furan | 110-00-9 | Heterocyclic | Chemical intermediate |
| Gel Cleanser (HZE) 100% | - | Formulation | Surfactant-containing formulation |
| General Cleaner (#11) | - | Formulation | Cleaner |
| General Cleaner (#12) | - | Formulation | Cleaner |
| Glass Cleaner (#19) | - | Formulation | Cleaner |
| Gluconolactone | 90-80-2 | Carboxylic acid, Lactone, Carbohydrate | Food additive |
| DL-Glutamic acid | 19285-83-7 | Amino acid | Not classified |
| Glycerol | 56-81-5 | Alcohol | Solvent; Plasticizer; Lubricant; Emollient; Drug vehicle |
| 3-Glycidoxypolytrimethoxysilane | 2530-83-8 | Organosilicon compound | Adhesive |
| Hand Soap (HZU) 25% | - | Formulation | Surfactant-containing formulation |
| Heavy Duty Cleaner (#15) | - | Formulation | Cleaner |
| Heavy Duty Cleaner/Degreaser (#9) | - | Formulation | Cleaner |
| Hexadecyltrimethylammonium bromide | 57-09-0 | Organic salt, Onium compound | Agricultural chemical; Germicide; Drug/Therapeutic agent |
| 1,5-Hexadiene | 592-42-7 | Hydrocarbon (acyclic) | Not classified |
| Hexane | 110-54-3 | Hydrocarbon (acyclic) | Solvent |
| n-Hexanol | 111-27-3 | Alcohol | Solvent; Chemical intermediate; Synthetic flavor ingredient |
| Imidazole | 288-32-4 | Heterocyclic | Anti-fungal; Enzyme inhibitor |
| Iminodibenzyl | 494-19-9 | Heterocyclic | Personal care product |

Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|------------------------------------|--------------------|--|---|
| Isobutanol | 78-83-1 | Alcohol | Solvent; Chemical intermediate; Flavor ingredient |
| Isopropanol | 67-63-0 | Alcohol | Solvent; Aerosol formulations (ingredient) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | Amide, Amino acid (salt) | Surfactant (anionic) |
| Laurylsulfobetaine | 14933-08-5 | Amine, Onium compound | Detergent, Surfactant (zwitterionic) |
| Liquid Soap No. 2 (HZW) 25% | - | Formulation | Surfactant-containing formulation |
| Liquid Soap No. 1 (HZB) 25% | - | Formulation | Surfactant-containing formulation |
| Magnesium carbonate | 56378-72-4 | Inorganic salt | Chemical intermediate |
| Maneb | 12427-38-2 | Amine/Amidine, Organic salt, Urea compound | Pesticide |
| Meat Room Degreaser (#3) | - | Formulation | Degreaser |
| 2-Mercaptopyrimidine | 1450-85-7 | Acyl halide | Anti-infective; Anti-fungal; Preservative |
| Metal Cleaner (#20) | - | Formulation | Cleaner |
| Methanol | 67-56-1 | Alcohol | Solvent |
| 2-Methoxyethanol | 109-86-4 | Alcohol | Solvent; Plasticizer |
| Methyl acetate | 79-20-9 | Ester | Solvent; Chemical intermediate; Synthetic flavor ingredient |
| Methyl cyanoacetate | 105-34-0 | Ester, Nitrile compound | Adhesive; Pharmaceutical intermediate |
| Methyl cyclopentadiene dimer | - | Cyclic hydrocarbon | Solvent/industrial chemical; Petrochemical product |
| Methylcyclopentane | 96-37-7 | Ketone | Solvent; Manufacture of lacquers, varnishes, cosmetics, pharmaceuticals |
| Methyl ethyl ketone | 78-93-3 | Ketone | Solvent; Manufacture of lacquers, varnishes, cosmetics, pharmaceuticals |
| Methyl isobutyl ketone | 108-10-1 | Ketone | Solvent; Synthetic flavor; Drycleaning |
| 1-Methylpropyl benzene | 135-98-8 | Hydrocarbon (cyclic) | Not classified |
| Mild Shampoo (HZJ) 25% | - | Ketone | Solvent; Synthetic flavor; Drycleaning |
| MYRJ-45 | - | Ketone | Solvent; Manufacture of lacquers, varnishes, cosmetics, pharmaceuticals |
| 1-Naphthalene acetic acid | 86-87-3 | Carboxylic acid, Polycyclic compound | Pesticide |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | Carboxylic acid (salt), Polycyclic compound | Pesticide |
| 1-Nitropropane | 108-03-2 | Hydrocarbon (acyclic), Nitro compound | Solvent, Chemical intermediate |
| n-Octanol | 111-87-5 | Alcohol | Solvent; Fragrance |
| Parafluoriline | 371-40-4 | Amine/Amidine | Intermediate for herbicides; Dyes |
| 2,4-Pentanedione | 123-54-6 | Ketone | Solvent; Plasticizer |
| Petroleum ether | 8032-32-4 | Hydrocarbon (acyclic) | Solvent |
| Petroleum wax | - | Wax | Petrochemical product |

Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|---------------------------------------|--------------------|--|---|
| Phenylbutazone | 50-33-9 | Heterocyclic | Pharmaceutical |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | Heterocyclic | Photographic agent |
| Polishing Scrub (HZT) 100% | - | Formulation | Surfactant-containing formulation |
| Polyalkenylsuccinate ester/amine salt | - | Amidine | Lubricant additive; Petrochemical product |
| Polyethylene glycol 400 | 25322-68-3 | Alcohol, Polyether | Surfactant (nonionic), Lubricant, Plasticizer, Solvent |
| Polyethylene glycol 600 | - | Alcohol, Polyether | Surfactant (nonionic) |
| Pot and Pan Cleaner (#8) | - | Formulation | Cleaner |
| Potassium cyanate | 590-28-3 | Inorganic salt | Herbicide; Pharmaceutical intermediate |
| Process oil | - | Oil | Petrochemical product |
| Promethazine hydrochloride | 58-33-3 | Amine/Amidine, Heterocyclic, Organic sulfur compound | Antihistamine; Anti-nausea drug |
| Propylene glycol | 57-55-6 | Alcohol | Solvent |
| Propyl-4-hydroxybenzoate | 94-13-3 | Carboxylic acid, Phenol | Antimicrobial |
| Pyridine | 110-86-1 | Heterocyclic | Solvent; Intermediate for pharmaceuticals, dyes, pesticides |
| Quinacrine | 69-05-6 | Heterocyclic | Drug/Therapeutic agent |
| Shampoo No. 1 (HZC) 25% | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 2 (HZX) | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 3 (HZM) 25% | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 4 (HZV) 25% | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 5 (HZD) 25% | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 6 (HZN) 25% | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 7 (HZA) | - | Formulation | Surfactant-containing formulation |
| Shampoo No. 8 (HZG) 25% | - | Formulation | Surfactant-containing formulation |
| Shower Gel (HZS) 100% | - | Formulation | Surfactant-containing formulation |
| Skin Cleanser (HZI) 100% | - | Formulation | Surfactant-containing formulation |
| Sodium hydroxide (1%) | 1310-73-2 | Alkali | Caustic agent |
| Sodium hydroxide (10%) | 1310-73-2 | Alkali | Caustic agent |
| Sodium lauryl sulfate (15 %) | 151-21-3 | Carboxylic acid (salt) | Surfactant (anionic); Detergent |
| Sodium lauryl sulfate (3 %) | 151-21-3 | Carboxylic acid (salt) | Surfactant (anionic); Detergent |
| Sodium lauryl sulfate (30 %) | 151-21-3 | Carboxylic acid (salt) | Surfactant (anionic); Detergent |
| Sodium oxalate | 62-76-0 | Carboxylic acid (salt) | Textile finishing; Pyrotechnic, Industrial byproduct |
| Sodium perborate | 10486-00-7 | Inorganic salt, Boron compound | Household cleaner; Detergent |

Chemical and Product Classes of Substances Tested in the BCOP Assay

| Substance | CASRN ¹ | Chemical Class | Product Class |
|------------------------------|--------------------|---------------------------------------|---|
| Tetraaminopyrimidine sulfate | 5392-28-9 | Amine, Heterocycle, Inorganic salt | Not classified |
| Thiadiazole alkyl derivative | - | | Lubricant additive; Petrochemical product |
| Thiourea | 62-56-6 | Organic sulfur compound | Photographic agent; Flame-retardant; Chelation reagent and catalyst; Chemical intermediate; Pesticide; Drug/Therapeutic agent |
| Toilet Bowl Cleaner (#1) | - | Formulation | Cleaner |
| Toilet Bowl Cleaner (#4) | - | Formulation | Cleaner |
| Toluene | 108-88-3 | Hydrocarbon (cyclic) | Solvent |
| Trichloroacetic acid (3%) | 76-03-9 | Carboxylic acid | Caustic agent; Fixative; Herbicide |
| Trichloroacetic acid (30%) | 76-03-9 | Carboxylic acid | Caustic agent; Fixative; Herbicide |
| 1,2,3-Trichloropropane | 96-18-4 | Hydrocarbon (halogenated) | Solvent |
| Triethanolamine | 102-71-6 | Amine, Alcohol | Antimicrobial, Chemical intermediate |
| 1,2,4-Trimethylbenzene | 95-63-6 | Hydrocarbon (cyclic) | Chemical intermediate |
| Triton X-100 (1%) | 9002-93-1 | Ether | Surfactant (nonionic) |
| Triton X-100 (10 %) | 9002-93-1 | Ether | Surfactant (nonionic), Detergent, Emulsifier |
| Triton X-100 (5%) | 9002-93-1 | Ether | Surfactant (nonionic) |
| Triton X-155 | 9010-44-0 | Ether | Surfactant (nonionic) |
| Tween 20 | 9005-64-5 | Ester, Polyether | Surfactant (nonionic); Detergent |
| Xylene | 1330-20-7 | Hydrocarbon (cyclic) | Agricultural chemical |

¹CASRN = Chemical Abstracts Service Registry Number

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Appendix B2

Components of Formulations Tested in Gettings et al. (1996)

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Components of Formulations Tested in Gettings et al. (1996)

| Formulation | Formulation Components | % (W/W) | Formulation | Formulation Components | % (W/W) |
|------------------------|---|--|---------------------------|--|---------|
| HZA-Shampoo No. 7 | Water | 53.86 | HZN-Shampoo No. 6 | Water | 44.381 |
| | Sodium lauryl sulfate (30%) | 25.00 | | Sodium laureth (2EO) sulfate (28%) | 43.634 |
| | Disodium laureth sulfocuccinate (40%) | 15.00 | | Cocamidopropyl betaine (30%) | 11.760 |
| | Lauramide DEA | 0.50 | | Tetrasodium EDTA | 0.125 |
| | Butylene glycol | 5.00 | | Formalin | 0.100 |
| | Methyl and propylparabens | 0.25 | | | |
| | Carageenan | 0.35 | | | |
| | Methyl and methylchloroisothiazolinone | 0.04 | | | |
| HZB-Liquid Soap No. 1 | Water and volatiles | 65-85 | HZP-Baby Shampoo No. 1 | Water | 49.54 |
| | Ammonium lauryl sulfate | 1-10 | | PEG-80 sorbitan laurate (50%) | 23.60 |
| | Sodium laureth sulfate | 1-10 | | Sodium trideceth sulfate (50%) | 17.40 |
| | Lauramide DEA | 1-10 | | Lauroamphocarboxyglycinate (50%) | 5.40 |
| | Glycerine | 1-10 | | PEG-150 distearate (50%) | 5.00 |
| | Isosteamidopropyl morpholine lactate | 0.1-1.0 | | Cocamidodrolyl hydroxysultane (50%) | 4.00 |
| | Disodium ricinoleamido MEA-sulfosuccinate | 0.1-1.0 | | Sodium laureth-13 carboxylate (50%) | 1.00 |
| | DMDM hydantoin | 0.1-1.0 | | Quaternium 15 | 0.03 |
| | Citric acid | 0.1-1.0 | | Benzyl alcohol | 0.05 |
| | Triclosan | 0.1-1.0 | | FD&C Yellow No. 5 (1.0%) | 0.25 |
| | Tetrasodium EDTA | <0.1 | | FD&C Yellow No. 6 (1.0%) | 0.05 |
| | FD&C Yellow No. 5 | <0.1 | | Citric acid | 0.08 |
| | FD&C Red No. 4 | <0.1 | | | |
| HZE-Shampoo No. 1 | Water | 14.037 | HZQ-Cleansing Gel | Water | 68.93 |
| | Lauramidopropyl betaine (30%) | 60.000 | | Lauroamphocarboxyglycinate (25%) | 10.40 |
| | Cetrimonium chloride | 16.000 | | Sodium trideceth sulfate (16%) | 10.60 |
| | PEG-3 cocamide | 4.500 | | TEA-lauryl sulfate (40%) | 3.50 |
| | Citric acid | 3.500 | | Lauramide DEA | 0.50 |
| | Sodium chloride | 1.000 | | PEG-150 distearate | 2.80 |
| | Ditallowdimonium chloride (73%) | 0.700 | | Propylene glycol | 1.40 |
| | Lauryl alcohol | 0.250 | | Hexylene glycol | 1.05 |
| | Methyl and chlorisothiazolinone (1.5%) | 0.033 | | Citric acid | 0.28 |
| | | | | Diazolidinyl urea | 0.20 |
| | | Methylparaben | 0.20 | | |
| | | Sodium citrate | 0.14 | | |
| HZD-Shampoo No. 5 | Water | 54.120 | HZR-Facial Cleansing Foam | Water | 32.97 |
| | Sodium laureth sulfate (26%) | 38.00 | | Sodium cocoyl isethionate | 20.00 |
| | Cocamide DEA | 3.000 | | Sodium lauroyl sarcosinate (30%) | 25.00 |
| | Cocamide propyl betaine (37%) | 1.750 | | PPG-5-ceteth-10 phosphate | 4.00 |
| | Disodium EDTA | 0.050 | | Linoleamide DEA | 2.00 |
| | Methylparaben | 0.150 | | Sorbitol (70%) | 2.75 |
| | Propylparaben | 0.100 | | Glycol stearate | 5.50 |
| | Citric acid | 0.250 | | Glycerin | 2.00 |
| | FD&C Yellow No. 5 (1%) | 0.050 | | Diglycerol | 2.00 |
| | D&C Red No. 33 (0.5%) | 0.015 | | Cetearyl alcohol | 2.75 |
| | DMDM hydantoin (54%) | 0.300 | | Mineral oil | 0.50 |
| | BHT | 0.050 | | Methylparaben | 0.15 |
| | Sodium glutamate | 2.000 | | Propylparaben | 0.10 |
| Sodium chloride | 0.170 | Trisodium EDTA | 0.10 | | |
| | | Beeswax | 0.10 | | |
| | | Ceresin | 0.06 | | |
| | | Sodium borate | 0.02 | | |
| HZE-Gel Cleanser | Water | 59.974 | HZZ-Shower Gel | Water | 27.567 |
| | Acylglutamate CT-12 (30%) | 15.000 | | Sodium lauroyl sarcosinate (30%) | 25.000 |
| | Cocamphodiacetate (50%) | 15.000 | | Laurimidopropyl betaine (30%) | 25.000 |
| | Sodium nonoxynol-6 phosphate (88.5%) | 6.000 | | Cocamidopropyl hydroxysultaine (50%) | 15.000 |
| | Quaternium-26 (58%) | 1.500 | | Linoleamide DEA | 4.500 |
| | PEG-120-methyl glucose diolate | 1.500 | | Glycol stearate | 1.000 |
| | Citric acid | 0.100 | | Polyquaternium-2 | 1.000 |
| | Sodium citrate | 0.500 | | Phosphoric acid (86.5%) | 0.600 |
| | Disodium EDTA | 0.050 | | Tetrasodium EDTA | 0.200 |
| | Methylparaben | 0.150 | | BHT | 0.050 |
| | DMDM hydantoin (55%) | 0.200 | | PPG-12-buteth-16 | 0.050 |
| | FD&C Yellow No. 10 (1%) | 0.001 | | Methyl and chlorisothiazolinone (1.5%) | 0.033 |
| | D&C Blue No. 1 (0.746%) | 0.025 | | | |
| HZF-Baby Shampoo No. 2 | Water | 57.653 | HZZ-Polishing Scrub | Water | 33.85 |
| | Sodium laureth (2EO) sulfate (28%) | 21.430 | | Mineral oil | 10.00 |
| | Disodium laureth-3-sulfosuccinate (40%) | 9.090 | | Lauroamphocarboxyglycinate (25%) | 8.80 |
| | Cocamidopropyl betaine (30%) | 10.000 | | Sodium trideceth sulfate (16%) | 9.40 |
| | Lauramide DEA | 1.500 | | Petrolatum | 6.60 |
| | Kathon CG (1.5%) | 0.067 | | Isopropyl palmitate | 6.60 |
| | Tetrasodium EDTA (30%) | 0.260 | | Propylene glycol | 5.00 |
| | | | | Cetyl palmitate | 4.40 |
| | | Glyceryl stearate and PEG-100 stearate | 4.40 | | |
| | | Aluminum silicate | 3.00 | | |
| | | Cetyl alcohol | 2.50 | | |
| | | Polypropylene | 2.50 | | |
| | | Magnesium aluminum silicate | 1.00 | | |
| | | Titanium dioxide | 0.50 | | |
| | | Hexylene glycol | 0.40 | | |
| | | Imidazolidinyl urea | 0.30 | | |
| | | Methylparaben | 0.30 | | |
| | | Lactic acid | 0.25 | | |
| | | Propylparaben | 0.20 | | |

Components of Formulations Tested in Gettings et al. (1996)

| Formulation | Formulation Components | % (W/W) | Formulation | Formulation Components | % (W/W) |
|--------------------------------|---|-----------------|----------------------------------|---|---------|
| HZG-Shampoo No. 8 | Water | 48.43 | HZU-Hand Soap | Water | 37.95 |
| | Sodium laureth sulfate (28%) | 20.00 | | Sodium C14-16 olefin sulfonate (36%) | 20.25 |
| | Sodium lauryl sulfate (30%) | 25.00 | | Sodium lauroyl sarcosinate | 20.00 |
| | Lauramide-DEA | 5.00 | | Cocamidopropyl hydroxysulfaine | 8.00 |
| | Hydroxyethyl tallow glycinate | 1.00 | | Propylene glycol | 3.00 |
| | Citric acid | 0.20 | | Glycerol stearate | 3.00 |
| | PEG-45M | 0.20 | | PPG-12-PEG-50 lanolin | 3.00 |
| | Methyl and propylparabens | 0.13 | | Polyquaternium-7 | 2.00 |
| | Methyl and chloromethyl-isothiazolinone | 0.04 | | Citric acid | 1.00 |
| HZH-Eye Make-Up Remover | Water | 96.242 | HZV-Shampoo No. 4 | Water | 80-90 |
| | Sodium laureth sulfate (21%) | 0.900 | | Ammonium lauryl sulfate | 5-10 |
| | Cocamphocarboxyglycinate (40%) | 1.100 | | Lauramide DEA | 1-5 |
| | Hexylene glycol | 1.000 | | Cocamidopropyl sulfaine | <1.0 |
| | Dipotassium phosphate | 0.394 | | Ammonium chloride USP | <1.0 |
| | Potassium phosphate | 0.102 | | Citric acid | <1.0 |
| | Allantoin | 0.050 | | DMDM hydantoin | <1.0 |
| | Methyl paraben | 0.150 | | Tetrasodium EDTA | <1.0 |
| | EDTA | 0.150 | | Methylparaben | <1.0 |
| | Rose water | 0.008 | | FD&C Yellow No. 5 | <1.0 |
| | Thimerosal | 0.003 | | D&C Yellow No. 10 | <1.0 |
| HZI-Skin Cleanser | Water | 44.0 | HZW-Liquid Soap No. 2 | Water and volatiles | 60-80 |
| | Sodium laureth sulfate (30%) | 50.0 | | TEA-lauryl sulfate | 1-10 |
| | Cocamide MEA | 5.0 | | Sodium laureth sulfate | 1-10 |
| | Sodium chloride | 0.4 | | Sodium lauroyl sarcosinate | 1-10 |
| | Disodium EDTA | 0.2 | | Lauramide DEA | 1-10 |
| | Imidazolidinyl urea | 0.2 | | Glycol distearate | 1-10 |
| | Methylparaben | 0.2 | | Isostearamideopropyl morpholine lactate | 0.1-1.0 |
| | Benzoic acid | 0.1 | | Disodium ricinoleamide MEA-sulfosuccinate | 0.1-1.0 |
| HZJ-Mild Shampoo | Water | 52.09 | HZX-Shampoo No. 2 | Water | 69.1895 |
| | Tween 20 | 12.63 | | Ammonium lauryl sulfate (25%) | 25.0000 |
| | Cocamphodiacetate (24%) | 21.25 | | Cocamide DEA | 3.0000 |
| | PEG 6000 | 2.60 | | Hydroxypropyl methylcellulose | 1.4500 |
| | Cedepal TD403 (75%) | 6.53 | | EDTA | 0.6000 |
| | Hydrochloric acid (15%) | 1.68 | | Formaldehyde | 0.2000 |
| | Arlacel 20 | 0.92 | | Benzyl alcohol | 0.2000 |
| | Benzyl alcohol | 0.10 | | Benzophenone-4 sodium hydroxide | 0.0400 |
| | Dowicel 200 | 0.10 | | Citric acid | 0.0100 |
| | D&C Yellow No. 10 (0.2%) | 1.70 | | Ammonium chloride | 0.0100 |
| D&C Orange No. 4 (0.2%) | 0.20 | FD&C Blue No. 1 | 0.0005 | | |
| HZK-Bubble Bath | Water | 68.75 | HZY-Anti-Dandruff Shampoo | Water | 27.13 |
| | Sodium laureth sulfate (60%) | 25.00 | | Sodium lauroyl sarcosinate (30%) | 15.00 |
| | Lauramide DEA | 4.50 | | Lauramide DEA | 4.50 |
| | SD Alcohol 3-A | 3.75 | | TEA-lauryl sulfate (40%) | 45.00 |
| | Sodium chloride | 0.80 | | Glycol distearate | 3.00 |
| | Triethanolamine | 0.40 | | Zinc pyrithione | 2.10 |
| | Phosphoric acid (86.5%) | 0.35 | | Sodium chloride | 1.20 |
| | Sorbic acid | 0.20 | | Citric acid | 0.90 |
| | | | | Imidazolidinyl urea | 0.50 |
| HZL-Foam Bath | Water | 47.760 | HZZ-Facial Cleanser | Water | 32.55 |
| | Sodium laureth sulfate (26%) | 46.000 | | Mineral oil | 40.00 |
| | Cocamido propyl betaine (30%) | 2.500 | | Beeswax | 2.30 |
| | Sodium chloride | 2.400 | | PEG-16 soya sterol | 5.00 |
| | Glycol monostearate | 0.400 | | PEG-8 dilaurate | 2.00 |
| | Color solution | 0.300 | | Cetaryl alcohol (70%) | 0.80 |
| | DMDM hydantoin (54%) | 0.250 | | Ceteareth 20 (30%) | 0.80 |
| | Methylparaben | 0.200 | | Beheme acid | 0.80 |
| | Propylparaben | 0.100 | | Sodium borate | 0.75 |
| | BHT | 0.050 | | Ceresin | 0.50 |
| | Aloe vera gel | 0.015 | | Carbopol dispersion (25%) | 15.00 |
| | Citric acid | 0.016 | | Methylparaben | 0.15 |
| | Tetrasodium EDTA | 0.010 | | Propylparaben | 0.10 |
| | | Disodium EDTA | 0.05 | | |
| HZM-Shampoo No. 3 | Water | 80-90 | | | |
| | Ammonium lauryl sulfate | 5-10 | | | |
| | Lauramide DEA | 1-5 | | | |
| | Cocamidopropyl sulfaine | 1-5 | | | |
| | Citric acid | <1.0 | | | |
| | Ammonium chloride | <1.0 | | | |
| | DMDM Hydantoin | <1.0 | | | |
| | Tetrasodium EDTA | <1.0 | | | |
| | Methylparaben | <1.0 | | | |
| | FD&C Yellow No. 5 | <0.1 | | | |
| | D&C Yellow No. 10 | <0.1 | | | |
| | FD&C Red No. 4 | <0.1 | | | |
| | PPG-9 | | | | |

Appendix B3

Components of Formulations Tested in Swanson et al. (1995)

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Components of Formulations Tested in Swanson et al. (1995)

| Code | Formulation | Formulation Components | Percentage | pH |
|------|---------------------|------------------------|------------|-------|
| 1 | Toilet Bowl Cleaner | Water | 90-95 | 8.8 |
| | | Nonionic Surfactant | 1-5 | |
| | | Anionic Surfactant | 1-5 | |
| | | Preservative | < 1 | |
| | | Thickener | < 1 | |
| | | Dye | < 1 | |
| | | Fragrance | < 1 | |
| | | Phosphate | < 1 | |
| 2 | Floor Cleaner | Water | 90-95 | 10.8 |
| | | Anionic Surfactant | 1-5 | |
| | | Nonionic Surfactant | 1-5 | |
| | | MEA | < 1 | |
| | | Fragrance | < 1 | |
| | | Dye | < 1 | |
| 3 | Meat Room Degreaser | Water | 80-85 | 12.65 |
| | | Anionic surfactant | 1-5 | |
| | | Nonionic surfactant | 1-5 | |
| | | Chelator | 1-5 | |
| | | Glycol ether | 1-5 | |
| | | Inorganic salt | 1-5 | |
| | | KOH | < 1 | |
| 4 | Toilet Bowl Cleaner | Water | 90-95 | 2.5 |
| | | Organic acid | 1-5 | |
| | | Anionic surfactant | 1-5 | |
| | | Thickener | < 1 | |
| | | Dye | < 1 | |
| | | Fragrance | < 1 | |
| 5 | All Purpose Cleaner | Water | 90-95 | 13 |
| | | Nonionic surfactant | 1-5 | |
| | | Inorganic salt | 1-5 | |
| | | NaOH | 1-5 | |
| | | Chelator | < 1 | |
| | | KOH | < 1 | |
| | | Anionic surfactant | < 1 | |
| | | Fragrance | < 1 | |
| | | Dye | < 1 | |
| 6 | Bathroom Cleaner | Water | 80-85 | 13 |
| | | Chelator | 10-15 | |
| | | Glycol ether | 1-5 | |
| | | Nonionic surfactant | 1-5 | |
| | | Quaternary compound | < 1 | |

Components of Formulations Tested in Swanson et al. (1995)

| Code | Formulation | Formulation Components | Percentage | pH |
|------|------------------------------|------------------------|------------|------|
| 7 | All Purpose Cleaner | Water | 80-85 | 14 |
| | | Inorganic salt | 5-10 | |
| | | NaOH | 1-5 | |
| | | Nonionic surfactant | 1-5 | |
| | | Anionic surfactant | 1-5 | |
| | | KOH | < 1 | |
| | | Chelator | < 1 | |
| | | Amphoteric surfactant | < 1 | |
| | | Fragrance | < 1 | |
| | | Dye | < 1 | |
| 8 | Pot and pan cleaner | Water | 60-65 | 7.8 |
| | | Anionic surfactant | 25-30 | |
| | | Nonionic surfactant | 5-10 | |
| | | Glycol ether | 1-5 | |
| | | Preservative | < 1 | |
| | | Dye | < 1 | |
| 9 | Heavy-duty cleaner/degreaser | Water | 75-80 | 13.6 |
| | | Inorganic salts | 10-15 | |
| | | Chelator | 1-5 | |
| | | NaOH | 1-5 | |
| | | Nonionic surfactant | 1-5 | |
| | | Amphoteric surfactant | 1-5 | |
| | | Dye | < 1 | |
| 10 | Floor cleaner | Water | 85-90 | 11.7 |
| | | MEA | 1-5 | |
| | | Anionic surfactant | 1-5 | |
| | | Glycol ether | 1-5 | |
| | | Ammonium hydroxide | 1-5 | |
| | | Nonionic surfactant | < 1 | |
| | | Chelator | < 1 | |
| | | Fragrance | < 1 | |
| | | Dye | < 1 | |
| 11 | General Cleaner | Water | 70-75 | 1 |
| | | Inorganic acid | 15-20 | |
| | | Nonionic surfactant | 1-5 | |
| | | Amphoteric surfactant | < 1 | |
| | | Fragrance | < 1 | |
| | | Dye | < 1 | |

Components of Formulations Tested in Swanson et al. (1995)

| Code | Formulation | Formulation Components | Percentage | pH |
|------|--------------------|------------------------|------------|------|
| 12 | General Cleaner | Water | 75-80 | 14 |
| | | Anionic surfactant | 10-15 | |
| | | Nonionic surfactant | 5-10 | |
| | | Chelator | 1-5 | |
| | | Inorganic salt | 1-5 | |
| 13 | Cleaner/Degreaser | Water | 65-70 | 12 |
| | | Glycol ether | 10-15 | |
| | | Anionic surfactant | 1-5 | |
| | | Inorganic salt | 1-5 | |
| | | Chelator | 1-5 | |
| | | Nonionic surfactant | 5-10 | |
| | | NaOH | 1-5 | |
| Dye | < 1 | | | |
| 14 | Floor stripper | Water | 50-55 | 11.5 |
| | | Glycol ether | 30-35 | |
| | | MEA | 10-15 | |
| | | Organic solvent | 1-5 | |
| | | Ammonium hydroxide | 1-5 | |
| | | Anionic surfactant | 1-5 | |
| 15 | Heavy Duty cleaner | Water | 65-70 | 13.5 |
| | | Inorganic salts | 10-15 | |
| | | Anionic surfactant | 5-10 | |
| | | Chelator | 1-5 | |
| | | NaOH | 1-5 | |
| | | Nonionic surfactant | 1-5 | |
| | | Amphoteric surfactant | 1-5 | |
| 16 | Degreaser | Water | 65-70 | 12.9 |
| | | Anionic surfactant | 5-10 | |
| | | Chelator | 5-10 | |
| | | Nonionic surfactant | 5-10 | |
| | | KOH | 1-5 | |
| | | Inorganic salt | 1-5 | |
| | | Glycol ether | 1-5 | |

Components of Formulations Tested in Swanson et al. (1995)

| Code | Formulation | Formulation Components | Percentage | pH |
|-------------|--------------------|-------------------------------|-------------------|-----------|
| 17 | Floor stripper | Water | 60-65 | 13.1 |
| | | Glycol ether | 10-15 | |
| | | Anionic surfactant | 10-15 | |
| | | MEA | 5-10 | |
| | | Organic solvent | 1-5 | |
| | | Inorganic salt | 1-5 | |
| | | NaOH | 1-5 | |
| | | Chelator | < 1 | |
| | | Flurochemical | < 1 | |
| | | Fragrance | < 1 | |
| 18 | Floor stripper | Water | 55-60 | 14 |
| | | Glycol ether | 10-15 | |
| | | Inorganic salt | 5-10 | |
| | | Amphoteric surfactant | 5-10 | |
| | | MEA | 1-5 | |
| | | NaOH | 1-5 | |
| | | Chelator | 1-5 | |
| | | Nonionic surfactants | < 1 | |
| | | Fragrance | < 1 | |
| 19 | Glass cleaner | Water | 65-70 | 12.1 |
| | | Glycol ether | 20-25 | |
| | | Ammonium hydroxide | 1-5 | |
| | | Anionic surfactant | 1-5 | |
| | | Chelator | 1-5 | |
| | | Dye | < 1 | |
| 20 | Metal cleaner | Water | 65-70 | 14 |
| | | Chelator | 5-10 | |
| | | NaOH | 5-10 | |
| | | Nonionic surfactant | 5-10 | |
| | | KOH | < 1 | |

Appendix B4

Components of Formulations Tested in Swanson and Harbell (2000)

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Components of Formulations Tested in Swanson and Harbell (2000)

| Substance | Group | Formulation Component | Percentage |
|-----------|-------|--------------------------------------|------------|
| 1 | 1-1 | Cyclomethicone | 50-55 |
| | | Alcohol | 40-45 |
| | | Active | 10-15 |
| 2 | 1-2 | Dimethicone (alkoxylated derivative) | 50-55 |
| | | Alcohol | 40-45 |
| | | Active | 10-15 |
| 3 | 1-3 | Alcohol | 40-45 |
| | | Cyclomethicone | 30-35 |
| | | Dimethicone (alkoxylated derivative) | 20-25 |
| | | Active | 10-15 |
| 4 | 2-4 | Isoparaffinic hydrocarbon | 80-85 |
| | | Active | 10-15 |
| | | Cyclic polysiloxane | 5-10 |
| | | Emollient | < 1 |
| 5 | 2-5 | Isoparaffinic hydrocarbon | 80-85 |
| | | Active | 10-15 |
| | | Cyclic polysiloxane | 5-10 |
| | | Alcohol | 1-5 |
| | | Emollient | < 1 |
| 6 | 2-6 | Isoparaffinic hydrocarbon | 75-80 |
| | | Active | 10-15 |
| | | Cyclic polysiloxane | 5-10 |
| | | Alcohol | 5-10 |
| | | Emollient | < 1 |
| 7 | 2-7 | Isoparaffinic hydrocarbon | 70-75 |
| | | Active | 10-15 |
| | | Alcohol | 10-15 |
| | | Cyclic polysiloxane | 5-10 |
| | | Emollient | < 1 |
| 8 | 2-8 | Isoparaffinic hydrocarbon | 65-70 |
| | | Alcohol | 15-20 |
| | | Active | 10-15 |
| | | Cyclic polysiloxane | 5-10 |
| | | Emollient | < 1 |
| 9 | 3-9 | Alcohol | 60-65 |
| | | Water | 25-30 |
| | | Active | 10-15 |
| | | Fragrance | < 1 |

Components of Formulations Tested in Swanson and Harbell (2000)

| Substance | Group | Formulation Component | Percentage |
|------------------|-----------------|------------------------------|-------------------|
| 10 | 3-10 | Water | 45-50 |
| | | Alcohol | 40-45 |
| | | Active | 10-15 |
| | | Fragrance | < 1 |
| 11 | 3-11 | Water | 55-60 |
| | | Alcohol | 30-35 |
| | | Active | 10-15 |
| | | Fragrance | < 1 |
| 12, 13 | Benchmark | Alcohol | 85-90 |
| | | Active | 10-15 |
| | | Dimethicone | 1-5 |
| | | Fragrance | < 1 |
| 14, 15 | Ethanol | Ethanol | 100 |
| 16 | Vehicle control | Alcohol | 85-90 |
| | | Water | 10-15 |
| | | Dimethicone | 1-5 |
| | | Fragrance | < 1 |

Appendix C

***In Vitro* Data for Substances Tested in the BCOP Assay**

| | | |
|-----------|---|-------------|
| C1 | BCOP Data Sorted by Reference | C-3 |
| C2 | BCOP Data Sorted by Substance Name | C-29 |

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Appendix C1

BCOP Data Sorted by Reference

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In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | ⁿ | SD - Opacity | Mean OD ₂₀₀ | ⁿ | SD - OD ₂₀₀ | In Vitro Score ¹ | ⁿ | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--|------------|-------------|------------------|----------------------|------------|---------|--------------|--------------|--------------|------------------------|--------------|------------------------|-----------------------------|--------------|------------|--------------------------------------|---------------------------------------|----------------------|
| Alkyl phosphoric acid ester/amine salt | - | liquid | moderate | 100% | n.p. | - | 37.7 | | | 3.577 | | | 91.3 | | | Severe | Severe | Bailey et al. (2004) |
| Aromatic hydrocarbon #1 | - | liquid | negligible | 100% | n.p. | - | 2.7 | | | 0.000 | | | 2.7 | | | Mild | Mild | Bailey et al. (2004) |
| Aromatic hydrocarbon #2 | - | liquid | negligible | 100% | n.p. | - | 4.3 | | | 0.017 | | | 4.6 | | | Mild | Mild | Bailey et al. (2004) |
| Aryl phosphonates | - | liquid | moderate | 100% | n.p. | - | 20.3 | | | 1.399 | | | 41.3 | | | Moderate | Moderate | Bailey et al. (2004) |
| Carboxylic acid amides | - | solid | moderate | 100% | n.p. | - | 10.7 | | | 1.125 | | | 27.5 | | | Moderate | Moderate | Bailey et al. (2004) |
| 2-Chloro-2,4,4-trimethylpentane | - | liquid | negligible | 100% | n.p. | - | 4.0 | | | 0.004 | | | 4.1 | | | Mild | Mild | Bailey et al. (2004) |
| Clarified slurry oil | - | liquid | negligible | 100% | n.p. | - | 2.3 | | | 0.000 | | | 2.3 | | | Mild | Mild | Bailey et al. (2004) |
| Cutting fluid (conc.) #1 | - | liquid | emulsifies | 100% | n.p. | - | 3.3 | | | 0.001 | | | 3.5 | | | Mild | Mild | Bailey et al. (2004) |
| Cutting fluid (conc.) #2 | - | liquid | emulsifies | 100% | n.p. | - | 4.3 | | | 0.038 | | | 4.9 | | | Mild | Mild | Bailey et al. (2004) |
| Ethylhexyl acid phosphate ester | - | liquid | moderate | 100% | n.p. | - | 117.3 | | | 0.880 | | | 130.5 | | | Severe | Severe | Bailey et al. (2004) |
| 5-Ethylidene-2-norbornene | 16219-75-3 | liquid | negligible | 100% | n.p. | - | 5.7 | | | 0.207 | | | 8.8 | | | Mild | Mild | Bailey et al. (2004) |
| Methyl cyclopentadiene dimer | - | liquid | negligible | 100% | n.p. | - | 0.7 | | | 0.001 | | | 0.7 | | | Mild | Mild | Bailey et al. (2004) |
| Petroleum wax | - | solid | negligible | 100% | n.p. | - | 0.3 | | | -0.001 | | | 0.3 | | | Mild | Mild | Bailey et al. (2004) |
| Polyalkenylsuccinate ester/amine salt | - | liquid | moderate | 100% | n.p. | - | 2.3 | | | 0.000 | | | 2.3 | | | Mild | Mild | Bailey et al. (2004) |
| Process oil | - | liquid | negligible | 100% | n.p. | - | 2.7 | | | 0.004 | | | 2.7 | | | Mild | Mild | Bailey et al. (2004) |
| Thiadiazole alkyl derivative | - | liquid | negligible | 100% | n.p. | - | 7.3 | | | 0.237 | | | 10.9 | | | Moderate | Moderate | Bailey et al. (2004) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 1 | 90.3 | | | 3.676 | | | 145.5 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 2 | 83.7 | | | 2.389 | | | 119.5 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 3 | 55.7 | | | 4.315 | | | 120.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 4 | 94.33 | | | 2.492 | | | 131.72 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 5 | 69.3 | | | 1.942 | | | 98.4 | | | Very severe | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 1 | 6.3 | | | 0.132 | | | 8.3 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 2 | 6 | | | 0.026 | | | 6.4 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 3 | 6 | | | 0.079 | | | 7.2 | | | Mild | Mild | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 4 | 11.34 | | | 0.698 | | | 21.82 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 5 | 4.7 | | | 0.034 | | | 5.2 | | | Mild | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 1 | 2 | | | -0.011 | | | 1.8 | | | Mild | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 2 | 1.7 | | | -0.107 | | | 0.1 | | | Mild | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 3 | 2.7 | | | -0.003 | | | 2.6 | | | Mild | Mild | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 4 | 0.33 | | | 0.03 | | | 0.788 | | | Mild | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 5 | 0 | | | 0.082 | | | 1.2 | | | Mild | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 1 | 75.3 | | | 4.456 | | | 142.2 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 2 | 79.3 | | | 5.223 | | | 157.7 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 3 | 61.7 | | | 4.142 | | | 123.8 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 4 | 63 | | | 4.967 | | | 137.5 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 5 | 74.7 | | | 3.096 | | | 121.1 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 1 | 126.6 | | | 3.264 | | | 126.6 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 2 | 163.7 | | | 6.599 | | | 163.7 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 3 | 110.7 | | | 3.891 | | | 110.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 4 | 130.41 | | | 4.338 | | | 130.41 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 5 | 111.1 | | | 3.117 | | | 111.1 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 1 | 59 | | | 3.588 | | | 112.8 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 2 | 37 | | | 3.566 | | | 90.5 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 3 | 34.3 | | | 4.336 | | | 99.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 4 | 22 | | | 2.699 | | | 62.49 | | | Severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 5 | 38 | | | 2.706 | | | 78.6 | | | Severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 1 | 169.7 | | | 0.218 | | | 173 | | | Very severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 2 | 286.7 | | | 0.134 | | | 288.7 | | | Very severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 3 | 90 | | | 0.073 | | | 91.1 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 4 | 147 | | | 0.191 | | | 149.86 | | | Very severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 5 | 141.3 | | | 0.266 | | | 145.3 | | | Very severe | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | 99 | 1 | 9 | | | 2.7 | | | 49.5 | | | Moderate | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | 99 | 2 | 7.7 | | | 1.989 | | | 37.5 | | | Moderate | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | 99 | 3 | 5.7 | | | 2.546 | | | 43.9 | | | Moderate | Moderate | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | 99 | 4 | 5 | | | 1.257 | | | 23.86 | | | Mild | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | 99 | 5 | 2.3 | | | 1.051 | | | 18.1 | | | Mild | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | ⁿ | SD - Opacity | Mean OD ₂₀₀ | ⁿ | SD - OD ₂₀₀ | In Vitro Score ¹ | ⁿ | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--------------------------------|-----------|-------------|------------------|----------------------|------------|---------|--------------|--------------|--------------|------------------------|--------------|------------------------|-----------------------------|--------------|------------|--------------------------------------|---------------------------------------|---------------------|
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 1 | 37.3 | | | 3.553 | | | 90.6 | | | Very severe | Severe | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 2 | 22.7 | | | 0.682 | | | 32.9 | | | Moderate | Severe | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 3 | 22 | | | 0.63 | | | 31.5 | | | Moderate | Severe | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 4 | 48.67 | | | 2.192 | | | 81.55 | | | Very severe | Severe | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 5 | 31.7 | | | 2.357 | | | 67.1 | | | Severe | Severe | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 90 | 1 | 28 | | | -0.008 | | | 27.8 | | | Moderate | Moderate | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 90 | 2 | 26.3 | | | 0.055 | | | 27.2 | | | Moderate | Moderate | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 90 | 3 | 34.7 | | | 0.007 | | | 34.8 | | | Moderate | Moderate | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 90 | 4 | 102 | | | 0.061 | | | 102.918 | | | Very severe | Moderate | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 90 | 5 | 26.3 | | | 0.004 | | | 26.4 | | | Moderate | Moderate | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 1 | 97.3 | | | 0.02 | | | 97.6 | | | Very severe | Severe | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 2 | 96.3 | | | 0.116 | | | 98.1 | | | Very severe | Severe | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 3 | 57.3 | | | 0.012 | | | 57.5 | | | Severe | Severe | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 4 | 64 | | | 0.022 | | | 64.33 | | | Severe | Severe | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 5 | 72 | | | 0.128 | | | 73.9 | | | Severe | Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | 98 | 1 | 31.7 | | | 2.705 | | | 72.2 | | | Severe | Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | 98 | 2 | 38.3 | | | 3.195 | | | 86.3 | | | Very severe | Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | 98 | 3 | 18.3 | | | 3.015 | | | 63.6 | | | Severe | Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | 98 | 4 | 25.33 | | | 2.892 | | | 68.72 | | | Severe | Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | 98 | 5 | 34 | | | 2.097 | | | 65.4 | | | Severe | Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | 98 | 1 | 22.7 | | | 1.389 | | | 43.5 | | | Moderate | Very Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | 98 | 2 | 27.7 | | | 4.128 | | | 89.6 | | | Very severe | Very Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | 98 | 3 | 24.7 | | | 3.759 | | | 81 | | | Very severe | Very Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | 98 | 4 | 17 | | | 3.97 | | | 71.22 | | | Severe | Very Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | 98 | 5 | 23 | | | 3.58 | | | 76.7 | | | Severe | Very Severe | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | 98 | 1 | 6.7 | | | 0.293 | | | 11 | | | Mild | Mild | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | 98 | 2 | 1.7 | | | 0.163 | | | 4.1 | | | Mild | Mild | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | 98 | 3 | 3 | | | 0.606 | | | 12.1 | | | Mild | Mild | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | 98 | 4 | 3.33 | | | 0.066 | | | 4.33 | | | Mild | Mild | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | 98 | 5 | 6.3 | | | 0.543 | | | 14.5 | | | Mild | Mild | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 1 | 141 | | | 0.399 | | | 147 | | | Very severe | Very Severe | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 2 | 124 | | | -0.071 | | | 122.9 | | | Very severe | Very Severe | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 3 | 96.3 | | | 0.062 | | | 97.3 | | | Very severe | Very Severe | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 4 | 97.66 | | | 0.277 | | | 101.78 | | | Very severe | Very Severe | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 5 | 98.7 | | | 0.189 | | | 101.5 | | | Very severe | Very Severe | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | 97 | 1 | 18.3 | | | 4.442 | | | 85 | | | Very severe | Moderate | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | 97 | 2 | 7.3 | | | 2.838 | | | 49.9 | | | Moderate | Moderate | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | 97 | 3 | 12 | | | 3.87 | | | 70.1 | | | Severe | Moderate | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | 97 | 4 | 11.66 | | | 2.71 | | | 52.24 | | | Moderate | Moderate | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | 97 | 5 | 7 | | | 2.392 | | | 43.2 | | | Moderate | Moderate | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 1 | 304.3 | | | -0.017 | | | 304.1 | | | Very severe | Very Severe | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 2 | 389.3 | | | 0.117 | | | 391.1 | | | Very severe | Very Severe | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 3 | 418 | | | -0.002 | | | 418 | | | Very severe | Very Severe | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 4 | 467 | | | -0.016 | | | 467.09 | | | Very severe | Very Severe | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 5 | 304 | | | 0.234 | | | 307.5 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 1 | 9 | | | 0.058 | | | 9.9 | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 2 | 10.3 | | | 0.059 | | | 11.2 | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 3 | 9.7 | | | 0.078 | | | 10.8 | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 4 | 14.33 | | | 0.007 | | | 14.43 | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 5 | 5.4 | | | 0.012 | | | 5.6 | | | Mild | Mild | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 1 | 65 | | | 2.583 | | | 103.8 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 2 | 58.3 | | | 3.78 | | | 115 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 3 | 62.7 | | | 4.601 | | | 131.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 4 | 84 | | | 3.803 | | | 130.26 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 5 | 37 | | | 2.783 | | | 78.8 | | | Severe | Very Severe | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 1 | 12 | | | 0.415 | | | 18.2 | | | Mild | Mild | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|----------------------------|------------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|---------------------|
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 2 | 10.7 | | | 0.979 | | | 25.3 | | | Moderate | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 3 | 6.7 | | | 0.925 | | | 20.5 | | | Mild | Mild | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 4 | 21.33 | | | 0.68 | | | 31.533 | | | Moderate | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 5 | 4.7 | | | 0.245 | | | 8.3 | | | Mild | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 | 31 | | | 2.893 | | | 74.4 | | | Severe | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 | 21.3 | | | 2.123 | | | 53.2 | | | Moderate | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 | 16.3 | | | 3.134 | | | 63.3 | | | Severe | Severe | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 4 | 36 | | | 4.134 | | | 98.01 | | | Very severe | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 5 | 30 | | | 2.277 | | | 64.2 | | | Severe | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 1 | 8.7 | | | 0.737 | | | 19.7 | | | Mild | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 2 | 5.7 | | | 1.513 | | | 28.4 | | | Moderate | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 3 | 9 | | | 2.543 | | | 47.1 | | | Moderate | Moderate | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 4 | 13.33 | | | 2.065 | | | 44.31 | | | Moderate | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 5 | 11 | | | 0.64 | | | 20.6 | | | Mild | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 1 | 8.3 | | | 3.58 | | | 62 | | | Severe | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 2 | 9 | | | 1.279 | | | 28.2 | | | Moderate | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 3 | 4.3 | | | 1.761 | | | 30.7 | | | Moderate | Nonsevere | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 4 | 7 | | | 3.347 | | | 58.71 | | | Severe | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 5 | 7 | | | 0.837 | | | 19.6 | | | Mild | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 1 | 26.7 | | | 0.052 | | | 27.5 | | | Moderate | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 2 | 14.3 | | | -0.014 | | | 14.1 | | | Mild | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 3 | 5.7 | | | -0.012 | | | 5.5 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 4 | 5.33 | | | 0.014 | | | 5.543 | | | Mild | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 5 | 18.7 | | | 0.061 | | | 19.6 | | | Mild | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 1 | 10.3 | | | 1.136 | | | 27.4 | | | Moderate | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 2 | 5 | | | 1.916 | | | 33.7 | | | Moderate | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 3 | 1.3 | | | 0.609 | | | 10.5 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 4 | 5.33 | | | 0.22 | | | 8.633 | | | Mild | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 5 | 3.6 | | | 0.357 | | | 9 | | | Mild | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 1 | 2.6 | | | 2.859 | | | 45.5 | | | Moderate | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 2 | 4.3 | | | 9.837 | | | 151.9 | | | Very severe | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 3 | 6.3 | | | 3.904 | | | 64.9 | | | Severe | Nonsevere | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 4 | 13 | | | 0.668 | | | 23.023 | | | Mild | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 5 | 5.7 | | | 0.834 | | | 18.2 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 1 | -2 | | | -0.001 | | | -2 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 2 | -0.7 | | | 0.029 | | | -0.2 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 3 | 0 | | | 0.018 | | | 0.3 | | | Mild | Mild | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 4 | 3 | | | 0.005 | | | 3.08 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 5 | 0 | | | 0.01 | | | 0.1 | | | Mild | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 1 | 17.7 | | | 3.591 | | | 71.5 | | | Severe | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 2 | 16 | | | 4.509 | | | 83.6 | | | Very severe | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 3 | 7 | | | 3.746 | | | 63.2 | | | Severe | Severe/Very Severe | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 4 | 15.33 | | | 2.191 | | | 48.19 | | | Moderate | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 5 | 10.7 | | | 2.145 | | | 42.9 | | | Moderate | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 1 | 68.3 | | | 3.232 | | | 116.8 | | | Very severe | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 2 | 93 | | | 2.724 | | | 133.9 | | | Very severe | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 3 | 62.3 | | | 2.741 | | | 103.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 4 | 97.34 | | | 1.424 | | | 118.7 | | | Very severe | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 5 | 54.3 | | | 2.431 | | | 90.8 | | | Very severe | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 1 | 17 | | | 2.494 | | | 54.4 | | | Moderate | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 2 | 20 | | | 3.598 | | | 74 | | | Severe | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 3 | 19 | | | 3.248 | | | 67.7 | | | Severe | Moderate | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 4 | 26 | | | 1.052 | | | 41.78 | | | Moderate | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 5 | 21.4 | | | 1.39 | | | 42.2 | | | Moderate | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 1 | 11.7 | | | 1.868 | | | 39.7 | | | Moderate | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 2 | 23.3 | | | 2.409 | | | 59.5 | | | Severe | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | ⁿ | SD - Opacity | Mean OD ₂₀₀ | ⁿ | SD - OD ₂₀₀ | In Vitro Score ¹ | ⁿ | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------------|------------|-------------|------------------|----------------------|------------|---------|--------------|--------------|--------------|------------------------|--------------|------------------------|-----------------------------|--------------|------------|--------------------------------------|---------------------------------------|---------------------|
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 3 | 16 | | | 3.755 | | | 72.3 | | | Severe | Severe | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 4 | 30.66 | | | 3.189 | | | 78.5 | | | Severe | Severe | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 5 | 18.3 | | | 1.4 | | | 39.3 | | | Moderate | Severe | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 1 | 67.6 | | | -0.045 | | | 67 | | | Severe | Nonsevere | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 2 | 17 | | | -0.008 | | | 16.9 | | | Mild | Nonsevere | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 3 | 21 | | | -0.002 | | | 21 | | | Mild | Nonsevere | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 4 | 56.33 | | | 0.495 | | | 63.76 | | | Severe | Nonsevere | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 5 | 33.3 | | | 0.029 | | | 33.8 | | | Moderate | Nonsevere | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 1 | 51.6 | | | 1.301 | | | 71.2 | | | Severe | Moderate | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 2 | 42 | | | 0.299 | | | 46.5 | | | Moderate | Moderate | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 3 | 38.3 | | | 0.887 | | | 51.6 | | | Moderate | Moderate | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 4 | 43.1 | | | 0.72 | | | 53.9 | | | Moderate | Moderate | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 5 | 45.3 | | | 0.384 | | | 51.1 | | | Moderate | Moderate | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 1 | 16.3 | | | 0.002 | | | 16.3 | | | Mild | Mild | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 2 | 6.7 | | | -0.052 | | | 5.9 | | | Mild | Mild | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 3 | 10.3 | | | -0.015 | | | 10.1 | | | Mild | Mild | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 4 | 17.33 | | | 0.013 | | | 17.53 | | | Mild | Mild | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 5 | 11 | | | -0.003 | | | 11 | | | Mild | Mild | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 1 | 1.3 | | | 0.169 | | | 3.8 | | | Mild | Mild | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 2 | 2.3 | | | 0.152 | | | 4.6 | | | Mild | Mild | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 3 | 0.3 | | | 0.071 | | | 1.4 | | | Mild | Mild | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 4 | 1 | | | 0.047 | | | 1.71 | | | Mild | Mild | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 5 | 0.3 | | | 0.161 | | | 2.7 | | | Mild | Mild | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 1 | 68 | | | 1.665 | | | 93 | | | Very severe | Severe | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 2 | 51.3 | | | 1.069 | | | 67.4 | | | Severe | Severe | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 3 | 34 | | | 1.212 | | | 52.2 | | | Moderate | Severe | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 4 | 58 | | | 1.38 | | | 78.71 | | | Severe | Severe | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 5 | 51.7 | | | 0.607 | | | 60.8 | | | Severe | Severe | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 1 | 4.7 | | | 0.273 | | | 8.8 | | | Mild | Mild | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 2 | 8.7 | | | 0.759 | | | 20.1 | | | Mild | Mild | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 3 | 5.7 | | | 0.307 | | | 10.3 | | | Mild | Mild | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 4 | 8 | | | 0.35 | | | 13.25 | | | Mild | Mild | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 5 | 5.7 | | | 0.305 | | | 10.3 | | | Mild | Mild | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 1 | 119.4 | | | 0.095 | | | 120.8 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 2 | 65.7 | | | 0.045 | | | 66.3 | | | Severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 3 | 41 | | | 0.065 | | | 42 | | | Moderate | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 4 | 86.67 | | | 0.137 | | | 88.73 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 5 | 70 | | | 0.168 | | | 72.5 | | | Severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 1 | 73.3 | | | 4.177 | | | 136 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 2 | 83 | | | 4.124 | | | 144.9 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 3 | 73 | | | 5.864 | | | 161 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 4 | 108 | | | 3.55 | | | 161.2 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 5 | 94.7 | | | 3.222 | | | 143 | | | Very severe | Very Severe | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 1 | 11 | | | 2.159 | | | 43.4 | | | Moderate | Moderate | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 2 | 13 | | | 4.392 | | | 78.9 | | | Severe | Moderate | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 3 | 10 | | | 1.984 | | | 39.8 | | | Moderate | Moderate | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 4 | 6 | | | 0.569 | | | 14.54 | | | Mild | Moderate | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 5 | 6 | | | 1.464 | | | 28 | | | Moderate | Moderate | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 1 | 17.3 | | | 0.809 | | | 29.5 | | | Moderate | Moderate | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 2 | 11.3 | | | 1.006 | | | 26.4 | | | Moderate | Moderate | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 3 | 18.7 | | | 1.474 | | | 40.8 | | | Moderate | Moderate | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 4 | 18 | | | 0.8996 | | | 31.82 | | | Moderate | Moderate | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 5 | 13.3 | | | 0.679 | | | 23.5 | | | Moderate | Moderate | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 1 | 0.3 | | | 0.019 | | | 0.6 | | | Mild | Mild | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 2 | 2 | | | 0.036 | | | 2.5 | | | Mild | Mild | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 3 | -1.7 | | | 0.021 | | | -1.3 | | | Nonirritant | Mild | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | ⁿ | SD - Opacity | Mean OD ₂₀₀ | ⁿ | SD - OD ₂₀₀ | In Vitro Score ¹ | ⁿ | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|------------|-------------|------------------|----------------------|---------------|---------|--------------|--------------|--------------|------------------------|--------------|------------------------|-----------------------------|--------------|------------|--------------------------------------|---------------------------------------|---------------------|
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 4 | 1 | | | 0.005 | | | 1.08 | | | Mild | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 5 | 2.7 | | | 0.01 | | | 2.8 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 1 | 8.7 | | | 0.499 | | | 16.2 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 2 | 11 | | | 0.793 | | | 22.9 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 3 | 8.3 | | | 0.248 | | | 12 | | | Mild | Mild | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 4 | 7 | | | 0.692 | | | 17.38 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 5 | 3 | | | 0.234 | | | 6.5 | | | Mild | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 1 | 120.7 | | | -0.022 | | | 120.3 | | | Very severe | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 2 | 87.7 | | | -0.234 | | | 84.2 | | | Very severe | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 3 | 125 | | | 0.044 | | | 125.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 4 | 121.33 | | | 0.051 | | | 123.09 | | | Very severe | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 5 | 153.7 | | | 0.011 | | | 153.8 | | | Very severe | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 1 | 73.7 | | | 4.468 | | | 140.7 | | | Very severe | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 2 | 83.7 | | | 4.117 | | | 145.4 | | | Very severe | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 3 | 61 | | | 4.763 | | | 132.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 4 | 87.33 | | | 7.445 | | | 199.02 | | | Very severe | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 5 | 74.7 | | | 3.204 | | | 122.7 | | | Very severe | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 1 | 1 | | | -0.047 | | | 0.3 | | | Mild | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 2 | 0.3 | | | 0.002 | | | 0.4 | | | Mild | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 3 | 1.7 | | | 0.028 | | | 2.1 | | | Mild | Mild | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 4 | 2.34 | | | -0.033 | | | 1.85 | | | Mild | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 5 | 2 | | | 0.07 | | | 3.1 | | | Mild | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 1 | 232.3 | | | 3.53 | | | 285.2 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 2 | 173.3 | | | 3.382 | | | 224.1 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 3 | 197 | | | 3.849 | | | 254.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 4 | 283 | | | 4.329 | | | 348.27 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 5 | 197.3 | | | 3.321 | | | 247.2 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 1 | 100.3 | | | 4.471 | | | 167.4 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 2 | 80.7 | | | 3.504 | | | 133.2 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 3 | 88.7 | | | 3.856 | | | 146.5 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 4 | 116.66 | | | 3.628 | | | 171.08 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 5 | 88 | | | 2.888 | | | 132.3 | | | Very severe | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 1 | 12.3 | | | 1.29 | | | 31.7 | | | Moderate | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 2 | 3.3 | | | 1.892 | | | 31.7 | | | Moderate | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 3 | 0.3 | | | 1.801 | | | 27.3 | | | Moderate | Moderate | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 4 | 6 | | | 1.348 | | | 26.22 | | | Moderate | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 5 | 0 | | | 0.82 | | | 12.3 | | | Mild | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | surfactant | 15% | 98 | 1 | 4 | | | 2.884 | | | 47.3 | | | Moderate | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | surfactant | 15% | 98 | 2 | 6 | | | 5.801 | | | 93 | | | Very severe | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | surfactant | 15% | 98 | 3 | 3.3 | | | 3.988 | | | 63.2 | | | Severe | Severe | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | surfactant | 15% | 98 | 4 | 1.66 | | | 3.862 | | | 59.61 | | | Severe | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | surfactant | 15% | 98 | 5 | 7.7 | | | 3.042 | | | 53.3 | | | Moderate | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 1 | 1.3 | | | 0.054 | | | 2.1 | | | Mild | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 2 | 6.7 | | | 0.059 | | | 7.6 | | | Mild | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 3 | 3 | | | 0.187 | | | 5.8 | | | Mild | Mild | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 4 | 43 | | | 0.556 | | | 49.59 | | | Moderate | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 5 | 4 | | | 0.081 | | | 4.9 | | | Mild | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 1 | 10 | | | 8.908 | | | 143.6 | | | Very severe | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 2 | 13.7 | | | 6.982 | | | 118.4 | | | Very severe | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 3 | 10 | | | 5.749 | | | 96.2 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 4 | 11 | | | 3.568 | | | 64.531 | | | Severe | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 5 | 9.7 | | | 3.547 | | | 62.9 | | | Severe | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 1 | 24 | | | -0.023 | | | 23.6 | | | Mild | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 2 | 8.3 | | | -0.027 | | | 7.9 | | | Mild | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 3 | 14.3 | | | -0.008 | | | 14.2 | | | Mild | Mild | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 4 | 21.33 | | | -0.045 | | | 20.65 | | | Mild | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|-----------|-------------|------------------|----------------------|---------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 5 | 6 | | | 0.19 | | | 8.9 | | | Mild | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 1 | 88 | | | 4.095 | | | 149.4 | | | Very severe | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 2 | 106.3 | | | 2.19 | | | 139.2 | | | Very severe | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 3 | 82 | | | 3.572 | | | 135.6 | | | Very severe | Very Severe | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 4 | 81.01 | | | 3.76 | | | 137.44 | | | Very severe | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 5 | 74 | | | 1.671 | | | 99.1 | | | Very severe | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 1 | 9.3 | | | 2.26 | | | 43.3 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 2 | 6 | | | 1.813 | | | 33.2 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 3 | 5.3 | | | 2.122 | | | 37.2 | | | Moderate | Moderate | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 4 | 2 | | | 2.427 | | | 38.41 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 5 | 4 | | | 1.473 | | | 26.1 | | | Moderate | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 1 | 228 | | | 2.93 | | | 272 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 2 | 154.7 | | | 4.687 | | | 225 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 3 | 245.3 | | | 3.44 | | | 296.9 | | | Very severe | Very Severe | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 4 | 277 | | | 3.072 | | | 323.08 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 5 | 157 | | | 3.115 | | | 203.7 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 1 | 79.3 | | | 0.173 | | | 81.9 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 2 | 49 | | | 0.053 | | | 49.8 | | | Moderate | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 3 | 73.7 | | | 0.111 | | | 75.3 | | | Severe | Severe/Very Severe | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 4 | 92.33 | | | 0.042 | | | 92.97 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 5 | 78.4 | | | 0.067 | | | 79.3 | | | Severe | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | surfactant | 5% | 98 | 1 | 5.3 | | | 4.6 | | | 74.3 | | | Severe | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | surfactant | 5% | 98 | 2 | 8.3 | | | 6.553 | | | 106.6 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | surfactant | 5% | 98 | 3 | 3.7 | | | 5.099 | | | 80.2 | | | Very severe | Very Severe | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | surfactant | 5% | 98 | 4 | 5 | | | 4.79 | | | 76.79 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | surfactant | 5% | 98 | 5 | 7.7 | | | 3.06 | | | 53.6 | | | Moderate | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 1 | 6 | | | 5.312 | | | 85.7 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 2 | 6.7 | | | 4.624 | | | 76 | | | Severe | Severe/Very Severe | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 3 | 6 | | | 5.337 | | | 86.1 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 4 | 3.33 | | | 3.617 | | | 57.58 | | | Severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 5 | 7.7 | | | 2.567 | | | 46.2 | | | Moderate | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 1 | -0.7 | | | 0.006 | | | -0.6 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 2 | -0.3 | | | -0.052 | | | -1.1 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 3 | -2 | | | 0.026 | | | -1.6 | | | Mild | Mild | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 4 | 2.67 | | | 0.0003 | | | 2.711 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 5 | 0.1 | | | 0.026 | | | 0.4 | | | Mild | | Balls et al. (1995) |
| Anti-Dandruff Shampoo (HZY) | - | n.p. | n.p. | 100% | n.p. | - | -0.092 | | | 0.182 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Baby Shampoo No. 1 (HZP) | - | n.p. | n.p. | 100% | n.p. | - | -0.02 | | | 0.062 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Baby Shampoo No. 2 (HZF) | - | n.p. | n.p. | 100% | n.p. | - | 0.067 | | | 0.265 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Bubble Bath (HZK) | - | n.p. | n.p. | 100% | n.p. | - | 0.007 | | | 0.103 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Cleansing Gel (HZQ) | - | n.p. | n.p. | 100% | n.p. | - | 0.034 | | | 0.073 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Eye Make-Up Remover (HZH) | - | n.p. | n.p. | 100% | n.p. | - | 0.034 | | | 0.068 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Facial Cleanser (HZZ) | - | n.p. | n.p. | 100% | n.p. | - | 0.067 | | | 0.001 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Foam Bath (HZZ) | - | n.p. | n.p. | 100% | n.p. | - | 0.094 | | | 0.238 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Gel Cleanser (HZE) | - | n.p. | n.p. | 100% | n.p. | - | 0.009 | | | 0.124 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Mild Shampoo (HZJ) | - | n.p. | n.p. | 100% | n.p. | - | -0.007 | | | 0.01 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Polishing Scrub (HZT) | - | n.p. | n.p. | 100% | n.p. | - | 0.027 | | | 0.015 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Shampoo No. 2 (HZX) | - | n.p. | n.p. | 100% | n.p. | - | 0.087 | | | 0.184 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Shampoo No. 7 (HZA) | - | n.p. | n.p. | 100% | n.p. | - | 0.113 | | | 0.205 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Shower Gel (HZS) | - | n.p. | n.p. | 100% | n.p. | - | 0.189 | | | 0.303 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Skin Cleanser (HZL) | - | n.p. | n.p. | 100% | n.p. | - | 0.127 | | | 0.261 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | n.p. | - | 1.38 | | | 0.653 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | surfactant | 1% | n.p. | - | 0.970 | | | 0.764 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | - | 1.612 | | | 1.180 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | n.p. | - | 1.332 | | | 0.776 | | | | | | Severe | Severe | Casterton et al. (1996) |
| 4-Bromophenotole | - | n.p. | n.p. | 100% | n.p. | - | 0.079 | | | 0.018 | | | | | | Mild | Mild | Casterton et al. (1996) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | ⁿ | SD - Opacity | Mean OD ₂₀₀ | ⁿ | SD - OD ₂₀₀ | In Vitro Score ¹ | ⁿ | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--|------------|-------------|------------------|----------------------|------------|---------|--------------|--------------|--------------|------------------------|--------------|------------------------|-----------------------------|--------------|------------|--------------------------------------|---------------------------------------|-------------------------|
| n-Butanol | 71-36-3 | liquid | n.p. | 100% | n.p. | - | 0.414 | | | 0.671 | | | | | | Severe | Severe | Casterton et al. (1996) |
| 2-Butoxyethanol | 111-76-2 | liquid | n.p. | 100% | n.p. | - | 0.394 | | | 1.160 | | | | | | Severe | Severe | Casterton et al. (1996) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 100% | n.p. | - | 0.331 | | | 0.002 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0% | n.p. | - | 0.082 | | | 0.089 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Cetylpyridinium bromide (1%) | 140-72-7 | liquid | surfactant | 1% | n.p. | - | 0.425 | | | 0.364 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | - | 0.855 | | | 0.705 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | - | 0.908 | | | 0.775 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | - | 0.312 | | | 0.647 | | | | | | Severe | Severe | Casterton et al. (1996) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | n.p. | - | 0.124 | | | 0.106 | | | | | | Mild | Mild | Casterton et al. (1996) |
| 2,4-Difluoronitrobenzene | 446-35-5 | liquid | n.p. | 100% | n.p. | - | 0.049 | | | 0.008 | | | | | | Mild | Mild | Casterton et al. (1996) |
| 1,3-Diisopropylbenzene | 99-62-7 | liquid | n.p. | 100% | n.p. | - | 0.029 | | | 0.000 | | | | | | Mild | Mild | Casterton et al. (1996) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | n.p. | - | 1.30 | | | 1.11 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Dodecane | 112-40-3 | liquid | n.p. | 100% | n.p. | - | 0.086 | | | 0.006 | | | | | | Mild | Mild | Casterton et al. (1996) |
| 2-Ethylhexanol | 104-76-7 | liquid | water soluble | 100% | n.p. | - | 0.321 | | | 0.352 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| 3-Ethyltoluene | 620-14-4 | liquid | n.p. | 100% | n.p. | - | 0.029 | | | 0.009 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | n.p. | - | 0.330 | | | 0.257 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | n.p. | - | -0.020 | | | 0.013 | | | | | | Mild | Mild | Casterton et al. (1996) |
| 1,5-Hexadiene | 592-42-7 | liquid | n.p. | 100% | n.p. | - | 0.164 | | | 0.085 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | n.p. | - | 0.453 | | | 0.688 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | n.p. | - | 0.593 | | | 0.526 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | n.p. | - | 1.07 | | | 0.236 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | n.p. | - | 1.110 | | | 0.395 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | n.p. | - | 0.413 | | | 0.172 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| 1-Methylpropyl benzene | 135-98-8 | liquid | n.p. | 100% | n.p. | - | 0.041 | | | 0.005 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Parafluoramine | 371-40-4 | liquid | water insoluble | 100% | n.p. | - | 0.413 | | | 0.106 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | - | -0.015 | | | 0.008 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Polyethylene glycol 600 | - | liquid | surfactant | 100% | n.p. | - | -0.013 | | | 0.008 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Propylene glycol | 57-55-6 | liquid | n.p. | 100% | n.p. | - | 0.076 | | | 0.024 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | n.p. | - | 1.69 | | | 1.28 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | - | 1.97 | | | 1.23 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | n.p. | - | 0.163 | | | 0.424 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Sodium lauryl sulfate (3%) | 151-21-3 | liquid | surfactant | 3% | n.p. | - | 0.040 | | | 0.113 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Sodium lauryl sulfate (30%) | 151-21-3 | liquid | surfactant | 30% | n.p. | - | 0.095 | | | 0.312 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | n.p. | - | 0.420 | | | 0.805 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | n.p. | - | 0.029 | | | 0.011 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | n.p. | - | 1.43 | | | 0.031 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | n.p. | - | 0.281 | | | 0.564 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Triton X-100 (1%) | 9002-93-1 | liquid | surfactant | 1% | n.p. | - | 0.083 | | | 0.063 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | n.p. | - | 0.281 | | | 1.003 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | n.p. | - | -0.006 | | | 0.005 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Xylene | 1330-20-7 | liquid | n.p. | 100% | n.p. | - | 0.220 | | | 0.257 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway all fabric bleach | - | n.p. | n.p. | 100% | n.p. | - | 0.400 | | | 1.435 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway automatic dishwashing compound for soft water | - | n.p. | n.p. | 100% | n.p. | - | 2.249 | | | 1.381 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway automatic dishwashing compound, standard formula | - | n.p. | n.p. | 100% | n.p. | - | 0.683 | | | 0.477 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway concrete floor cleaner | - | n.p. | n.p. | 100% | n.p. | - | 2.205 | | | 1.839 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway Dish Drops dishwashing liquid | - | n.p. | n.p. | 100% | n.p. | - | 0.290 | | | 0.493 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway dry chlorine bleach | - | n.p. | n.p. | 100% | n.p. | - | 0.204 | | | 0.311 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway fabric softener | - | n.p. | n.p. | 100% | n.p. | - | 0.089 | | | 0.013 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway Kool Wash delicate fabric detergent | - | n.p. | n.p. | 100% | n.p. | - | 0.039 | | | 0.326 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway LOC all purpose cleaner | - | n.p. | n.p. | 100% | n.p. | - | 0.193 | | | 0.050 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway prewash liquid | - | liquid | n.p. | 100% | n.p. | - | 0.142 | | | 0.079 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway Pursue disinfectant cleaner | - | n.p. | n.p. | 100% | n.p. | - | 1.437 | | | 0.763 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway Redu dye stain remover | - | n.p. | n.p. | 100% | n.p. | - | 0.138 | | | 0.028 | | | | | | Mild | Mild | Casterton et al. (1996) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|---------------------------------------|------------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Amway SA8 laundry liquid | - | liquid | n.p. | 100% | n.p. | - | 0.032 | | | 0.179 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway SA8 limited phos laundry powder | - | solid | n.p. | 100% | n.p. | - | 0.415 | | | 0.285 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 156 | | | Severe | Severe | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 138 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 232 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 156 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 132 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 191 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 190 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 166 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 9 | 94.1 | 6 | 18.9 | 1.948 | 6 | 0.455 | 123 | 6 | 14.4 | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 101 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 200 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 9 | 9.7 | 6 | 2.3 | 0.012 | 6 | 0.007 | 10 | 6 | 2.3 | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 7 | | | Mild | Mild | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 9 | 10.9 | 6 | 1.4 | 0.144 | 6 | 0.188 | 13 | 6 | 2.5 | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 1 | | | | | | | -2 | | | Nonirritant | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 3 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 6 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 9 | 1.4 | 6 | 1.2 | 0.003 | 6 | 0.007 | 1 | 6 | 1.3 | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 128 | | | Severe | Severe | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 124 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 163 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 106 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 128 | | | Severe | | Gautheron et al. (1994) |

***In Vitro* Data for Substances Tested in the BCOP Assay: Sorted by Reference**

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | <i>In Vitro</i> Score ¹ | n | SD - Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | Reference | |
|-------------------------------|-----------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|------------------------------------|---|------------|---|---------------------------------------|-------------------------|-------------------------|
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 129 | | | Severe | Severe | Gautheron et al. (1994) | |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 142 | | | Severe | | Gautheron et al. (1994) | |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 129 | | | Severe | | Gautheron et al. (1994) | |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 9 | 84.6 | 6 | 3.3 | 5.42 | 6 | 0.949 | 166 | 6 | 14.5 | Severe | | Gautheron et al. (1994) | |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 142 | | | Severe | | Gautheron et al. (1994) | |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 116 | | | Severe | | Gautheron et al. (1994) | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 4 | | | Mild | | Mild | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 0 | | | Mild | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 1 | | | Mild | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 1 | | | Mild | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 3 | | | Mild | Gautheron et al. (1994) | | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | Gautheron et al. (1994) | | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -10 | | | Nonirritant | Gautheron et al. (1994) | | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 9 | 3.1 | 6 | 2.3 | 0.029 | 6 | 0.014 | 4 | 6 | 2.2 | Mild | Gautheron et al. (1994) | | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | -1 | | | Nonirritant | Gautheron et al. (1994) | | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 1 | | | Mild | Gautheron et al. (1994) | | |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 6 | | | Mild | Gautheron et al. (1994) | | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 9 | 1.1 | 6 | 0.6 | -0.002 | 6 | 0.008 | 1 | 6 | 0.7 | Mild | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) | |
| BR11-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 1 | | | | | | | 48 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 2 | | | | | | | 44 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 3 | | | | | | | 64 | | | Severe | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 4 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 5 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 6 | | | | | | | 30 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 7 | | | | | | | 80 | | | Severe | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 8 | | | | | | | 32 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 9 | 34.2 | 6 | 3.1 | 0.495 | 6 | 0.199 | 42 | 6 | 5 | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 10 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 11 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 12 | | | | | | | 49 | | | Moderate | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 92 | | | Severe | Severe | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 108 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 96 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 130 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 93 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 9 | 76.6 | 6 | 3.9 | 4.341 | 6 | 0.551 | 142 | 6 | 8.2 | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 118 | | | Severe | | Gautheron et al. (1994) | |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 108 | | | Severe | | Gautheron et al. (1994) | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 96 | | | Severe | Gautheron et al. (1994) | | |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--------------------------------------|-----------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 72 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 106 | | | Moderate | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 73 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 119 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 103 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 46 | | | Moderate | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 9 | 13.9 | 6 | 2.6 | 5.718 | 6 | 0.511 | 100 | 6 | 8 | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | 60 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 200 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 59 | | | Severe | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 41 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 105 | | | Severe | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 39 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 34 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 49 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 41 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 9 | 31.1 | 6 | 3.2 | 4.119 | 6 | 1.341 | 92 | 6 | 22 | Severe | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 36 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 56 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 134 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 82 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 118 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 110 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 66 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 193 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 9 | 75.2 | 6 | 14.2 | 0.416 | 6 | 0.116 | 82 | 6 | 13.7 | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 213 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 135 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 23 | | | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 23 | | | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 18 | | | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 31 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 18 | | | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 71 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 9 | 19.3 | 6 | 4.8 | -0.01 | 6 | 0.004 | 19 | 6 | 4.7 | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 20 | | | Mild | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 34 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 9 | 0.7 | 6 | 1.8 | 0.097 | 6 | 0.176 | 2 | 6 | 2.6 | Mild | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|-------------------------|------------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 9 | 6.3 | 6 | 1.7 | 0.204 | 6 | 0.056 | 9 | 6 | 1.4 | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 22 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | -1 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | -8 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -6 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 9 | 0.8 | 6 | 0.5 | 0.01 | 6 | 0.014 | 1 | 6 | 0.6 | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | -1 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 | | | | | | | 58 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 | | | | | | | 67 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 | | | | | | | 70 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 4 | | | | | | | 45 | | | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 5 | | | | | | | 60 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 6 | | | | | | | 64 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 7 | | | | | | | 58 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 8 | | | | | | | 51 | | | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 9 | 22.3 | 6 | 4.1 | 1.56 | 6 | 0.316 | 46 | 6 | 6.6 | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 11 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 12 | | | | | | | 45 | | | Moderate | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 99 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 100 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 128 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 85 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 94 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 93 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 9 | 61.7 | 6 | 1.9 | 1.515 | 6 | 0.134 | 84 | 6 | 1.2 | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 101 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 86 | | | Severe | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 26 | | | Moderate | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 38 | | | Moderate | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 31 | | | Moderate | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 33 | | | Moderate | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 21 | | | Moderate | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference | |
|-----------------------------------|------------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|-------------------------|
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 29 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 28 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 38 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 9 | 24 | 6 | 2.9 | 0.117 | 6 | 0.007 | 26 | 6 | 3.8 | Moderate | Moderate | Gautheron et al. (1994) | |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Moderate | Gautheron et al. (1994) | |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 38 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 42 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 73 | | | Severe | Severe | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 63 | | | Severe | Severe | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 61 | | | Severe | Severe | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 65 | | | Severe | Severe | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 33 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 34 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 87 | | | Severe | Severe | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 48 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 9 | 20.6 | 6 | 2.5 | 1.97 | 6 | 0.197 | 50 | 6 | 4 | Moderate | Moderate | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 39 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 68 | | | Severe | Severe | Gautheron et al. (1994) | |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 51 | | | Moderate | Moderate | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 63 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 81 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 90 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 62 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 108 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 66 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 90 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 57 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 9 | 85.2 | 6 | 5.6 | 0.154 | 6 | 0.041 | 88 | 6 | 5.3 | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Severe | Severe | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 75 | | | Severe | Severe | Gautheron et al. (1994) | |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 63 | | | Severe | Severe | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 6 | | | | | | | -4 | | | Nonirritant | Nonirritant | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 9 | -0.2 | 6 | 0.5 | -0.005 | 6 | 0.005 | 0 | 6 | 0.5 | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) | |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 12 | | | | | | | -1 | | | Nonirritant | Nonirritant | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 18 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 24 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 25 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 14 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 13 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 15 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 18 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 9 | 16.6 | 6 | 4.5 | 0.065 | 6 | 0.082 | 18 | 6 | 4.7 | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 23 | | | Mild | Mild | Gautheron et al. (1994) | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 21 | | | Mild | Mild | Gautheron et al. (1994) | |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------------|----------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 93 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 40 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 33 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 91 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 82 | | | Severe | Severe | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 76 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 9 | 18.3 | 6 | 3.6 | 3.438 | 6 | 0.562 | 70 | 6 | 6.9 | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 102 | | | Severe | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 9 | 1.3 | 6 | 1.8 | 0.002 | 6 | 0.002 | 1 | 6 | 1.8 | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 | | | | | | | 73 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 | | | | | | | 140 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 4 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 5 | | | | | | | 96 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 6 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 7 | | | | | | | 82 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 8 | | | | | | | 122 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 9 | 40.3 | 6 | 9.9 | 1.598 | 6 | 0.271 | 64 | 6 | 11.2 | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 10 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 11 | | | | | | | 114 | | | Severe | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 12 | | | | | | | 65 | | | Severe | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 12 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 9 | 0.2 | 6 | 0.4 | -0.001 | 6 | 0.003 | 0 | 6 | 0.4 | Mild | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|---------------------------------|------------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | -4 | | | Nonirritant | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 50 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 45 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 43 | | | Moderate | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 9 | 7.8 | 6 | 0.9 | 3.653 | 6 | 0.496 | 63 | 6 | 7.3 | Severe | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 89 | | | Severe | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 82 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 103 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 76 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 92 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 68 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 9 | 16.2 | 6 | 4.3 | 5.742 | 6 | 1.462 | 102 | 6 | 24.8 | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 76 | | | Severe | | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 55 | | | Moderate | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 9 | 0.5 | 6 | 0.5 | 0.016 | 6 | 0.004 | 1 | 6 | 0.5 | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 2 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 3 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -8 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 9 | -0.2 | 6 | 0.4 | -0.004 | 6 | 0.002 | 0 | 6 | 0.4 | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 11 | | | | | | | -4 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 12 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 54 | | | Moderate | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 71 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference | |
|-----------------------|----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|-------------------------|
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 108 | | | Severe | Severe | Gautheron et al. (1994) | |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 37 | | | Moderate | | Gautheron et al. (1994) | |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 19 | | | Mild | | Gautheron et al. (1994) | |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 9 | 73.7 | 6 | 6 | 1.698 | 6 | 0.56 | 99 | 6 | 12.8 | Severe | | Gautheron et al. (1994) | |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 179 | | | Severe | | Gautheron et al. (1994) | |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 102 | | | Severe | | Gautheron et al. (1994) | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 61 | | | Severe | | Severe | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 69 | | | Severe | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 66 | | | Severe | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 47 | | | Moderate | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 48 | | | Moderate | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 62 | | | Severe | Gautheron et al. (1994) | | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 65 | | | Severe | Gautheron et al. (1994) | | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 62 | | | Severe | Gautheron et al. (1994) | | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 9 | 45.1 | 6 | 7.1 | 0.8 | 6 | 0.137 | 57 | 6 | 8.9 | Severe | Gautheron et al. (1994) | | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Gautheron et al. (1994) | | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 74 | | | Severe | Gautheron et al. (1994) | | |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 88 | | | Severe | Gautheron et al. (1994) | | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 22 | | | Mild | Mild | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 25 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 27 | | | Moderate | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 19 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 21 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 23 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 9 | 11.2 | 6 | 2.7 | 0.546 | 6 | 0.244 | 19 | 6 | 3.1 | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 20 | | | Mild | | Gautheron et al. (1994) | |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | -4 | | | Nonirritant | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 9 | 0.4 | 6 | 1.4 | 0.005 | 6 | 0.004 | 1 | 6 | 1.4 | Mild | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) | |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 11 | | | Mild | Mild | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 9 | 16.5 | 6 | 1.7 | 0.008 | 6 | 0.018 | 17 | 6 | 1.9 | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) | |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) | |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 1 | | | | | | | 65 | | | Severe | Gautheron et al. (1994) | | |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|-------------------------|-----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 2 | | | | | | | 33 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 3 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 4 | | | | | | | 49 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 5 | | | | | | | 66 | | | Severe | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 6 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 7 | | | | | | | 37 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 8 | | | | | | | 25 | | | Mild | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 9 | 27.7 | 6 | 5 | 2.212 | 6 | 0.377 | 61 | 6 | 6.9 | Severe | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 11 | | | | | | | | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 12 | | | | | | | 64 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 61 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 79 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 34 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 70 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 46 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 54 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 44 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 9 | 49.1 | 6 | 3.4 | 0.084 | 6 | 0.036 | 50 | 6 | 3.4 | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 67 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 76 | | | Severe | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 13 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 9 | 1.4 | 6 | 1.9 | 0.015 | 6 | 0.011 | 2 | 6 | 1.9 | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -6 | | | Nonirritant | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 9 | 0.7 | 6 | 0.4 | -0.008 | 6 | 0.008 | 1 | 6 | 0.4 | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 12 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 9 | 11.1 | 6 | 1 | 0.143 | 6 | 0.052 | 13 | 6 | 1.6 | Mild | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|----------------------------|----------|-------------|----------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 13 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 1 | | | | | | | 117 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 2 | | | | | | | 156 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 3 | | | | | | | 109 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 4 | | | | | | | 111 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 5 | | | | | | | 164 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 6 | | | | | | | 174 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 7 | | | | | | | 103 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 8 | | | | | | | 50 | | | Moderate | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 9 | 134.9 | 6 | 9.7 | 0.287 | 6 | 0.216 | 139 | 6 | 10.2 | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 11 | | | | | | | 94 | | | Severe | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 12 | | | | | | | 19 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 9 | 5.2 | 6 | 1.7 | 0.066 | 6 | 0.059 | 6 | 6 | 1.5 | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 12 | | | Mild | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 1 | | | | | | | 102 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 2 | | | | | | | 123 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 3 | | | | | | | 186 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 4 | | | | | | | 79 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 5 | | | | | | | 102 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 6 | | | | | | | 77 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 7 | | | | | | | 124 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 8 | | | | | | | 132 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 9 | 44.4 | 6 | 3.3 | 4.015 | 6 | 0.849 | 105 | 6 | 15.7 | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 11 | | | | | | | 96 | | | Severe | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 12 | | | | | | | 115 | | | Severe | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 1 | | | | | | | 17 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 2 | | | | | | | 29 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 3 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 4 | | | | | | | 46 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 5 | | | | | | | 52 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 6 | | | | | | | 24 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 7 | | | | | | | 15 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 8 | | | | | | | 18 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 9 | 57 | 6 | 5.4 | 0.063 | 6 | 0.04 | 58 | 6 | 5.8 | Severe | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 11 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 12 | | | | | | | 72 | | | Severe | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 1 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 2 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 3 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 4 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 5 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|-----------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 6 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 7 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 8 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 9 | 1.7 | 6 | 0.9 | 0.103 | 6 | 0.042 | 3 | 6 | 1.3 | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 10 | | | | | | | 9 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 11 | | | | | | | 11 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 12 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 19 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 9 | 2.6 | 6 | 1.4 | -0.003 | 6 | 0.006 | 3 | 6 | 1.4 | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 18 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 146 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 175 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 169 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 152 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 140 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 120 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 129 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 173 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 9 | 85.8 | 6 | 9.2 | 4.373 | 6 | 1.028 | 151 | 6 | 20.7 | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 203 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 104 | | | Severe | Severe | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 47 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 42 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 78 | | | Severe | Severe | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 28 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 42 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 47 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 48 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 24 | | | Mild | Mild | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 9 | 7.7 | 6 | 1.9 | 5.561 | 6 | 1.398 | 91 | 6 | 20 | Severe | Severe | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 28 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 47 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | -1 | | | Nonirritant | Nonirritant | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 9 | 2.6 | 6 | 0.9 | 0.025 | 6 | 0.011 | 3 | 6 | 1 | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Moderate | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 25 | | | Mild | Mild | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|----------------------------------|-----------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 26 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 27 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 9 | 12.5 | 6 | 1.5 | 0.579 | 6 | 0.369 | 21 | 6 | 4.5 | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 21 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 9 | 3 | 6 | 1.6 | 0.008 | 6 | 0.014 | 3 | 6 | 1.7 | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Anti-Dandruff Shampoo (HZY) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.847 | 3 | 0.199 | 20.8 | | | Severe | Severe | Gettings et al. (1996) |
| Baby Shampoo No. 1 (HZP) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.261 | 3 | 0.05 | 4.0 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Baby Shampoo No. 2 (HZF) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.425 | 3 | 0.082 | 8.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Bubble Bath (HZK) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.956 | 3 | 0.324 | 17.5 | | | Severe | Severe | Gettings et al. (1996) |
| Cleansing Gel (HZQ) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.164 | 3 | 0.05 | 2.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Eye Make-Up Remover (HZH) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.02 | 3 | 0.016 | 0.2 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Facial Cleansing Foam (HZR) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.239 | 3 | 0.02 | 4.1 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Facial Cleanser (HZZ) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.004 | 3 | 0.004 | 1.8 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Foam Bath (HZL) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.912 | 3 | 0.261 | 18.6 | | | Severe | Severe | Gettings et al. (1996) |
| Gel Cleanser (HZE) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.194 | 3 | 0.048 | 3.1 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Hand Soap (HZU) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.293 | 3 | 0.09 | 5.5 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Liquid Soap No. 2 (HZW) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.352 | 3 | 0.1 | 5.6 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Liquid Soap No. 1 (HZB) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.199 | 3 | 0.024 | 2.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Mild Shampoo (HZJ) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.05 | 3 | 0.025 | 0.1 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Polishing Scrub (HZT) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | -0.001 | 3 | 0.001 | 3.7 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 1 (HZC) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.957 | 3 | 0.306 | 30.0 | | | Severe | Severe | Gettings et al. (1996) |
| Shampoo No. 2 (HZX) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.705 | 3 | 0.289 | 14.0 | | | Severe | Severe | Gettings et al. (1996) |
| Shampoo No. 3 (HZM) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.214 | 3 | 0.049 | 4.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 4 (HZV) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.268 | 3 | 0.045 | 8.4 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 5 (HZD) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.241 | 3 | 0.08 | 2.7 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 6 (HZN) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.267 | 3 | 0.076 | 4.5 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 7 (HZA) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.406 | 3 | 0.156 | 6.6 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 8 (HZG) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.197 | 3 | 0.058 | 2.7 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shower Gel (HZS) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 1.548 | 3 | 0.093 | 35.9 | | | Severe | Severe | Gettings et al. (1996) |
| Skin Cleanser (HZI) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.769 | 3 | 0.036 | 15.8 | | | Severe | Severe | Gettings et al. (1996) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 1 (1) | 4.3 | 3 | 2.1 | 0.037 | 3 | 0.036 | 4.9 | 3 | 2.4 | Mild | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 1 (2) | 5.0 | 3 | 1.2 | 0.059 | 3 | 0.031 | 5.9 | 3 | 1.4 | Mild | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 2 (1) | 1.6 | 3 | 1.2 | 0.153 | 3 | 0.059 | 3.9 | 3 | 1.8 | Mild | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 2 (2) | 2.0 | 3 | 0.6 | 0.107 | 3 | 0.044 | 3.6 | 3 | 1 | Mild | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 3 (1) | 3.7 | 3 | 0.6 | 0.100 | 3 | 0.033 | 5.2 | 3 | 0.6 | Mild | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 3 (2) | 4.3 | 3 | 0.6 | 0.158 | 3 | 0.07 | 6.7 | 3 | 1.5 | Mild | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (1) | 84.0 | 3 | 3.8 | 7.408 | 3 | 0.903 | 195.2 | 3 | 11.3 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (2) | 85.6 | 3 | 3.2 | 3.305 | 3 | 0.225 | 135.2 | 3 | 5.2 | Very severe | | Southee (1998) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|-----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|----------------|
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (3) | 82.0 | 3 | 1.7 | 3.729 | 3 | 0.25 | 137.9 | 3 | 2.3 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (4) | 85.0 | 3 | 5.2 | 4.766 | 3 | 1.132 | 156.5 | 3 | 18.6 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (5) | 87.7 | 3 | 1.7 | 3.354 | 3 | 0.108 | 138.0 | 3 | 0.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (6) | 91.7 | 3 | 7.0 | 5.67 | 3 | 1.096 | 176.8 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (7) | 98.3 | 3 | 2.6 | 5.645 | 3 | 0.523 | 183.0 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (8) | 87.7 | 3 | 2.9 | 5.848 | 3 | 0.581 | 175.4 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (1) | 88.0 | 3 | 7.5 | 4.426 | 3 | 0.623 | 154.4 | 3 | 11.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (2) | 94.6 | 3 | 10.4 | 4.148 | 3 | 0.662 | 156.9 | 3 | 18.6 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (3) | 87.0 | 3 | 7.5 | 4.252 | 3 | 0.069 | 150.8 | 3 | 7.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (4) | 93.0 | 3 | 3.0 | 4.278 | 3 | 1.058 | 157.2 | 3 | 18.0 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (5) | 98.3 | 3 | 2.3 | 3.972 | 3 | 0.360 | 157.9 | 3 | 3.4 | Very severe | Very Severe | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (6) | 95.7 | 3 | 5.0 | 4.129 | 3 | 0.581 | 157.0 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (7) | 98.0 | 3 | 5.1 | 4.144 | 3 | 0.232 | 160.2 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (1) | 96.7 | 3 | 2.0 | 4.015 | 3 | 1.011 | 156.9 | 3 | 17.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (2) | 92.6 | 3 | 11.8 | 4.719 | 3 | 1.547 | 163.4 | 3 | 16.2 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (3) | 105.0 | 3 | 6.1 | 4.316 | 3 | 0.320 | 169.7 | 3 | 10.2 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (4) | 95.3 | 3 | 4.0 | 4.497 | 3 | 1.007 | 162.8 | 3 | 11.4 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (5) | 92.3 | 3 | 7.2 | 3.948 | 3 | 0.231 | 151.6 | 3 | 7.7 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (6) | 93.7 | 3 | 4.9 | 4.624 | 3 | 1.708 | 163.1 | 3 | 22.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (7) | 100.7 | 3 | 2.5 | 4.473 | 3 | 0.619 | 167.8 | 3 | 7.8 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (8) | 96.7 | 3 | 2.0 | 9.016 | 3 | 1.011 | 156.9 | 3 | 17.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (9) | 97.3 | 3 | 5.1 | 4.183 | 3 | 0.514 | 160.0 | 3 | 8.2 | Very severe | | Southee (1998) |
| Butyl cellulosolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 1 (1) | 39 | 3 | 7.8 | 4.625 | 3 | 0.471 | 108.3 | 3 | 12.9 | Very severe | | Southee (1998) |
| Butyl cellulosolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 1 (2) | 43 | 3 | 4.0 | 4.589 | 3 | 0.418 | 111.8 | 3 | 5.5 | Very severe | | Southee (1998) |
| Butyl cellulosolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 2 (1) | 29.6 | 3 | 1.5 | 4.213 | 3 | 0.78 | 92.8 | 3 | 13 | Very severe | Very Severe | Southee (1998) |
| Butyl cellulosolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 2 (2) | 31.3 | 3 | 2.3 | 4.526 | 3 | 0.864 | 99.2 | 3 | 10.7 | Very severe | | Southee (1998) |
| Butyl cellulosolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 3 (1) | 37.7 | 3 | 1.0 | 3.813 | 3 | 0.933 | 94.9 | 3 | 13.8 | Very severe | | Southee (1998) |
| Butyl cellulosolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 3 (2) | 37.7 | 3 | 6.1 | 4.031 | 3 | 1.206 | 98.2 | 3 | 21.6 | Very severe | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 1 (1) | 53.7 | 3 | 4.6 | 0.012 | 3 | 0.012 | 53.9 | 3 | 4.9 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 1 (2) | 47.7 | 3 | 3.5 | 0.002 | 3 | 0.02 | 47.7 | 3 | 3.4 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 2 (1) | 46.3 | 3 | 3.2 | 0.05 | 3 | 0.021 | 47.1 | 3 | 3.1 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 2 (2) | 46.4 | 3 | 2.9 | 0.058 | 3 | 0.014 | 47.2 | 3 | 2.9 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 3 (1) | 42 | 3 | 4.5 | 0.013 | 3 | 0.016 | 42.2 | 3 | 4.3 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 95 | 3 (2) | 41.3 | 3 | 4.0 | 0.035 | 3 | 0.006 | 41.8 | 3 | 3.9 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (1) | 17.6 | 3 | 2.3 | 1.265 | 3 | 0.252 | 36.6 | 3 | 6.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (2) | 16.4 | 3 | 5.5 | 1.415 | 3 | 0.389 | 37.6 | 3 | 10.8 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (3) | 13.7 | 3 | 1.5 | 1.062 | 3 | 0.322 | 29.6 | 3 | 6.4 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (4) | 12.7 | 3 | 1.0 | 1.933 | 3 | 0.397 | 41.7 | 3 | 5.8 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (5) | 14.7 | 3 | 2.1 | 1.125 | 3 | 0.162 | 31.5 | 3 | 4.5 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (6) | 12.7 | 3 | 14.9 | 1.995 | 3 | 0.035 | 42.6 | | | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (7) | 18.7 | 3 | 1.5 | 2.445 | 3 | 0.733 | 55.4 | | | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (1) | 13.3 | 3 | 1.0 | 2.626 | 3 | 0.909 | 52.7 | 3 | 12.8 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (2) | 17.0 | 3 | 2.3 | 2.504 | 3 | 0.703 | 54.5 | 3 | 8.3 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (3) | 16.3 | 3 | 4.9 | 3.025 | 3 | 0.699 | 61.7 | 3 | 7.8 | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (4) | 17.3 | 3 | 1.5 | 2.857 | 3 | 0.250 | 60.2 | 3 | 4.9 | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (5) | 14.7 | 3 | 2.1 | 2.636 | 3 | 0.427 | 54.2 | 3 | 5.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (6) | 17.6 | 3 | 0.6 | 3.718 | 3 | 0.798 | 73.4 | | | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (7) | 15.0 | 3 | 2.6 | 3.267 | 3 | 0.545 | 64.0 | | | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (8) | 13.0 | 3 | 0.6 | 2.561 | 3 | 0.867 | 51.4 | | | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (1) | 16.6 | 3 | 2.1 | 2.027 | 3 | 1.026 | 47.0 | 3 | 14.3 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (2) | 18.0 | 3 | 2.9 | 1.831 | 3 | 0.061 | 45.4 | 3 | 2.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (3) | 19.3 | 3 | 2.6 | 1.673 | 3 | 0.071 | 44.4 | 3 | 3.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (4) | 22.0 | 3 | 2.6 | 1.583 | 3 | 0.426 | 45.7 | 3 | 8.5 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (5) | 18.6 | 3 | 1.5 | 2.395 | 3 | 0.380 | 54.6 | 3 | 4.5 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (6) | 17.0 | 3 | 1.2 | 1.853 | 3 | 0.268 | 44.8 | 3 | 5.1 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (7) | 19.3 | 3 | 3.8 | 1.527 | 3 | 0.344 | 42.2 | 3 | 8.8 | Moderate | | Southee (1998) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------------|----------|-------------|-----------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|----------------|
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 1 (1) | 0.6 | 3 | 0.6 | -0.005 | 3 | 0.002 | 0.6 | 3 | 0.6 | Mild | Nonirritant | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 1 (2) | 0.3 | 3 | 1.0 | -0.003 | 3 | 0.002 | 0.3 | 3 | 1.0 | Mild | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 2 (1) | 0.6 | 3 | 0.6 | 0.012 | 3 | 0.007 | 0.8 | 3 | 0.6 | Nonirritant | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 2 (2) | 0.7 | 3 | 0.6 | 0.008 | 3 | 0.009 | 0.8 | 3 | 0.7 | Nonirritant | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 3 (1) | 1.0 | 3 | 0.6 | -0.003 | 3 | 0.005 | 1.0 | 3 | 0.6 | Nonirritant | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 3 (2) | 0.7 | 3 | 0.0 | 0.007 | 3 | 0.011 | 0.8 | 3 | 0.2 | Nonirritant | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 1 (1) | 13.3 | 3 | 2.0 | 0.654 | 3 | 0.273 | 23.1 | 3 | 5.9 | Mild | Moderate | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 1 (2) | 9.7 | 3 | 4.2 | 0.499 | 3 | 0.109 | 17.2 | 3 | 5.8 | Mild | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 2 (1) | 13.7 | 3 | 3.2 | 1.398 | 3 | 0.601 | 34.6 | 3 | 12.1 | Moderate | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 2 (2) | 13.0 | 3 | 4.4 | 1.743 | 3 | 0.871 | 39.1 | 3 | 16.4 | Moderate | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 3 (1) | 17.3 | 3 | 1.0 | 0.958 | 3 | 0.100 | 31.7 | 3 | 2.3 | Moderate | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 3 (2) | 17.7 | 3 | 2.1 | 0.818 | 3 | 0.607 | 29.9 | 3 | 11.2 | Moderate | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (1) | 91.3 | 3 | 2.1 | 3.379 | 3 | 0.106 | 142.0 | 3 | 3.0 | Very severe | Very Severe | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (2) | 88.0 | 3 | 7.5 | 3.306 | 3 | 0.597 | 137.6 | 3 | 6.8 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (3) | 73.7 | 3 | 10.1 | 2.565 | 3 | 1.063 | 112.2 | 3 | 24.7 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (4) | 86.0 | 3 | 9.6 | 3.006 | 3 | 1.078 | 131.1 | 3 | 6.7 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (5) | 97.0 | 3 | 15.5 | 3.241 | 3 | 0.233 | 145.6 | 3 | 12.0 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (6) | 115.3 | 3 | 9.1 | 3.150 | 3 | 0.181 | 162.6 | 3 | | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (7) | 70.3 | 3 | 4.5 | 3.681 | 3 | 0.691 | 125.5 | 3 | | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (1) | 85.7 | 3 | 9.8 | 3.490 | 3 | 0.309 | 138.1 | 3 | 13.0 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (2) | 88.0 | 3 | 13.0 | 3.471 | 3 | 0.381 | 140.1 | 3 | 11.9 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (3) | 86.3 | 3 | 6.0 | 3.240 | 3 | 0.651 | 134.9 | 3 | 9.4 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (4) | 92.3 | 3 | 7.9 | 4.324 | 3 | 1.048 | 157.2 | 3 | 12.5 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (5) | 88.0 | 3 | 16.7 | 3.308 | 3 | 0.695 | 137.6 | 3 | 6.8 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (6) | 97.3 | 3 | 12.9 | 3.709 | 3 | 0.866 | 152.9 | | | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (7) | 100.0 | 3 | 9.1 | 3.316 | 3 | 0.183 | 148.7 | | | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (1) | 83.0 | 3 | 14.8 | 3.774 | 3 | 0.828 | 139.6 | 3 | 26.0 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (2) | 91.7 | 3 | 9.3 | 3.232 | 3 | 0.702 | 140.1 | 3 | 18.9 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (3) | 80.4 | 3 | 3.1 | 2.907 | 3 | 0.642 | 124.0 | 3 | 6.9 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (4) | 82.3 | 3 | 2.1 | 3.093 | 3 | 0.635 | 128.7 | 3 | 8.2 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (5) | 76.6 | 3 | 8.3 | 3.118 | 3 | 0.464 | 123.4 | 3 | 14.8 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (6) | 76.3 | 3 | 8.7 | 2.862 | 3 | 0.292 | 121.2 | 3 | 4.6 | Very severe | | Southee (1998) |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (7) | 77.3 | 3 | 2.0 | 3.602 | 3 | 0.413 | 131.3 | 3 | 8.2 | Very severe | Southee (1998) | |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 1 (1) | 47.6 | 3 | 5.9 | 1.706 | 3 | 0.679 | 73.3 | 3 | 15.9 | Severe | Severe | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 1 (2) | 48 | 3 | 2.1 | 1.32 | 3 | 0.303 | 67.8 | 3 | 5.7 | Severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 2 (1) | 61 | 3 | 2.9 | 3.183 | 3 | 0.86 | 108.7 | 3 | 11.9 | Very severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 2 (2) | 62 | 3 | 6.7 | 2.648 | 3 | 1.074 | 101.7 | 3 | 21.1 | Very severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 3 (1) | 55.7 | 3 | 5.0 | 0.972 | 3 | 0.479 | 70.2 | 3 | 3.5 | Severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 3 (2) | 54.4 | 3 | 1.5 | 1.278 | 3 | 0.359 | 73.5 | 3 | 6.4 | Severe | | Southee (1998) |
| Parafluoraniine | 371-40-4 | liquid | water insoluble | 100% | 99 | 1 (1) | 15.3 | 3 | 1.0 | 1.044 | 3 | 0.413 | 31 | 3 | 7.2 | Moderate | Moderate | Southee (1998) |
| Parafluoraniine | 371-40-4 | liquid | water insoluble | 100% | 99 | 1 (2) | 16.3 | 3 | 3.5 | 1.243 | 3 | 0.287 | 35 | 3 | 6.2 | Moderate | | Southee (1998) |
| Parafluoraniine | 371-40-4 | liquid | water insoluble | 100% | 99 | 2 (1) | 13.3 | 3 | 2.1 | 1.663 | 3 | 0.372 | 38.3 | 3 | 7.5 | Moderate | | Southee (1998) |
| Parafluoraniine | 371-40-4 | liquid | water insoluble | 100% | 99 | 2 (2) | 16.0 | 3 | 4.6 | 1.432 | 3 | 0.531 | 37.5 | 3 | 12.2 | Moderate | | Southee (1998) |
| Parafluoraniine | 371-40-4 | liquid | water insoluble | 100% | 99 | 3 (1) | 11.0 | 3 | 1.0 | 0.738 | 3 | 0.154 | 22.1 | 3 | 2.7 | Mild | | Southee (1998) |
| Parafluoraniine | 371-40-4 | liquid | water insoluble | 100% | 99 | 3 (2) | 15.4 | 3 | 1.2 | 0.7 | 3 | 0.151 | 28.9 | 3 | 3.4 | Moderate | | Southee (1998) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 1 (1) | 10.7 | 3 | 2.6 | 0.034 | 3 | 0.044 | 11.2 | 3 | 3.2 | Mild | Mild | Southee (1998) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 1 (2) | 7.0 | 3 | 0.6 | 0.023 | 3 | 0.026 | 7.4 | 3 | 0.6 | Mild | | Southee (1998) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 2 (1) | 5.0 | 3 | 1.7 | 0.013 | 3 | 0.012 | 5.2 | 3 | 1.9 | Mild | | Southee (1998) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 2 (2) | 3.4 | 3 | 1.5 | 0.016 | 3 | 0.015 | 3.6 | 3 | 1.6 | Mild | | Southee (1998) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 3 (1) | 7.3 | 3 | 4.4 | 0.028 | 3 | 0.014 | 7.7 | 3 | 4.2 | Mild | | Southee (1998) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 3 (2) | 5.6 | 3 | 0.6 | 0.04 | 3 | 0.051 | 6.2 | 3 | 0.7 | Mild | | Southee (1998) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Reference

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference | |
|-----------------------------------|-----------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|----------------|----------------------------|
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 1 (1) | 176.7 | 3 | 31.4 | 4.551 | 3 | 1.019 | 245.0 | 3 | 28.7 | Very severe | Very Severe | Southee (1998) | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 1 (2) | 172.0 | 3 | 1.7 | 3.676 | 3 | 0.201 | 227.1 | 3 | 3.4 | Very severe | | Southee (1998) | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 2 (1) | 170.0 | 3 | 20.7 | 4.755 | 3 | 0.586 | 241.3 | 3 | 11.9 | Very severe | | Southee (1998) | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 2 (2) | 166.7 | 3 | 12.6 | 4.590 | 3 | 0.405 | 235.5 | 3 | 7.3 | Very severe | | Southee (1998) | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 3 (1) | 124.0 | 3 | 13.7 | 4.604 | 3 | 0.380 | 193.1 | 3 | 19.0 | Very severe | | Southee (1998) | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 3 (2) | 165.3 | 3 | 21.2 | 3.303 | 3 | 0.388 | 214.9 | 3 | 15.5 | Very severe | | Southee (1998) | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 1 (1) | -0.8 | 3 | 0.0 | 0.408 | 3 | 0.024 | 5.4 | 3 | 0.4 | Mild | | Southee (1998) | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 1 (2) | 0.0 | 3 | 0.6 | 0.348 | 3 | 0.182 | 5.2 | 3 | 2.7 | Mild | | Southee (1998) | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 2 (1) | 0.7 | 3 | 1.0 | 1.012 | 3 | 0.461 | 15.9 | 3 | 7.6 | Mild | | Southee (1998) | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 2 (2) | 1.0 | 3 | 0.6 | 1.086 | 3 | 0.083 | 17.3 | 3 | 1.7 | Mild | | Southee (1998) | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 3 (1) | 0.7 | 3 | 0.6 | 0.518 | 3 | 0.11 | 8.7 | 3 | 1.4 | Mild | Southee (1998) | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 3 (2) | 1.3 | 3 | 0.6 | 0.283 | 3 | 0.064 | 5.6 | 3 | 1.5 | Mild | Southee (1998) | | |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 1 (1) | 8.4 | 3 | 1.2 | 0.128 | 3 | 0.16 | 10.3 | 3 | 1.4 | Mild | Nonirritant | Southee (1998) | |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 1 (2) | 3.4 | 3 | 0.6 | 0.071 | 3 | 0.03 | 4.4 | 3 | 1.0 | Mild | | Southee (1998) | |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 2 (1) | -1.0 | 3 | 1.7 | 0.05 | 3 | 0.054 | -0.3 | 3 | 1.5 | Nonirritant | | Southee (1998) | |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 2 (2) | -1.0 | 3 | 2.1 | 0.055 | 3 | 0.012 | -0.1 | 3 | 2.1 | Nonirritant | | Southee (1998) | |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 3 (1) | 2.0 | 3 | 0.6 | 0.051 | 3 | 0.032 | 2.7 | 3 | 0.9 | Nonirritant | | Southee (1998) | |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 3 (2) | 2.3 | 3 | 1.0 | 0.15 | 3 | 0.022 | 4.5 | 3 | 1.3 | Mild | | Southee (1998) | |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 1 (1) | 3.3 | 3 | 1.0 | 0.023 | 3 | 0.004 | 3.7 | 3 | 1.1 | Mild | | Southee (1998) | |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 1 (2) | 1.3 | 3 | 1.0 | 0.035 | 3 | 0.006 | 1.8 | 3 | 1.0 | Mild | | Southee (1998) | |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 2 (1) | 1.4 | 3 | 0.6 | 0.298 | 3 | 0.123 | 5.8 | 3 | 2.4 | Mild | | Southee (1998) | |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 2 (2) | 0.0 | 3 | 0.6 | 0.226 | 3 | 0.086 | 3.4 | 3 | 1.0 | Mild | | Southee (1998) | |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 3 (1) | 2.7 | 3 | 1.0 | 0.023 | 3 | 0.009 | 3.0 | 3 | 1.1 | Nonirritant | Southee (1998) | | |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 3 (2) | 1.4 | 3 | 0.6 | 0.038 | 3 | 0.013 | 1.9 | 3 | 0.6 | Nonirritant | Southee (1998) | | |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 1 (1) | 0.3 | 3 | 0.0 | 0.003 | 3 | 0.012 | 0.3 | 3 | 0.2 | Mild | Nonirritant | Southee (1998) | |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 1 (2) | 0.0 | 3 | 1.5 | 0.004 | 3 | 0.01 | 0.0 | 3 | 1.6 | Mild | | Southee (1998) | |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 2 (1) | 0.4 | 3 | 0.6 | 0.001 | 3 | 0.002 | 0.4 | 3 | 0.6 | Mild | | Southee (1998) | |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 2 (2) | 0.4 | 3 | 0.6 | 0.003 | 3 | 0.008 | 0.4 | 3 | 0.5 | Nonirritant | | Southee (1998) | |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 3 (1) | 0.0 | 3 | 0.0 | 0.022 | 3 | 0.018 | 0.3 | 3 | 0.3 | Nonirritant | | Southee (1998) | |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 3 (2) | 0.0 | 3 | 1.0 | 0.001 | 3 | 0.022 | 0.0 | 3 | 1.3 | Nonirritant | | Southee (1998) | |
| 1-1 (#1) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 83.6 | - | - | Severe | | Severe | Swanson and Harbell (2000) |
| 1-2 (#2) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 12.4 | - | - | Mild | | | Swanson and Harbell (2000) |
| 1-3 (#3) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 29.6 | - | - | Moderate | | | Swanson and Harbell (2000) |
| 2-4 (#4) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 7.3 | - | - | Mild | | | Swanson and Harbell (2000) |
| 2-7 (#7) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 21.4 | - | - | Moderate | Swanson and Harbell (2000) | | |
| 2-8 (#8) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 31.8 | - | - | Moderate | Swanson and Harbell (2000) | | |
| Benchmark-Group 1 (#12) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 60.1 | - | - | Severe | Swanson and Harbell (2000) | | |
| Benchmark-Group 2 (#13) | - | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 60.1 | - | - | Severe | Swanson and Harbell (2000) | | |
| Ethanol (#14) | 64-17-5 | liquid | n.p. | 100% | n.p. | - | - | - | - | - | - | - | 52.7 | - | - | Moderate | Swanson and Harbell (2000) | | |
| Toilet Bowl Cleaner (#1) | - | liquid | n.p. | 100% | n.p. | - | 8.700 | 5 | - | 0.323 | 5 | - | 13.5 | 5 | - | Mild | Swanson et al. (1995) | | |
| Toilet Bowl Cleaner (#4) | - | liquid | n.p. | 100% | n.p. | - | 10.5 | 5 | - | 0.303 | 5 | - | 15 | 5 | - | Mild | Swanson et al. (1995) | | |
| All Purpose Cleaner (#5) | - | liquid | n.p. | 100% | n.p. | - | 102.5 | 5 | - | 1.252 | 5 | - | 121.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| Bathroom Cleaner (#6) | - | liquid | n.p. | 100% | n.p. | - | 64 | 5 | - | 0.95 | 5 | - | 78.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| All Purpose Cleaner (#7) | - | liquid | n.p. | 100% | n.p. | - | 348.1 | 5 | - | 3.013 | 5 | - | 393.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| Pot and Pan Cleaner (#8) | - | liquid | n.p. | 100% | n.p. | - | -1.8 | 5 | - | 0.078 | 5 | - | -0.6 | 5 | - | Nonirritant | Swanson et al. (1995) | | |
| Heavy Duty Cleaner/Degreaser (#9) | - | liquid | n.p. | 100% | n.p. | - | 315.4 | 5 | - | 2.619 | 5 | - | 354.7 | 5 | - | Severe | Swanson et al. (1995) | | |
| Floor Cleaner (#10) | - | liquid | n.p. | 100% | n.p. | - | 45.2 | 5 | - | 1.675 | 5 | - | 70.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| General Cleaner (#11) | - | liquid | n.p. | 100% | n.p. | - | 77.9 | 5 | - | 0.359 | 5 | - | 83.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| General Cleaner (#12) | - | liquid | n.p. | 100% | n.p. | - | 95.5 | 5 | - | 1.197 | 5 | - | 113.5 | 5 | - | Severe | Swanson et al. (1995) | | |
| Cleaner/Degreaser (#13) | - | liquid | n.p. | 100% | n.p. | - | 314.3 | 5 | - | 2.623 | 5 | - | 353.6 | 5 | - | Severe | Swanson et al. (1995) | | |
| Floor Stripper (#14) | - | liquid | n.p. | 100% | n.p. | - | 122.5 | 5 | - | 2.318 | 5 | - | 157.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| Heavy Duty Cleaner (#15) | - | liquid | n.p. | 100% | n.p. | - | 323.3 | 5 | - | 2.24 | 5 | - | 357.1 | 5 | - | Severe | Swanson et al. (1995) | | |
| Degreaser (#16) | - | liquid | n.p. | 100% | n.p. | - | 225.4 | 5 | - | 2.022 | 5 | - | 255.7 | 5 | - | Severe | Swanson et al. (1995) | | |
| Floor Stripper (#17) | - | liquid | n.p. | 100% | n.p. | - | 180.5 | 5 | - | 2.38 | 5 | - | 216.2 | 5 | - | Severe | Swanson et al. (1995) | | |
| Floor Stripper (#18) | - | liquid | n.p. | 100% | n.p. | - | 407.1 | 5 | - | 2.481 | 5 | - | 444.3 | 5 | - | Severe | Swanson et al. (1995) | | |
| Glass Cleaner (#19) | - | liquid | n.p. | 100% | n.p. | - | 98.3 | 5 | - | 2.499 | 5 | - | 135.8 | 5 | - | Severe | Swanson et al. (1995) | | |

***In Vitro* Data for Substances Tested in the BCOP Assay: Sorted by Reference**

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₉₀ | n | SD - OD ₂₉₀ | <i>In Vitro</i> Score ¹ | n | SD - Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | Reference |
|--------------------------|-------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|------------------------------------|---|------------|---|---------------------------------------|-----------------------|
| Metal Cleaner (#20) | - | liquid | n.p. | 100% | n.p. | - | 344.2 | 5 | | 3.182 | 5 | | 391.9 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Floor Cleaner (#2) | - | liquid | n.p. | 100% | n.p. | - | -2.1 | 5 | | 0.119 | 5 | | -0.3 | 5 | | Nonirritant | Nonirritant | Swanson et al. (1995) |
| Meat Room Degreaser (#3) | - | liquid | n.p. | 100% | n.p. | - | 99.3 | 5 | | 2.733 | 5 | | 140.3 | 5 | | Severe | Severe | Swanson et al. (1995) |

Abbreviations: CASRN=Chemical Abstract Services Registry Number; n=number of replicates; n.s.=not applicable; n.p.=not provided; OD=optical density; SD=standard deviation

¹*In Vitro* Score = mean opacity score + (15 x mean OD₂₉₀ value) represents the BCOP ocular irritancy classification assigned for each chemical in the study for each test for a specific substance

²*In Vitro* Classification represents the BCOP ocular irritancy classification assigned for each independent test result, according to the classification system used

³Consensus call represents the overall BCOP ocular irritancy classification assigned for each chemical in the study based on the majority of ocular irritancy classification calls. When there was an even number of different irritancy classifications for a test substance, the more severe irritancy classification was used for the overall classification for that test substance.

*solubility uncertain

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Appendix C2

BCOP Data Sorted by Substance Name

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In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--|------------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|----------------------------|
| 1-1 (#1) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 83.6 | | | Severe | Severe | Swanson and Harbell (2000) |
| 1-2 (#2) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 12.4 | | | Mild | Mild | Swanson and Harbell (2000) |
| 1-3 (#3) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 29.6 | | | Moderate | Moderate | Swanson and Harbell (2000) |
| 2-4 (#4) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 7.3 | | | Mild | Mild | Swanson and Harbell (2000) |
| 2-7 (#7) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 21.4 | | | Moderate | Moderate | Swanson and Harbell (2000) |
| 2-8 (#8) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 31.8 | | | Moderate | Moderate | Swanson and Harbell (2000) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 1 | 90.3 | | | 3.676 | | | 145.5 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 2 | 83.7 | | | 2.389 | | | 119.5 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 3 | 55.7 | | | 4.315 | | | 120.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 4 | 94.33 | | | 2.492 | | | 131.72 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | 99 | 5 | 69.3 | | | 1.942 | | | 98.4 | | | Very severe | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | water soluble | 100% | n.p. | - | 1.38 | | | 0.653 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Alkyl phosphoric acid ester/amine salt | - | liquid | moderate | 100% | n.p. | - | 37.7 | | | 3.577 | | | 91.3 | | | Severe | Severe | Bailey et al. (2004) |
| All Purpose Cleaner (#5) | - | liquid | n.p. | 100% | n.p. | - | 102.5 | 5 | | 1.252 | 5 | | 121.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| All Purpose Cleaner (#7) | - | liquid | n.p. | 100% | n.p. | - | 348.1 | 5 | | 3.013 | 5 | | 393.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 156 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 138 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 232 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 156 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 132 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 191 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 190 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 166 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 9 | 94.1 | 6 | 18.9 | 1.948 | 6 | 0.455 | 123 | 6 | 14.4 | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 101 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 200 | | | Severe | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 9 | 9.7 | 6 | 2.3 | 0.012 | 6 | 0.007 | 10 | 6 | 2.3 | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 9 | 10.9 | 6 | 1.4 | 0.144 | 6 | 0.188 | 13 | 6 | 2.5 | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 1 | 6.3 | | | 0.132 | | | 8.3 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 2 | 6 | | | 0.026 | | | 6.4 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 3 | 6 | | | 0.079 | | | 7.2 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 4 | 11.34 | | | 0.698 | | | 21.82 | | | Mild | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | water soluble | 20% | >99.9 | 5 | 4.7 | | | 0.034 | | | 5.2 | | | Mild | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--|-----------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|----------------------------|
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 1 (1) | 4.3 | 3 | 2.1 | 0.037 | 3 | 0.036 | 4.9 | 3 | 2.4 | Mild | Mild | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 1 (2) | 5.0 | 3 | 1.2 | 0.059 | 3 | 0.031 | 5.9 | 3 | 1.4 | Mild | Mild | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 2 (1) | 1.6 | 3 | 1.2 | 0.153 | 3 | 0.059 | 3.9 | 3 | 1.8 | Mild | Mild | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 2 (2) | 2.0 | 3 | 0.6 | 0.107 | 3 | 0.044 | 3.6 | 3 | 1 | Mild | Mild | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 3 (1) | 3.7 | 3 | 0.6 | 0.100 | 3 | 0.033 | 5.2 | 3 | 0.6 | Mild | Mild | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | n.p. | 100% | n.p. | 3 (2) | 4.3 | 3 | 0.6 | 0.158 | 3 | 0.07 | 6.7 | 3 | 1.5 | Mild | Mild | Southee (1998) |
| Amway all fabric bleach | - | n.p. | n.p. | 100% | n.p. | - | 0.400 | | | 1.435 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway automatic dishwashing compound for soft water | - | n.p. | n.p. | 100% | n.p. | - | 2.249 | | | 1.381 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway automatic dishwashing compound, standard formula | - | n.p. | n.p. | 100% | n.p. | - | 0.683 | | | 0.477 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway concrete floor cleaner | - | n.p. | n.p. | 100% | n.p. | - | 2.205 | | | 1.839 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway Dish Drops dishwashing liquid | - | n.p. | n.p. | 100% | n.p. | - | 0.290 | | | 0.493 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway dry chlorine bleach | - | n.p. | n.p. | 100% | n.p. | - | 0.204 | | | 0.311 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway fabric softener | - | n.p. | n.p. | 100% | n.p. | - | 0.089 | | | 0.013 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway Kool Wash delicate fabric detergent | - | n.p. | n.p. | 100% | n.p. | - | 0.039 | | | 0.326 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway LOC all purpose cleaner | - | n.p. | n.p. | 100% | n.p. | - | 0.193 | | | 0.050 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway prewash liquid | - | liquid | n.p. | 100% | n.p. | - | 0.142 | | | 0.079 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway Pursue disinfectant cleaner | - | n.p. | n.p. | 100% | n.p. | - | 1.437 | | | 0.763 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Amway Redu dye stain remover | - | n.p. | n.p. | 100% | n.p. | - | 0.138 | | | 0.028 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Amway SA8 laundry liquid | - | liquid | n.p. | 100% | n.p. | - | 0.032 | | | 0.179 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Amway SA8 limited phos laundry powder | - | solid | n.p. | 100% | n.p. | - | 0.415 | | | 0.285 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 1 | | | | | | | -2 | | | Nonirritant | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 3 | | | | | | | -3 | | | Nonirritant | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 6 | | | | | | | -1 | | | Nonirritant | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 9 | 1.4 | 6 | 1.2 | 0.003 | 6 | 0.007 | 1 | 6 | 1.3 | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | Mild | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Anti-Dandruff Shampoo (HZY) | - | n.p. | n.p. | 100% | n.p. | - | 0.092 | | | 0.182 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Anti-Dandruff Shampoo (HZY) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.847 | 3 | 0.199 | 20.8 | | | Severe | Severe | Gettings et al. (1996) |
| Aromatic hydrocarbon #1 | - | liquid | negligible | 100% | n.p. | - | 2.7 | | | 0.000 | | | 2.7 | | | Mild | Mild | Bailey et al. (2004) |
| Aromatic hydrocarbon #2 | - | liquid | negligible | 100% | n.p. | - | 4.3 | | | 0.017 | | | 4.6 | | | Mild | Mild | Bailey et al. (2004) |
| Arvl phosphonates | - | liquid | moderate | 100% | n.p. | - | 20.3 | | | 1.399 | | | 41.3 | | | Moderate | Moderate | Bailey et al. (2004) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 1 | 2 | | | -0.011 | | | 1.8 | | | Mild | Mild | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 2 | 1.7 | | | -0.107 | | | 0.1 | | | Mild | Mild | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 3 | 2.7 | | | -0.003 | | | 2.6 | | | Mild | Mild | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 4 | 0.33 | | | 0.03 | | | 0.788 | | | Mild | Mild | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | water soluble | 20% | 100 | 5 | 0 | | | 0.082 | | | 1.2 | | | Mild | Mild | Balls et al. (1995) |
| Baby Shampoo No. 1 (HZP) | - | n.p. | n.p. | 100% | n.p. | - | -0.02 | | | 0.062 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Baby Shampoo No. 1 (HZP) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.261 | 3 | 0.05 | 4.0 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Baby Shampoo No. 2 (HZF) | - | n.p. | n.p. | 100% | n.p. | - | 0.067 | | | 0.265 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Baby Shampoo No. 2 (HZF) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.425 | 3 | 0.082 | 8.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Bathroom Cleaner (#6) | - | liquid | n.p. | 100% | n.p. | - | 64 | 5 | | 0.95 | 5 | | 78.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Benchmark-Group 1 (#12) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 60.1 | | | Severe | Severe | Swanson and Harbell (2000) |
| Benchmark-Group 2 (#13) | - | liquid | n.p. | 100% | n.p. | - | | | | | | | 60.1 | | | Severe | Severe | Swanson and Harbell (2000) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (1) | 84.0 | 3 | 3.8 | 7.408 | 3 | 0.903 | 195.2 | 3 | 11.3 | Very severe | Very severe | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (2) | 85.6 | 3 | 3.2 | 3.305 | 3 | 0.225 | 135.2 | 3 | 5.2 | Very severe | Very severe | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (3) | 82.0 | 3 | 1.7 | 3.729 | 3 | 0.25 | 137.9 | 3 | 2.3 | Very severe | Very severe | Southee (1998) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|-----------|-------------|-----------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (4) | 85.0 | 3 | 5.2 | 4.766 | 3 | 1.132 | 156.5 | 3 | 18.6 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (5) | 87.7 | 3 | 1.7 | 3.354 | 3 | 0.108 | 138.0 | 3 | 0.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (6) | 91.7 | 3 | 7.0 | 5.67 | 3 | 1.096 | 176.8 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (7) | 98.3 | 3 | 2.6 | 5.645 | 3 | 0.523 | 183.0 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 1 (8) | 87.7 | 3 | 2.9 | 5.848 | 3 | 0.581 | 175.4 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (1) | 88.0 | 3 | 7.5 | 4.426 | 3 | 0.623 | 154.4 | 3 | 11.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (2) | 94.6 | 3 | 10.4 | 4.148 | 3 | 0.662 | 156.9 | 3 | 18.6 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (3) | 87.0 | 3 | 7.5 | 4.252 | 3 | 0.069 | 150.8 | 3 | 7.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (4) | 93.0 | 3 | 3.0 | 4.278 | 3 | 1.058 | 157.2 | 3 | 18.0 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (5) | 98.3 | 3 | 2.3 | 3.972 | 3 | 0.360 | 157.9 | 3 | 3.4 | Very severe | Very Severe | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (6) | 95.7 | 3 | 5.0 | 4.129 | 3 | 0.581 | 157.0 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 2 (7) | 98.0 | 3 | 5.1 | 4.144 | 3 | 0.232 | 160.2 | | | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (1) | 96.7 | 3 | 2.0 | 4.015 | 3 | 1.011 | 156.9 | 3 | 17.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (2) | 92.6 | 3 | 11.8 | 4.719 | 3 | 1.547 | 163.4 | 3 | 16.2 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (3) | 105.0 | 3 | 6.1 | 4.316 | 3 | 0.320 | 169.7 | 3 | 10.2 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (4) | 95.3 | 3 | 4.0 | 4.497 | 3 | 1.007 | 162.8 | 3 | 11.4 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (5) | 92.3 | 3 | 7.2 | 3.948 | 3 | 0.231 | 151.6 | 3 | 7.7 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (6) | 93.7 | 3 | 4.9 | 4.624 | 3 | 1.708 | 163.1 | 3 | 22.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (7) | 100.7 | 3 | 2.5 | 4.473 | 3 | 0.619 | 167.8 | 3 | 7.8 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (8) | 96.7 | 3 | 2.0 | 9.016 | 3 | 1.011 | 156.9 | 3 | 17.1 | Very severe | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | 3 (9) | 97.3 | 3 | 5.1 | 4.183 | 3 | 0.514 | 160.0 | 3 | 8.2 | Very severe | | Southee (1998) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 1 | 59 | | | 3.588 | | | 112.8 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 2 | 37 | | | 3.566 | | | 90.5 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 3 | 34.3 | | | 4.336 | | | 99.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 4 | 22 | | | 2.699 | | | 62.49 | | | Severe | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | surfactant | 1% | 98 | 5 | 38 | | | 2.706 | | | 78.6 | | | Severe | | Balls et al. (1995) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | surfactant | 1% | n.p. | - | 0.970 | | | 0.764 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 1 | 75.3 | | | 4.456 | | | 142.2 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 2 | 79.3 | | | 5.223 | | | 157.7 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 3 | 61.7 | | | 4.142 | | | 123.8 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 4 | 63 | | | 4.967 | | | 137.5 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | 98 | 5 | 74.7 | | | 3.096 | | | 121.1 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | surfactant | 10% | n.p. | - | 1.612 | | | 1.180 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 1 | 126.6 | | | 3.264 | | | 126.6 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 2 | 163.7 | | | 6.599 | | | 163.7 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 3 | 110.7 | | | 3.891 | | | 110.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 4 | 130.41 | | | 4.338 | | | 130.41 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | 98 | 5 | 111.1 | | | 3.117 | | | 111.1 | | | Very severe | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | surfactant | 5% | n.p. | - | 1.332 | | | 0.776 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 128 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 124 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 163 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 106 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 128 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 129 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 142 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 129 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 9 | 84.6 | 6 | 3.3 | 5.42 | 6 | 0.949 | 166 | 6 | 14.5 | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 142 | | | Severe | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 116 | | | Severe | | Gautheron et al. (1994) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 1 | 169.7 | | | 0.218 | | | 173 | | | Very severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 2 | 286.7 | | | 0.134 | | | 288.7 | | | Very severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 3 | 90 | | | 0.073 | | | 91.1 | | | Very severe | Very Severe | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 4 | 147 | | | 0.191 | | | 149.86 | | | Very severe | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | water insoluble | 20% | - | 5 | 141.3 | | | 0.266 | | | 145.3 | | | Very severe | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------|-----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -10 | | | Nonirritant | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 9 | 3.1 | 6 | 2.3 | 0.029 | 6 | 0.014 | 4 | 6 | 2.2 | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 9 | 1.1 | 6 | 0.6 | -0.002 | 6 | 0.008 | 1 | 6 | 0.7 | Mild | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) |
| BRU-35 | 9002-92-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) |
| 4-Bromophenotole | - | n.p. | n.p. | 100% | n.p. | - | 0.079 | | | 0.018 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Bubble Bath (HZK) | - | n.p. | n.p. | 100% | n.p. | - | 0.007 | | | 0.103 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Bubble Bath (HZK) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.956 | 3 | 0.324 | 17.5 | | | Severe | Severe | Gettings et al. (1996) |
| n-Butanol | 71-36-3 | liquid | n.p. | 100% | n.p. | - | 0.414 | | | 0.671 | | | | | | Severe | Severe | Casterton et al. (1996) |
| 2-Butoxyethanol | 111-76-2 | liquid | n.p. | 100% | n.p. | - | 0.394 | | | 1.160 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | n.p. | 1 | 9 | | | 2.7 | | | 49.5 | | | Moderate | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | n.p. | 2 | 7.7 | | | 1.989 | | | 37.5 | | | Moderate | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | n.p. | 3 | 5.7 | | | 2.546 | | | 43.9 | | | Moderate | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | n.p. | 4 | 5 | | | 1.257 | | | 23.86 | | | Mild | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | water insoluble* | 100% | n.p. | 5 | 2.3 | | | 1.051 | | | 18.1 | | | Mild | | Balls et al. (1995) |
| Butyl cellulolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 1 (1) | 39 | 3 | 7.8 | 4.625 | 3 | 0.471 | 108.3 | 3 | 12.9 | Very severe | | Southee (1998) |
| Butyl cellulolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 1 (2) | 43 | 3 | 4.0 | 4.589 | 3 | 0.418 | 111.8 | 3 | 5.5 | Very severe | | Southee (1998) |
| Butyl cellulolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 2 (1) | 29.6 | 3 | 1.5 | 4.213 | 3 | 0.78 | 92.8 | 3 | 13 | Very severe | | Southee (1998) |
| Butyl cellulolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 2 (2) | 31.3 | 3 | 2.3 | 4.526 | 3 | 0.864 | 99.2 | 3 | 10.7 | Very severe | | Southee (1998) |
| Butyl cellulolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 3 (1) | 37.7 | 3 | 1.0 | 3.813 | 3 | 0.933 | 94.9 | 3 | 13.8 | Very severe | | Southee (1998) |
| Butyl cellulolve | 111-76-2 | liquid | n.p. | 100% | n.p. | 3 (2) | 37.7 | 3 | 6.1 | 4.031 | 3 | 1.206 | 98.2 | 3 | 21.6 | Very severe | | Southee (1998) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 1 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 2 | | | | | | | 44 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 3 | | | | | | | 64 | | | Severe | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 4 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 5 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 6 | | | | | | | 30 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 7 | | | | | | | 80 | | | Severe | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 8 | | | | | | | 32 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 9 | 34.2 | 6 | 3.1 | 0.495 | 6 | 0.199 | 42 | 6 | 5 | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 10 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 11 | | | | | | | 35 | | | Moderate | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | water soluble | 100% | n.p. | 12 | | | | | | | 49 | | | Moderate | | Gautheron et al. (1994) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 1 | 37.3 | | | 3.553 | | | 90.6 | | | Very severe | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 2 | 22.7 | | | 0.682 | | | 32.9 | | | Moderate | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 3 | 22 | | | 0.63 | | | 31.5 | | | Moderate | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 4 | 48.67 | | | 2.192 | | | 81.55 | | | Very severe | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference | |
|---------------------------------|----------|-------------|------------------|----------------------|------------|---------|--------------|-------|--------------|------------------------|-------|------------------------|-----------------------------|------|------------|--------------------------------------|---------------------------------------|-------------------------|----------------|
| gamma-Butyrolactone | 96-48-0 | liquid | water soluble | 100% | >99 | 5 | 31.7 | | | 2.357 | | | 67.1 | | | Severe | | Balls et al. (1995) | |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 20% | 90 | 1 | 28 | | -0.008 | | | 27.8 | | | Moderate | | Balls et al. (1995) | |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 20% | 90 | 2 | 26.3 | | 0.055 | | | 27.2 | | | Moderate | | Balls et al. (1995) | |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 20% | 90 | 3 | 34.7 | | 0.007 | | | 34.8 | | | Moderate | Moderate | Balls et al. (1995) | |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 20% | 90 | 4 | 102 | | 0.061 | | | 102.918 | | | Very severe | | Balls et al. (1995) | |
| Captan 90 concentrate | 133-06-2 | solid | water soluble | 20% | 20% | 90 | 5 | 26.3 | | 0.004 | | | 26.4 | | | Moderate | | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 1 | 97.3 | | 0.02 | | | 97.6 | | | Very severe | | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 2 | 96.3 | | 0.116 | | | 98.1 | | | Very severe | | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 3 | 57.3 | | 0.012 | | | 57.5 | | | Severe | Severe | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 4 | 64 | | 0.022 | | | 64.33 | | | Severe | | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 5 | 72 | | 0.128 | | | 73.9 | | | Severe | | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 100% | n.p. | - | 0.331 | | | 0.002 | | | | | | Mild | Mild | Casterton et al. (1996) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 1 (1) | 53.7 | 3 | 4.6 | 0.012 | 3 | 0.012 | 53.9 | 3 | 4.9 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 1 (2) | 47.7 | 3 | 3.5 | 0.002 | 3 | 0.02 | 47.7 | 3 | 3.4 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 2 (1) | 46.3 | 3 | 3.2 | 0.05 | 3 | 0.021 | 47.1 | 3 | 3.1 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 2 (2) | 46.4 | 3 | 2.9 | 0.058 | 3 | 0.014 | 47.2 | 3 | 2.9 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 3 (1) | 42 | 3 | 4.5 | 0.013 | 3 | 0.016 | 42.2 | 3 | 4.3 | Moderate | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | water insoluble* | 20% | 20% | 95 | 3 (2) | 41.3 | 3 | 4.0 | 0.035 | 3 | 0.006 | 41.8 | 3 | 3.9 | Moderate | | Southee (1998) |
| Carboxylic acid amides | - | solid | moderate | 100% | n.p. | - | 10.7 | | | 1.125 | | | 27.5 | | | Moderate | Moderate | Bailey et al. (2004) | |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | n.p. | 98 | 1 | 6.7 | | 0.293 | | | 11 | | | Mild | | Balls et al. (1995) | |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | n.p. | 98 | 2 | 1.7 | | 0.163 | | | 4.1 | | | Mild | | Balls et al. (1995) | |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | n.p. | 98 | 3 | 3 | | 0.606 | | | 12.1 | | | Mild | Mild | Balls et al. (1995) | |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | n.p. | 98 | 4 | 3.33 | | 0.066 | | | 4.33 | | | Mild | | Balls et al. (1995) | |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0.10% | n.p. | 98 | 5 | 6.3 | | 0.543 | | | 14.5 | | | Mild | | Balls et al. (1995) | |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | surfactant | 0% | n.p. | - | 0.082 | | | 0.089 | | | | | | Mild | Mild | Casterton et al. (1996) | |
| Cetylpyridinium bromide (1%) | 140-72-7 | liquid | surfactant | 1% | n.p. | - | 0.425 | | | 0.364 | | | | | | Moderate | Moderate | Casterton et al. (1996) | |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | 98 | 1 | 22.7 | | 1.389 | | | 43.5 | | | Moderate | | Balls et al. (1995) | |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | 98 | 2 | 27.7 | | 4.128 | | | 89.6 | | | Very severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | 98 | 3 | 24.7 | | 3.759 | | | 81 | | | Very severe | Very Severe | Balls et al. (1995) | |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | 98 | 4 | 17 | | 3.97 | | | 71.22 | | | Severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | 98 | 5 | 23 | | 3.58 | | | 76.7 | | | Severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | surfactant | 10% | n.p. | - | 0.855 | | | 0.705 | | | | | | Severe | Severe | Casterton et al. (1996) | |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | 98 | 1 | 31.7 | | 2.705 | | | 72.2 | | | Severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | 98 | 2 | 38.3 | | 3.195 | | | 86.3 | | | Very severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | 98 | 3 | 18.3 | | 3.015 | | | 63.6 | | | Severe | Severe | Balls et al. (1995) | |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | 98 | 4 | 25.33 | | 2.892 | | | 68.72 | | | Severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | 98 | 5 | 34 | | 2.097 | | | 65.4 | | | Severe | | Balls et al. (1995) | |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | surfactant | 6% | n.p. | - | 0.908 | | | 0.775 | | | | | | Severe | Severe | Casterton et al. (1996) | |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 1 | 141 | | | 0.399 | | | 147 | | | Very severe | | Balls et al. (1995) | |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 2 | 124 | | | -0.071 | | | 122.9 | | | Very severe | | Balls et al. (1995) | |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 3 | 96.3 | | | 0.062 | | | 97.3 | | | Very severe | Very Severe | Balls et al. (1995) | |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 4 | 97.66 | | | 0.277 | | | 101.78 | | | Very severe | | Balls et al. (1995) | |
| Chlorhexidine | 55-56-1 | solid | water insoluble* | 20% | n.p. | 5 | 98.7 | | | 0.189 | | | 101.5 | | | Very severe | | Balls et al. (1995) | |
| 2-Chloro-2,4,4-trimethylpentane | - | liquid | negligible | 100% | n.p. | - | 4.0 | | | 0.004 | | | 4.1 | | | Mild | Mild | Bailey et al. (2004) | |
| Clarified slurry oil | - | liquid | negligible | 100% | n.p. | - | 2.3 | | | 0.000 | | | 2.3 | | | Mild | Mild | Bailey et al. (2004) | |
| Cleaner/Degreaser (#13) | - | liquid | n.p. | 100% | n.p. | - | 314.3 | 5 | | 2.623 | 5 | | 353.6 | 5 | | Severe | Severe | Swanson et al. (1995) | |
| Cleansing Gel (HZQ) | - | n.p. | n.p. | 100% | n.p. | - | 0.034 | | | 0.073 | | | | | | Mild | Mild | Casterton et al. (1996) | |
| Cleansing Gel (HZQ) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.164 | 3 | 0.05 | 2.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) | |
| Cutting fluid (conc.) #1 | - | liquid | emulsifies | 100% | n.p. | - | 3.3 | | | 0.001 | | | 3.5 | | | Mild | Mild | Bailey et al. (2004) | |
| Cutting fluid (conc.) #2 | - | liquid | emulsifies | 100% | n.p. | - | 4.3 | | | 0.038 | | | 4.9 | | | Mild | Mild | Bailey et al. (2004) | |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | 1 | 18.3 | | | 4.442 | | | 85 | | | Very severe | | Balls et al. (1995) | |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | 2 | 7.3 | | | 2.838 | | | 49.9 | | | Moderate | | Balls et al. (1995) | |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | 3 | 12 | | | 3.87 | | | 70.1 | | | Severe | Moderate | Balls et al. (1995) | |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | 4 | 11.66 | | | 2.71 | | | 52.24 | | | Moderate | | Balls et al. (1995) | |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | 5 | 7 | | | 2.392 | | | 43.2 | | | Moderate | | Balls et al. (1995) | |
| Cyclohexanol | 108-93-0 | liquid | water soluble | 100% | n.p. | - | 0.312 | | | 0.647 | | | | | | Severe | Severe | Casterton et al. (1996) | |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|-------------------------------|-----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 92 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 108 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 96 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 130 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 93 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 9 | 76.6 | 6 | 3.9 | 4.341 | 6 | 0.551 | 142 | 6 | 8.2 | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 118 | | | Severe | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 108 | | | Severe | | Gautheron et al. (1994) |
| Degreaser (#16) | - | liquid | n.p. | 100% | n.p. | - | 225.4 | 5 | | 2.022 | 5 | | 255.7 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 96 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 72 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 106 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 73 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 119 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 103 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 46 | | | Moderate | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 9 | 13.9 | 6 | 2.6 | 5.718 | 6 | 0.511 | 100 | 6 | 8 | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | 60 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 200 | | | Severe | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 59 | | | Severe | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 41 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 105 | | | Severe | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 39 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 34 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 49 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 41 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 9 | 31.1 | 6 | 3.2 | 4.119 | 6 | 1.341 | 92 | 6 | 22 | Severe | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 36 | | | Moderate | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 56 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 134 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 82 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 118 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 110 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 66 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 193 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 9 | 75.2 | 6 | 14.2 | 0.416 | 6 | 0.116 | 82 | 6 | 13.7 | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 213 | | | Severe | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 135 | | | Severe | | Gautheron et al. (1994) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 1 | 304.3 | | | -0.017 | | | 304.1 | | | Very severe | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 2 | 389.3 | | | 0.117 | | | 391.1 | | | Very severe | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 3 | 418 | | | -0.002 | | | 418 | | | Very severe | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 4 | 467 | | | -0.016 | | | 467.09 | | | Very severe | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | water insoluble* | 20% | 99 | 5 | 304 | | | 0.234 | | | 307.5 | | | Very severe | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 1 | 9 | | | 0.058 | | | 9.9 | | | Mild | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 2 | 10.3 | | | 0.059 | | | 11.2 | | | Mild | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|--------------------------------------|------------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 3 | 9.7 | | | 0.078 | | | 10.8 | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 4 | 14.33 | | | 0.007 | | | | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | 99 | 5 | 5.4 | | | 0.012 | | | 5.6 | | | Mild | Mild | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | water insoluble* | 100% | n.p. | - | 0.124 | | | 0.106 | | | | | | Mild | Mild | Casteron et al. (1996) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 23 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 23 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 18 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 28 | | | Moderate | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 16 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 31 | | | Moderate | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 18 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 71 | | | Severe | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 9 | 19.3 | 6 | 4.8 | -0.01 | 6 | 0.004 | 19 | 6 | 4.7 | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 20 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 34 | | | Moderate | Mild | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 14 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,4-Difluoronitrobenzene | 446-35-5 | liquid | n.p. | 100% | n.p. | - | 0.049 | | | 0.008 | | | | | | Mild | Mild | Casteron et al. (1996) |
| 1,3-Diisopropylbenzene | 99-62-7 | liquid | n.p. | 100% | n.p. | - | 0.029 | | | 0.000 | | | | | | Mild | Mild | Casteron et al. (1996) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 9 | 0.7 | 6 | 1.8 | 0.097 | 6 | 0.176 | 2 | 6 | 2.6 | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 8 | | | Mild | Mild | Gautheron et al. (1994) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 1 | 65 | | | 2.583 | | | 103.8 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 2 | 58.3 | | | 3.78 | | | 115 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 3 | 62.7 | | | 4.601 | | | 131.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 4 | 84 | | | 3.803 | | | 130.26 | | | Very severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | 96 | 5 | 37 | | | 2.783 | | | 78.8 | | | Severe | Very Severe | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | water insoluble | 100% | n.p. | - | 1.30 | | | 1.11 | | | | | | Severe | Severe | Casteron et al. (1996) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 1 | 12 | | | 0.415 | | | 18.2 | | | Mild | Mild | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 2 | 10.7 | | | 0.979 | | | 25.3 | | | Moderate | Mild | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 3 | 6.7 | | | 0.925 | | | 20.5 | | | Mild | Mild | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 4 | 21.33 | | | 0.68 | | | 31.533 | | | Moderate | Mild | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | water insoluble | 20% | 99.5 | 5 | 4.7 | | | 0.245 | | | 8.3 | | | Mild | Mild | Balls et al. (1995) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 10 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 10 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 14 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 11 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 11 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 14 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 10 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 10 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 9 | 6.3 | 6 | 1.7 | 0.204 | 6 | 0.056 | 9 | 6 | 1.4 | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 22 | | | Mild | Mild | Gautheron et al. (1994) |
| Dodecane | 112-40-3 | liquid | n.p. | 100% | n.p. | - | 0.086 | | | 0.006 | | | | | | Mild | Mild | Casteron et al. (1996) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | -1 | | | Mild | Mild | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|-------------------------|------------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|----------------------------|
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | -8 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -6 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 9 | 0.8 | 6 | 0.5 | 0.01 | 6 | 0.014 | 1 | 6 | 0.6 | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | -1 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 | 31 | | | 2.893 | | | 74.4 | | | Severe | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 | 21.3 | | | 2.123 | | | 53.2 | | | Moderate | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 | 16.3 | | | 3.134 | | | 63.3 | | | Severe | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 4 | 36 | | | 4.134 | | | 98.01 | | | Very severe | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 5 | 30 | | | 2.277 | | | 64.2 | | | Severe | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 | | | | | | | 58 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 | | | | | | | 67 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 | | | | | | | 70 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 4 | | | | | | | 45 | | | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 5 | | | | | | | 60 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 6 | | | | | | | 64 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 7 | | | | | | | 58 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 8 | | | | | | | 51 | | | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 9 | 22.3 | 6 | 4.1 | 1.56 | 6 | 0.316 | 46 | 6 | 6.6 | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 11 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 12 | | | | | | | 45 | | | Moderate | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (1) | 17.6 | 3 | 2.3 | 1.265 | 3 | 0.252 | 36.6 | 3 | 6.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (2) | 16.4 | 3 | 5.5 | 1.415 | 3 | 0.389 | 37.6 | 3 | 10.8 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (3) | 13.7 | 3 | 1.5 | 1.062 | 3 | 0.322 | 29.6 | 3 | 6.4 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (4) | 12.7 | 3 | 1.0 | 1.933 | 3 | 0.397 | 41.7 | 3 | 5.8 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (5) | 14.7 | 3 | 2.1 | 1.125 | 3 | 0.162 | 31.5 | 3 | 4.5 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (6) | 12.7 | 3 | 14.9 | 1.995 | 3 | 0.035 | 42.6 | | | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 1 (7) | 18.7 | 3 | 1.5 | 2.445 | 3 | 0.733 | 55.4 | | | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (1) | 13.3 | 3 | 1.0 | 2.626 | 3 | 0.909 | 52.7 | 3 | 12.8 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (2) | 17.0 | 3 | 2.3 | 2.504 | 3 | 0.703 | 54.5 | 3 | 8.3 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (3) | 16.3 | 3 | 4.9 | 3.025 | 3 | 0.699 | 61.7 | 3 | 7.8 | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (4) | 17.3 | 3 | 1.5 | 2.857 | 3 | 0.250 | 60.2 | 3 | 4.9 | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (5) | 14.7 | 3 | 2.1 | 2.636 | 3 | 0.427 | 54.2 | 3 | 5.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (6) | 17.6 | 3 | 0.6 | 3.718 | 3 | 0.798 | 73.4 | | | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (7) | 15.0 | 3 | 2.6 | 3.267 | 3 | 0.545 | 64.0 | | | Severe | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 2 (8) | 13.0 | 3 | 0.6 | 2.561 | 3 | 0.867 | 51.4 | | | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (1) | 16.6 | 3 | 2.1 | 2.027 | 3 | 1.026 | 47.0 | 3 | 14.3 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (2) | 18.0 | 3 | 2.9 | 1.831 | 3 | 0.061 | 45.4 | 3 | 2.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (3) | 19.3 | 3 | 2.6 | 1.673 | 3 | 0.071 | 44.4 | 3 | 3.0 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (4) | 22.0 | 3 | 2.6 | 1.583 | 3 | 0.426 | 45.7 | 3 | 8.5 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (5) | 18.6 | 3 | 1.5 | 2.395 | 3 | 0.380 | 54.6 | 3 | 4.5 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (6) | 17.0 | 3 | 1.2 | 1.853 | 3 | 0.268 | 44.8 | 3 | 5.1 | Moderate | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | water soluble | 100% | n.p. | 3 (7) | 19.3 | 3 | 3.8 | 1.527 | 3 | 0.344 | 42.2 | 3 | 8.8 | Moderate | | Southee (1998) |
| Ethanol (#14) | 64-17-5 | liquid | n.p. | 100% | n.p. | - | | | | | | | 52.7 | | | Moderate | Moderate | Swanson and Harbell (2000) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 99 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 100 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 128 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 85 | | | Severe | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|---------------------------------|------------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 94 | | | Severe | Severe | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 93 | | | Severe | Severe | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 9 | 61.7 | 6 | 1.9 | 1.515 | 6 | 0.134 | 84 | 6 | 1.2 | Severe | Severe | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 75 | | | Severe | Severe | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 101 | | | Severe | Severe | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 86 | | | Severe | Severe | Gautheron et al. (1994) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 1 | 8.7 | | | 0.737 | | | 19.7 | | | Mild | Moderate | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 2 | 5.7 | | | 1.513 | | | 28.4 | | | Moderate | Moderate | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 3 | 9 | | | 2.543 | | | 47.1 | | | Moderate | Moderate | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 4 | 13.33 | | | 2.065 | | | 44.31 | | | Moderate | Moderate | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | water soluble | 100% | 99 | 5 | 11 | | | 0.64 | | | 20.6 | | | Mild | Moderate | Balls et al. (1995) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 26 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 38 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 31 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 33 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 21 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 29 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 28 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 38 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 9 | 24 | 6 | 2.9 | 0.117 | 6 | 0.007 | 26 | 6 | 3.8 | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 38 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 42 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 2-Ethylhexanol | 104-76-7 | liquid | water soluble | 100% | n.p. | - | 0.321 | | | 0.352 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 1 | 8.3 | | | 3.58 | | | 62 | | | Severe | Severe | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 2 | 9 | | | 1.279 | | | 28.2 | | | Moderate | Nonsevere | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 3 | 4.3 | | | 1.761 | | | 30.7 | | | Moderate | Nonsevere | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 4 | 7 | | | 3.347 | | | 58.71 | | | Severe | Severe | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | water soluble | 100% | 99 | 5 | 7 | | | 0.837 | | | 19.6 | | | Mild | Severe | Balls et al. (1995) |
| Ethylhexyl acid phosphate ester | - | liquid | moderate | 100% | n.p. | - | 117.3 | | | 0.880 | | | 130.5 | | | Severe | Severe | Bailey et al. (2004) |
| 5-Ethylidene-2-norbornene | 16219-75-3 | liquid | negligible | 100% | n.p. | - | 5.7 | | | 0.207 | | | 8.8 | | | Mild | Mild | Bailey et al. (2004) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 1 | 26.7 | | | 0.052 | | | 27.5 | | | Moderate | Mild | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 2 | 14.3 | | | -0.014 | | | 14.1 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 3 | 5.7 | | | -0.012 | | | 5.5 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 4 | 5.33 | | | 0.014 | | | 5.543 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | water soluble* | 100% | 97 | 5 | 18.7 | | | 0.061 | | | 19.6 | | | Mild | Mild | Balls et al. (1995) |
| 3-Ethyltoluene | 620-14-4 | liquid | n.p. | 100% | n.p. | - | 0.029 | | | 0.009 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 1 | 10.3 | | | 1.136 | | | 27.4 | | | Moderate | Mild | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 2 | 5 | | | 1.916 | | | 33.7 | | | Moderate | Mild | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 3 | 1.3 | | | 0.609 | | | 10.5 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 4 | 5.33 | | | 0.22 | | | 8.633 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | 99 | 5 | 3.6 | | | 0.357 | | | 9 | | | Mild | Mild | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | water insoluble* | 100% | n.p. | - | 0.330 | | | 0.257 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Eye Make-Up Remover (HZH) | - | n.p. | n.p. | 100% | n.p. | - | 0.034 | | | 0.068 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Eye Make-Up Remover (HZH) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.02 | 3 | 0.016 | 0.2 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Facial Cleaning Foam (HZR) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.239 | 3 | 0.02 | 4.1 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Facial Cleanser (HZZ) | - | n.p. | n.p. | 100% | n.p. | - | 0.067 | | | 0.001 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Facial Cleanser (HZZ) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.004 | 3 | 0.004 | 1.8 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Floor Cleaner (#10) | - | liquid | n.p. | 100% | n.p. | - | 45.2 | 5 | | 1.675 | 5 | | 70.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Floor Cleaner (#2) | - | liquid | n.p. | 100% | n.p. | - | -2.1 | 5 | | 0.119 | 5 | | -0.3 | 5 | | Nonirritant | Nonirritant | Swanson et al. (1995) |
| Floor Stripper (#14) | - | liquid | n.p. | 100% | n.p. | - | 122.5 | 5 | | 2.318 | 5 | | 157.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Floor Stripper (#17) | - | liquid | n.p. | 100% | n.p. | - | 180.5 | 5 | | 2.38 | 5 | | 216.2 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Floor Stripper (#18) | - | liquid | n.p. | 100% | n.p. | - | 407.1 | 5 | | 2.481 | 5 | | 444.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Foam Bath (HZL) | - | n.p. | n.p. | 100% | n.p. | - | 0.094 | | | 0.238 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Foam Bath (HZL) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.912 | 3 | 0.261 | 18.6 | | | Severe | Severe | Gettings et al. (1996) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 1 | 2.6 | | | 2.859 | | | 45.5 | | | Moderate | Severe | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|-------------------------|------------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 2 | 4.3 | | | 9.837 | | | 151.9 | | | Very severe | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 3 | 6.3 | | | 3.904 | | | 64.9 | | | Severe | Nonsevere | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 4 | 13 | | | 0.668 | | | 23.023 | | | Mild | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | water soluble | 20% | 97.5 | 5 | 5.7 | | | 0.834 | | | 18.2 | | | Mild | | Balls et al. (1995) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 73 | | | Severe | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 63 | | | Severe | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 61 | | | Severe | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 65 | | | Severe | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 33 | | | Moderate | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 34 | | | Moderate | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 87 | | | Severe | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 9 | 20.6 | 6 | 2.5 | 1.97 | 6 | 0.197 | 50 | 6 | 4 | Moderate | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 39 | | | Moderate | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 68 | | | Severe | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 51 | | | Moderate | | Gautheron et al. (1994) |
| Gel Cleanser (HZE) | - | n.p. | n.p. | 100% | n.p. | - | 0.009 | | | 0.124 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Gel Cleanser (HZE) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.194 | 3 | 0.048 | 3.1 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| General Cleaner (#11) | - | liquid | n.p. | 100% | n.p. | - | 77.9 | 5 | | 0.359 | 5 | | 83.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| General Cleaner (#12) | - | liquid | n.p. | 100% | n.p. | - | 95.5 | 5 | | 1.197 | 5 | | 113.5 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Glass Cleaner (#19) | - | liquid | n.p. | 100% | n.p. | - | 98.3 | 5 | | 2.499 | 5 | | 135.8 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 63 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 108 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 66 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 90 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 57 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 9 | 85.2 | 6 | 5.6 | 0.154 | 6 | 0.041 | 88 | 6 | 5.3 | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 63 | | | Severe | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 6 | | | | | | | -4 | | | Nonirritant | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 9 | -0.2 | 6 | 0.5 | -0.005 | 6 | 0.005 | 0 | 6 | 0.5 | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | n.p. | 20% | n.p. | 12 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 1 | -2 | | | -0.001 | | | -2 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 2 | -0.7 | | | 0.029 | | | -0.2 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 3 | 0 | | | 0.018 | | | 0.3 | | | Mild | Mild | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 4 | 3 | | | 0.005 | | | 3.08 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 5 | 0 | | | 0.01 | | | 0.1 | | | Mild | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | n.p. | - | -0.020 | | | 0.013 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 1 (1) | 0.6 | 3 | 0.6 | -0.005 | 3 | 0.002 | 0.6 | 3 | 0.6 | Mild | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 1 (2) | 0.3 | 3 | 1.0 | -0.003 | 3 | 0.002 | 0.3 | 3 | 1.0 | Mild | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 2 (1) | 0.6 | 3 | 0.6 | 0.012 | 3 | 0.007 | 0.8 | 3 | 0.6 | Nonirritant | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 2 (2) | 0.7 | 3 | 0.6 | 0.008 | 3 | 0.009 | 0.8 | 3 | 0.7 | Nonirritant | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 3 (1) | 1.0 | 3 | 0.6 | -0.003 | 3 | 0.005 | 1.0 | 3 | 0.6 | Nonirritant | | Southee (1998) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------------|-----------|-------------|---------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Glycerol | 56-81-5 | liquid | water soluble | 100% | >99.5 | 3 (2) | 0.7 | 3 | 0.0 | 0.007 | 3 | 0.011 | 0.8 | 3 | 0.2 | Nonirritant | | Southee (1998) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 18 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 24 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 25 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 13 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 18 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 9 | 16.6 | 6 | 4.5 | 0.065 | 6 | 0.082 | 18 | 6 | 4.7 | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 23 | | | Mild | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 21 | | | Mild | | Gautheron et al. (1994) |
| Hand Soap (HZU) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.293 | 3 | 0.09 | 5.5 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Heavy Duty Cleaner (#15) | - | liquid | n.p. | 100% | n.p. | - | 323.3 | 5 | | 2.24 | 5 | | 357.1 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Heavy Duty Cleaner/Degreaser (#9) | - | liquid | n.p. | 100% | n.p. | - | 315.4 | 5 | | 2.619 | 5 | | 354.7 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 93 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 40 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 53 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 33 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 91 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 82 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 76 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 9 | 18.3 | 6 | 3.6 | 3.438 | 6 | 0.562 | 70 | 6 | 6.9 | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 102 | | | Severe | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 1 (1) | 13.3 | 3 | 2.0 | 0.654 | 3 | 0.273 | 23.1 | 3 | 5.9 | Mild | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 1 (2) | 9.7 | 3 | 4.2 | 0.499 | 3 | 0.109 | 17.2 | 3 | 5.8 | Mild | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 2 (1) | 13.7 | 3 | 3.2 | 1.398 | 3 | 0.601 | 34.6 | 3 | 12.1 | Moderate | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 2 (2) | 13.0 | 3 | 4.4 | 1.743 | 3 | 0.871 | 39.1 | 3 | 16.4 | Moderate | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 3 (1) | 17.3 | 3 | 1.0 | 0.958 | 3 | 0.100 | 31.7 | 3 | 2.3 | Moderate | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | n.p. | 10% | n.p. | 3 (2) | 17.7 | 3 | 2.1 | 0.818 | 3 | 0.607 | 29.9 | 3 | 11.2 | Moderate | | Southee (1998) |
| 1,5-Hexadiene | 592-42-7 | liquid | n.p. | 100% | n.p. | - | 0.164 | | | 0.085 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference | |
|---------------|----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|---------------------|
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 9 | 1.3 | 6 | 1.8 | 0.002 | 6 | 0.002 | 1 | 6 | 1.8 | Mild | | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) | |
| Hexane | 110-54-3 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) | |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 1 | 17.7 | | | 3.591 | | | 71.5 | | | Severe | | Severe/Very Severe | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 2 | 16 | | | 4.509 | | | 83.6 | | | Very severe | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 3 | 7 | | | 3.746 | | | 63.2 | | | Severe | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 4 | 15.33 | | | 2.191 | | | 48.19 | | | Moderate | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | water insoluble* | 100% | 98 | 5 | 10.7 | | | 2.145 | | | 42.9 | | | Moderate | Balls et al. (1995) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 1 | 68.3 | | | 2.232 | | | 116.8 | | | Very severe | Very Severe | Balls et al. (1995) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 2 | 93 | | | 2.724 | | | 133.9 | | | Very severe | | Balls et al. (1995) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 3 | 62.3 | | | 2.741 | | | 103.4 | | | Very severe | | Balls et al. (1995) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 4 | 97.34 | | | 1.424 | | | 118.7 | | | Very severe | | Balls et al. (1995) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | 99 | 5 | 54.3 | | | 2.431 | | | 90.8 | | | Very severe | | Balls et al. (1995) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 | | | | | | | 73 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 | | | | | | | 140 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 4 | | | | | | | 81 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 5 | | | | | | | 96 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 6 | | | | | | | 62 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 7 | | | | | | | 82 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 8 | | | | | | | 122 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 9 | 40.3 | 6 | 9.9 | 1.598 | 6 | 0.271 | 64 | 6 | 11.2 | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 10 | | | | | | | 81 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 11 | | | | | | | 114 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 12 | | | | | | | 65 | | | Severe | Gautheron et al. (1994) | | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (1) | 91.3 | 3 | 2.1 | 3.379 | 3 | 0.106 | 142.0 | 3 | 3.0 | Very severe | Very Severe | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (2) | 88.0 | 3 | 7.5 | 3.306 | 3 | 0.597 | 137.6 | 3 | 6.8 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (3) | 73.7 | 3 | 10.1 | 2.565 | 3 | 1.063 | 112.2 | 3 | 24.7 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (4) | 86.0 | 3 | 9.6 | 3.006 | 3 | 1.078 | 131.1 | 3 | 6.7 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (5) | 97.0 | 3 | 15.5 | 3.241 | 3 | 0.233 | 145.6 | 3 | 12.0 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (6) | 115.3 | 3 | 9.1 | 3.150 | 3 | 0.181 | 162.6 | 3 | | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 1 (7) | 70.3 | 3 | 4.5 | 3.681 | 3 | 0.691 | 125.5 | 3 | | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (1) | 85.7 | 3 | 9.8 | 3.490 | 3 | 0.309 | 138.1 | 3 | 13.0 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (2) | 88.0 | 3 | 13.0 | 3.471 | 3 | 0.381 | 140.1 | 3 | 11.9 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (3) | 86.3 | 3 | 6.0 | 3.240 | 3 | 0.651 | 134.9 | 3 | 9.4 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (4) | 92.3 | 3 | 7.9 | 4.324 | 3 | 1.048 | 157.2 | 3 | 12.5 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (5) | 88.0 | 3 | 16.7 | 3.308 | 3 | 0.695 | 137.6 | 3 | 6.8 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (6) | 97.3 | 3 | 12.9 | 3.709 | 3 | 0.866 | 152.9 | | | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 2 (7) | 100.0 | 3 | 9.1 | 3.316 | 3 | 0.183 | 148.7 | | | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (1) | 83.0 | 3 | 14.8 | 3.774 | 3 | 0.828 | 139.6 | 3 | 26.0 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (2) | 91.7 | 3 | 9.3 | 3.232 | 3 | 0.702 | 140.1 | 3 | 18.9 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (3) | 80.4 | 3 | 3.1 | 2.907 | 3 | 0.642 | 124.0 | 3 | 6.9 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (4) | 82.3 | 3 | 2.1 | 3.093 | 3 | 0.635 | 128.7 | 3 | 8.2 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (5) | 76.6 | 3 | 8.3 | 3.118 | 3 | 0.464 | 123.4 | 3 | 14.8 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (6) | 76.3 | 3 | 8.7 | 2.862 | 3 | 0.292 | 121.2 | 3 | 4.6 | Very severe | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | water soluble | 20% | n.p. | 3 (7) | 77.3 | 3 | 2.0 | 3.602 | 3 | 0.413 | 131.3 | 3 | 8.2 | Very severe | | Southee (1998) | |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) | |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) | |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) | |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 0 | | | Mild | Gautheron et al. (1994) | | |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 4 | | | Mild | Gautheron et al. (1994) | | |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|---------------------------------|------------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 12 | | | Mild | Mild | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 9 | 0.2 | 6 | 0.4 | -0.001 | 6 | 0.003 | 0 | 6 | 0.4 | Mild | Mild | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Mild | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| Iminodibenzyl | 494-19-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | -4 | | | Nonirritant | Mild | Gautheron et al. (1994) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 1 | 17 | | | 2.494 | | | 54.4 | | | Moderate | Moderate | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 2 | 20 | | | 3.598 | | | 74 | | | Severe | Moderate | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 3 | 19 | | | 3.248 | | | 67.7 | | | Severe | Moderate | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 4 | 26 | | | 1.052 | | | 41.78 | | | Moderate | Moderate | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | 99.9 | 5 | 21.4 | | | 1.39 | | | 42.2 | | | Moderate | Moderate | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | water insoluble* | 100% | n.p. | - | 0.453 | | | 0.688 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 1 | 11.7 | | | 1.868 | | | 39.7 | | | Moderate | Moderate | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 2 | 23.3 | | | 2.409 | | | 59.5 | | | Severe | Moderate | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 3 | 16 | | | 3.755 | | | 72.3 | | | Severe | Severe | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 4 | 30.66 | | | 3.189 | | | 78.5 | | | Severe | Severe | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | 99.9 | 5 | 18.3 | | | 1.4 | | | 39.3 | | | Moderate | Moderate | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | water soluble | 100% | n.p. | - | 0.593 | | | 0.526 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 53 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 50 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 48 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 28 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 45 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 35 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 48 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 43 | | | Moderate | Moderate | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 9 | 7.8 | 6 | 0.9 | 3.653 | 6 | 0.496 | 63 | 6 | 7.3 | Severe | Severe | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | Severe | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 89 | | | Severe | Severe | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 48 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 81 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 82 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 103 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 76 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 92 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 68 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 90 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 62 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 9 | 16.2 | 6 | 4.3 | 5.742 | 6 | 1.462 | 102 | 6 | 24.8 | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | 76 | | | Severe | Severe | Gautheron et al. (1994) |
| Laurylsulfobetaine | 14933-08-5 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 55 | | | Moderate | Moderate | Gautheron et al. (1994) |
| Liquid Soap No. 2 (HZW) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.352 | 3 | 0.1 | 5.6 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Liquid Soap No. 1 (HZB) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.199 | 3 | 0.024 | 2.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 7 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 9 | 0.5 | 6 | 0.5 | 0.016 | 6 | 0.004 | 1 | 6 | 0.5 | Mild | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Mild | Gautheron et al. (1994) |
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|------------|-------------|----------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Magnesium carbonate | 56378-72-4 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 1 | 67.6 | | | -0.045 | | | 67 | | | Severe | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 2 | 17 | | | -0.008 | | | 16.9 | | | Mild | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 3 | 21 | | | -0.002 | | | 21 | | | Mild | Nonsevere | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 4 | 56.33 | | | 0.495 | | | 63.76 | | | Severe | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | water soluble | 20% | 90 | 5 | 33.3 | | | 0.029 | | | 33.8 | | | Moderate | | Balls et al. (1995) |
| Meat Room Degreaser (#3) | - | liquid | n.p. | 100% | n.p. | - | 99.3 | 5 | | 2.733 | 5 | | 140.3 | 5 | | Severe | Severe | Swanson et al. (1995) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 2 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 3 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -8 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 9 | -0.2 | 6 | 0.4 | -0.004 | 6 | 0.002 | 0 | 6 | 0.4 | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 11 | | | | | | | -4 | | | Nonirritant | | Gautheron et al. (1994) |
| 2-Mercaptopurimidine | 1450-85-7 | solid | n.p. | 20% | n.p. | 12 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) |
| Metal Cleaner (#20) | - | liquid | n.p. | 100% | n.p. | - | 344.2 | 5 | | 3.182 | 5 | | 391.9 | 5 | | Severe | Severe | Swanson et al. (1995) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 54 | | | Moderate | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 71 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 81 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 108 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 37 | | | Moderate | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 19 | | | Mild | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 9 | 73.7 | 6 | 6 | 1.698 | 6 | 0.56 | 99 | 6 | 12.8 | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 179 | | | Severe | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 102 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 61 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 69 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 66 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 47 | | | Moderate | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 65 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 9 | 45.1 | 6 | 7.1 | 0.8 | 6 | 0.137 | 57 | 6 | 8.9 | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 74 | | | Severe | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 88 | | | Severe | | Gautheron et al. (1994) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 1 | 51.6 | | | 1.301 | | | 71.2 | | | Severe | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 2 | 42 | | | 0.299 | | | 46.5 | | | Moderate | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 3 | 38.3 | | | 0.887 | | | 51.6 | | | Moderate | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 4 | 43.1 | | | 0.72 | | | 53.9 | | | Moderate | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | 98 | 5 | 45.3 | | | 0.384 | | | 51.1 | | | Moderate | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | water soluble | 100% | n.p. | - | 1.07 | | | 0.236 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 1 | 16.3 | | | 0.002 | | | 16.3 | | | Mild | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 2 | 6.7 | | | -0.052 | | | 5.9 | | | Mild | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 3 | 10.3 | | | -0.015 | | | 10.1 | | | Mild | Mild | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 4 | 17.33 | | | 0.013 | | | 17.53 | | | Mild | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | water soluble* | 100% | 99 | 5 | 11 | | | -0.003 | | | 11 | | | Mild | | Balls et al. (1995) |
| Methyl cyclopentadiene dimer | - | liquid | negligible | 100% | n.p. | - | 0.7 | | | 0.001 | | | 0.7 | | | Mild | Mild | Bailey et al. (2004) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------------|----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 1 | 1.3 | | | 0.169 | | | 3.8 | | | Mild | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 2 | 2.3 | | | 0.152 | | | 4.6 | | | Mild | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 3 | 0.3 | | | 0.071 | | | 1.4 | | | Mild | Mild | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 4 | 1 | | | 0.047 | | | 1.71 | | | Mild | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | water insoluble* | 100% | >99 | 5 | 0.3 | | | 0.161 | | | 2.7 | | | Mild | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 1 | 68 | | | 1.665 | | | 93 | | | Very severe | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 2 | 51.3 | | | 1.069 | | | 67.4 | | | Severe | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 3 | 34 | | | 1.212 | | | 52.2 | | | Moderate | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 4 | 58 | | | 1.38 | | | 78.71 | | | Severe | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 5 | 51.7 | | | 0.607 | | | 60.8 | | | Severe | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | n.p. | - | 1.110 | | | 0.395 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 1 (1) | 47.6 | 3 | 5.9 | 1.706 | 3 | 0.679 | 73.3 | 3 | 15.9 | Severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 1 (2) | 48 | 3 | 2.1 | 1.32 | 3 | 0.303 | 67.8 | 3 | 5.7 | Severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 2 (1) | 61 | 3 | 2.9 | 3.183 | 3 | 0.86 | 108.7 | 3 | 11.9 | Very severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 2 (2) | 62 | 3 | 6.7 | 2.648 | 3 | 1.074 | 101.7 | 3 | 21.1 | Very severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 3 (1) | 55.7 | 3 | 5.0 | 0.972 | 3 | 0.479 | 70.2 | 3 | 3.5 | Severe | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | water soluble | 100% | 99 | 3 (2) | 54.4 | 3 | 1.5 | 1.278 | 3 | 0.359 | 73.5 | 3 | 6.4 | Severe | | Southee (1998) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 1 | 4.7 | | | 0.273 | | | 8.8 | | | Mild | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 2 | 8.7 | | | 0.759 | | | 20.1 | | | Mild | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 3 | 5.7 | | | 0.307 | | | 10.3 | | | Mild | Mild | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 4 | 8 | | | 0.35 | | | 13.25 | | | Mild | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | 98 | 5 | 5.7 | | | 0.305 | | | 10.3 | | | Mild | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | water insoluble* | 100% | n.p. | - | 0.413 | | | 0.172 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 22 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 25 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 27 | | | Moderate | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 19 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 21 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 23 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 9 | 11.2 | 6 | 2.7 | 0.546 | 6 | 0.244 | 19 | 6 | 3.1 | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 20 | | | Mild | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| 1-Methylpropyl benzene | 135-98-8 | liquid | n.p. | 100% | n.p. | - | 0.041 | | | 0.005 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Mild Shampoo (HZJ) | - | n.p. | n.p. | 100% | n.p. | - | -0.007 | | | 0.01 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Mild Shampoo (HZJ) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.05 | 3 | 0.025 | 0.1 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | -4 | | | Nonirritant | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 9 | 0.4 | 6 | 1.4 | 0.005 | 6 | 0.004 | 1 | 6 | 1.4 | Mild | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 1 | 119.4 | | | 0.095 | | | 120.8 | | | Very severe | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 2 | 65.7 | | | 0.045 | | | 66.3 | | | Severe | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 3 | 41 | | | 0.065 | | | 42 | | | Moderate | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 4 | 86.67 | | | 0.137 | | | 88.73 | | | Very severe | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | water insoluble* | 20% | 96 | 5 | 70 | | | 0.168 | | | 72.5 | | | Severe | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 1 | 73.3 | | | 4.177 | | | 136 | | | Very severe | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------------|----------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 2 | 83 | | | 4.124 | | | 144.9 | | | Very severe | Very Severe | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 3 | 73 | | | 5.864 | | | 161 | | | Very severe | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 4 | 108 | | | 3.55 | | | 161.2 | | | Very severe | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | water soluble* | 20% | 95 | 5 | 94.7 | | | 3.222 | | | 143 | | | Very severe | | Balls et al. (1995) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 11 | | | Mild | Mild | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 9 | 16.5 | 6 | 1.7 | 0.008 | 6 | 0.018 | 17 | 6 | 1.9 | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 1 | 11 | | | 2.159 | | | 43.4 | | | Moderate | Moderate | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 2 | 13 | | | 4.392 | | | 78.9 | | | Severe | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 3 | 10 | | | 1.984 | | | 39.8 | | | Moderate | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 4 | 6 | | | 0.569 | | | 14.54 | | | Mild | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | water insoluble* | 100% | >99 | 5 | 6 | | | 1.464 | | | 28 | | | Moderate | | Balls et al. (1995) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 1 | | | | | | | 65 | | | Severe | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 2 | | | | | | | 33 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 3 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 4 | | | | | | | 49 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 5 | | | | | | | 66 | | | Severe | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 6 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 7 | | | | | | | 37 | | | Moderate | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 8 | | | | | | | 25 | | | Mild | Gautheron et al. (1994) | |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 9 | 27.7 | 6 | 5 | 2.212 | 6 | 0.377 | 61 | 6 | 6.9 | Severe | Gautheron et al. (1994) | |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Gautheron et al. (1994) | |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 11 | | | | | | | 31 | | | Moderate | Gautheron et al. (1994) | |
| Octanol | 111-87-5 | liquid | water insoluble* | 100% | n.p. | 12 | | | | | | | 64 | | | Severe | Gautheron et al. (1994) | |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 1 | 17.3 | | | 0.809 | | | 29.5 | | | Moderate | Moderate | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 2 | 11.3 | | | 1.006 | | | 26.4 | | | Moderate | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 3 | 18.7 | | | 1.474 | | | 40.8 | | | Moderate | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 4 | 18 | | | 0.8996 | | | 31.82 | | | Moderate | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 5 | 13.3 | | | 0.679 | | | 23.5 | | | Moderate | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | n.p. | - | 0.413 | | | 0.106 | | | | | | Moderate | | Casterton et al. (1996) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 1 (1) | 15.3 | 3 | 1.0 | 1.044 | 3 | 0.413 | 31 | 3 | 7.2 | Moderate | | Southee (1998) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 1 (2) | 16.3 | 3 | 3.5 | 1.243 | 3 | 0.287 | 35 | 3 | 6.2 | Moderate | | Southee (1998) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 2 (1) | 13.3 | 3 | 2.1 | 1.663 | 3 | 0.372 | 38.3 | 3 | 7.5 | Moderate | | Southee (1998) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 2 (2) | 16.0 | 3 | 4.6 | 1.432 | 3 | 0.531 | 37.5 | 3 | 12.2 | Moderate | | Southee (1998) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 3 (1) | 11.0 | 3 | 1.0 | 0.738 | 3 | 0.154 | 22.1 | 3 | 2.7 | Mild | | Southee (1998) |
| Parafluoraniiline | 371-40-4 | liquid | water insoluble | 100% | 99 | 3 (2) | 15.4 | 3 | 1.2 | 0.7 | 3 | 0.151 | 28.9 | 3 | 3.4 | Moderate | | Southee (1998) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 61 | | | Severe | Severe | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 79 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 75 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 34 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 70 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 46 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 54 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 44 | | | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 9 | 49.1 | 6 | 3.4 | 0.084 | 6 | 0.036 | 50 | 6 | 3.4 | Moderate | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 67 | | | Severe | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 62 | | | Severe | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|---------------------------------------|------------|-------------|----------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| 2,4-Pentanedione | 123-54-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 76 | | | Severe | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 13 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 9 | 1.4 | 6 | 1.9 | 0.015 | 6 | 0.011 | 2 | 6 | 1.9 | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| Petroleum wax | - | solid | negligible | 100% | n.p. | - | 0.3 | | | -0.001 | | | 0.3 | | | Mild | Mild | Bailey et al. (2004) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | -6 | | | Nonirritant | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 9 | 0.7 | 6 | 0.4 | -0.008 | 6 | 0.008 | 1 | 6 | 0.4 | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | -3 | | | Nonirritant | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 12 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 16 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 9 | 11.1 | 6 | 1 | 0.143 | 6 | 0.052 | 13 | 6 | 1.6 | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 10 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 13 | | | Mild | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| Polishing Scrub (HZT) | - | n.p. | n.p. | 100% | n.p. | - | 0.027 | | | 0.015 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Polishing Scrub (HZT) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | -0.001 | 3 | 0.001 | 3.7 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Polyalkenylsuccinate ester/amine salt | - | liquid | moderate | 100% | n.p. | - | 2.3 | | | 0.000 | | | 2.3 | | | Mild | Mild | Bailey et al. (2004) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 1 | 0.3 | | | 0.019 | | | 0.6 | | | Mild | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 2 | 2 | | | 0.036 | | | 2.5 | | | Mild | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 3 | -1.7 | | | 0.021 | | | -1.3 | | | Nonirritant | Mild | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 4 | 1 | | | 0.005 | | | 1.08 | | | Mild | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | 5 | 2.7 | | | 0.01 | | | 2.8 | | | Mild | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | surfactant | 100% | n.p. | - | -0.015 | | | 0.008 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Polyethylene glycol 600 | - | liquid | surfactant | 100% | n.p. | - | -0.013 | | | 0.008 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Pot and Pan Cleaner (#8) | - | liquid | n.p. | 100% | n.p. | - | -1.8 | 5 | | 0.078 | 5 | | -0.6 | 5 | | Nonirritant | Nonirritant | Swanson et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 1 | 8.7 | | | 0.499 | | | 16.2 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 2 | 11 | | | 0.793 | | | 22.9 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 3 | 8.3 | | | 0.248 | | | 12 | | | Mild | Mild | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 4 | 7 | | | 0.692 | | | 17.38 | | | Mild | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | water soluble | 20% | 97 | 5 | 3 | | | 0.234 | | | 6.5 | | | Mild | | Balls et al. (1995) |
| Process oil | - | liquid | negligible | 100% | n.p. | - | 2.7 | | | 0.004 | | | 2.7 | | | Mild | Mild | Bailey et al. (2004) |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 1 | 120.7 | | | -0.022 | | | 120.3 | | | Very severe | | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference | |
|----------------------------|----------|-------------|----------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|---------------------|
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 2 | 87.7 | | | -0.234 | | | 84.2 | | | Very severe | Very Severe | Balls et al. (1995) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 3 | 125 | | | 0.044 | | | 125.7 | | | Very severe | | Balls et al. (1995) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 4 | 121.33 | | | 0.051 | | | 123.09 | | | Very severe | | Balls et al. (1995) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | 98 | 5 | 153.7 | | | 0.011 | | | 153.8 | | | Very severe | | Balls et al. (1995) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 1 | | | | | | | 117 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 2 | | | | | | | 156 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 3 | | | | | | | 109 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 4 | | | | | | | 111 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 5 | | | | | | | 164 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 6 | | | | | | | 174 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 7 | | | | | | | 103 | | | Severe | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 8 | | | | | | | 50 | | | Moderate | | Gautheron et al. (1994) | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 9 | 134.9 | 6 | 9.7 | 0.287 | 6 | 0.216 | 139 | 6 | 10.2 | Severe | Gautheron et al. (1994) | | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | Gautheron et al. (1994) | | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 11 | | | | | | | 94 | | | Severe | Gautheron et al. (1994) | | |
| Promethazine hydrochloride | 58-33-3 | solid | water soluble* | 20% | n.p. | 12 | | | | | | | 19 | | | Mild | Gautheron et al. (1994) | | |
| Propylene glycol | 57-55-6 | liquid | n.p. | 100% | n.p. | - | 0.076 | | | 0.024 | | | | | | Mild | Mild | Casterton et al. (1996) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 7 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 14 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 4 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 6 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 9 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 6 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 11 | | | Mild | Gautheron et al. (1994) | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 9 | 5.2 | 6 | 1.7 | 0.066 | 6 | 0.059 | 6 | 6 | 1.5 | Mild | Mild | Gautheron et al. (1994) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 12 | | | Mild | | Gautheron et al. (1994) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 1 (1) | 10.7 | 3 | 2.6 | 0.034 | 3 | 0.044 | 11.2 | 3 | 3.2 | Mild | | Southee (1998) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 1 (2) | 7.0 | 3 | 0.6 | 0.023 | 3 | 0.026 | 7.4 | 3 | 0.6 | Mild | | Southee (1998) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 2 (1) | 5.0 | 3 | 1.7 | 0.013 | 3 | 0.012 | 5.2 | 3 | 1.9 | Mild | | Southee (1998) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 2 (2) | 3.4 | 3 | 1.5 | 0.016 | 3 | 0.015 | 3.6 | 3 | 1.6 | Mild | | Southee (1998) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 3 (1) | 7.3 | 3 | 4.4 | 0.028 | 3 | 0.014 | 7.7 | 3 | 4.2 | Mild | | Southee (1998) | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | n.p. | 20% | 100 | 3 (2) | 5.6 | 3 | 0.6 | 0.04 | 3 | 0.051 | 6.2 | 3 | 0.7 | Mild | | Southee (1998) | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 1 | 73.7 | | | 4.468 | | | 140.7 | | | Very severe | | Very Severe | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 2 | 83.7 | | | 4.117 | | | 145.4 | | | Very severe | | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 3 | 61 | | | 4.763 | | | 132.4 | | | Very severe | Balls et al. (1995) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 4 | 87.33 | | | 7.445 | | | 199.02 | | | Very severe | Balls et al. (1995) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | >99.9 | 5 | 74.7 | | | 3.204 | | | 122.7 | | | Very severe | Balls et al. (1995) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 1 | | | | | | | 102 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 2 | | | | | | | 123 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 3 | | | | | | | 186 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 4 | | | | | | | 79 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 5 | | | | | | | 102 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 6 | | | | | | | 77 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 7 | | | | | | | 124 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 8 | | | | | | | 132 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 9 | 44.4 | 6 | 3.3 | 4.015 | 6 | 0.849 | 105 | 6 | 15.7 | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 11 | | | | | | | 96 | | | Severe | Gautheron et al. (1994) | | |
| Pyridine | 110-86-1 | liquid | water soluble | 100% | n.p. | 12 | | | | | | | 115 | | | Severe | Gautheron et al. (1994) | | |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 1 | 1 | | | -0.047 | | | 0.3 | | | Mild | Mild | Balls et al. (1995) | |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 2 | 0.3 | | | 0.002 | | | 0.4 | | | Mild | | Balls et al. (1995) | |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 3 | 1.7 | | | 0.028 | | | 2.1 | | | Mild | | Balls et al. (1995) | |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 4 | 2.34 | | | -0.033 | | | 1.85 | | | Mild | | Balls et al. (1995) | |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|-----------------------------|-----------|-------------|----------------|----------------------|---------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 5 | 2 | | | 0.07 | | | 3.1 | | | Mild | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 1 | | | | | | | 17 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 2 | | | | | | | 29 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 3 | | | | | | | 8 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 4 | | | | | | | 46 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 5 | | | | | | | 52 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 6 | | | | | | | 24 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 7 | | | | | | | 15 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 8 | | | | | | | 18 | | | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 9 | 57 | 6 | 5.4 | 0.063 | 6 | 0.04 | 58 | 6 | 5.8 | Moderate | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 11 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | water soluble* | 20% | n.p. | 12 | | | | | | | 72 | | | Severe | | Gautheron et al. (1994) |
| Shampoo No. 1 (HZC) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.957 | 3 | 0.306 | 30.0 | | | Severe | Severe | Gettings et al. (1996) |
| Shampoo No. 2 (HZX) | - | n.p. | n.p. | 100% | n.p. | - | 0.087 | | | 0.184 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Shampoo No. 2 (HZX) | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.705 | 3 | 0.289 | 14.0 | | | Severe | Severe | Gettings et al. (1996) |
| Shampoo No. 3 (HZM) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.214 | 3 | 0.049 | 4.3 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 4 (HZV) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.268 | 3 | 0.045 | 8.4 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 5 (HZD) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.241 | 3 | 0.08 | 2.7 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 6 (HZN) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.267 | 3 | 0.076 | 4.5 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 7 (HZA) | - | n.p. | n.p. | 100% | n.p. | - | 0.113 | | | 0.205 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Shampoo No. 7 (HZA) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.406 | 3 | 0.156 | 6.6 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shampoo No. 8 (HZG) 25% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.197 | 3 | 0.058 | 2.7 | | | Nonsevere | Nonsevere | Gettings et al. (1996) |
| Shower Gel (HZS) | - | n.p. | n.p. | 100% | n.p. | - | 0.189 | | | 0.303 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Shower Gel (HZS) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 1.548 | 3 | 0.093 | 35.9 | | | Severe | Severe | Gettings et al. (1996) |
| Skin Cleanser (HZI) | - | n.p. | n.p. | 100% | n.p. | - | 0.127 | | | 0.261 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Skin Cleanser (HZI) 100% | - | n.p. | n.p. | 10% | n.p. | - | | | | 0.769 | 3 | 0.036 | 15.8 | | | Severe | Severe | Gettings et al. (1996) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 1 | 100.3 | | | 4.471 | | | 167.4 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 2 | 80.7 | | | 3.504 | | | 133.2 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 3 | 88.7 | | | 3.856 | | | 146.5 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 4 | 116.66 | | | 3.628 | | | 171.08 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | reagent grade | 5 | 88 | | | 2.888 | | | 132.3 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | water soluble | 1% | n.p. | - | 1.69 | | | 1.28 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 1 | 232.3 | | | 3.53 | | | 285.2 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 2 | 173.3 | | | 3.382 | | | 224.1 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 3 | 197 | | | 3.849 | | | 254.7 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 4 | 283 | | | 4.329 | | | 348.27 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | reagent grade | 5 | 197.3 | | | 3.321 | | | 247.2 | | | Very severe | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | - | 1.97 | | | 1.23 | | | | | | Severe | Severe | Casterton et al. (1996) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 1 (1) | 176.7 | 3 | 31.4 | 4.551 | 3 | 1.019 | 245.0 | 3 | 28.7 | Very severe | | Southee (1998) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 1 (2) | 172.0 | 3 | 1.7 | 3.676 | 3 | 0.201 | 227.1 | 3 | 3.4 | Very severe | | Southee (1998) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 2 (1) | 170.0 | 3 | 20.7 | 4.755 | 3 | 0.586 | 241.3 | 3 | 11.9 | Very severe | | Southee (1998) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 2 (2) | 166.7 | 3 | 12.6 | 4.590 | 3 | 0.405 | 235.5 | 3 | 7.3 | Very severe | | Southee (1998) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 3 (1) | 124.0 | 3 | 13.7 | 4.604 | 3 | 0.380 | 193.1 | 3 | 19.0 | Very severe | | Southee (1998) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | water soluble | 10% | n.p. | 3 (2) | 165.3 | 3 | 21.2 | 3.303 | 3 | 0.388 | 214.9 | 3 | 15.5 | Very severe | | Southee (1998) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | 98 | 1 | 4 | | | 2.884 | | | 47.3 | | | Moderate | | Balls et al. (1995) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | 98 | 2 | 6 | | | 5.801 | | | 93 | | | Very severe | | Balls et al. (1995) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | 98 | 3 | 3.3 | | | 3.988 | | | 63.2 | | | Severe | Severe | Balls et al. (1995) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | 98 | 4 | 1.66 | | | 3.862 | | | 59.61 | | | Severe | | Balls et al. (1995) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | 98 | 5 | 7.7 | | | 3.042 | | | 53.3 | | | Moderate | | Balls et al. (1995) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 15% | n.p. | - | 0.163 | | | 0.424 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 1 (1) | -0.8 | 3 | 0.0 | 0.408 | 3 | 0.024 | 5.4 | 3 | 0.4 | Mild | | Southee (1998) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 1 (2) | 0.0 | 3 | 0.6 | 0.348 | 3 | 0.182 | 5.2 | 3 | 2.7 | Mild | | Southee (1998) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 2 (1) | 0.7 | 3 | 1.0 | 1.012 | 3 | 0.461 | 15.9 | 3 | 7.6 | Mild | Mild | Southee (1998) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 2 (2) | 1.0 | 3 | 0.6 | 1.086 | 3 | 0.083 | 17.3 | 3 | 1.7 | Mild | Mild | Southee (1998) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 3 (1) | 0.7 | 3 | 0.6 | 0.518 | 3 | 0.11 | 8.7 | 3 | 1.4 | Mild | Mild | Southee (1998) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------------|------------|-------------|------------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | surfactant | 10% | 98 | 3 (2) | 1.3 | 3 | 0.6 | 0.283 | 3 | 0.064 | 5.6 | 3 | 1.5 | Mild | Moderate | Southee (1998) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 1 | 12.3 | | | 1.29 | | | 31.7 | | | Moderate | Moderate | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 2 | 3.3 | | | 1.892 | | | 31.7 | | | Moderate | Moderate | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 3 | 0.3 | | | 1.801 | | | 27.3 | | | Moderate | Moderate | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 4 | 6 | | | 1.348 | | | 26.22 | | | Moderate | Moderate | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | 98 | 5 | 0 | | | 0.82 | | | 12.3 | | | Mild | Mild | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | surfactant | 3% | n.p. | - | 0.040 | | | 0.113 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Sodium lauryl sulfate (30 %) | 151-21-3 | liquid | surfactant | 30% | n.p. | - | 0.095 | | | 0.312 | | | | | | Moderate | Moderate | Casterton et al. (1996) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 1 | 1.3 | | | 0.054 | | | 2.1 | | | Mild | Mild | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 2 | 6.7 | | | 0.059 | | | 7.6 | | | Mild | Mild | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 3 | 3 | | | 0.187 | | | 5.8 | | | Mild | Mild | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 4 | 43 | | | 0.556 | | | 49.59 | | | Moderate | Moderate | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | >99 | 5 | 4 | | | 0.081 | | | 4.9 | | | Mild | Mild | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 1 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 2 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 3 | | | | | | | 9 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 4 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 5 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 6 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 7 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 8 | | | | | | | 3 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 9 | 1.7 | 6 | 0.9 | 0.103 | 6 | 0.042 | 3 | 6 | 1.3 | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 10 | | | | | | | 9 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 11 | | | | | | | 11 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | n.p. | 12 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 1 (1) | 8.4 | 3 | 1.2 | 0.128 | 3 | 0.16 | 10.3 | 3 | 1.4 | Mild | Mild | Southee (1998) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 1 (2) | 3.4 | 3 | 0.6 | 0.071 | 3 | 0.03 | 4.4 | 3 | 1.0 | Mild | Mild | Southee (1998) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 2 (1) | -1.0 | 3 | 1.7 | 0.05 | 3 | 0.054 | -0.3 | 3 | 1.5 | Nonirritant | Nonirritant | Southee (1998) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 2 (2) | -1.0 | 3 | 2.1 | 0.055 | 3 | 0.012 | -0.1 | 3 | 2.1 | Nonirritant | Nonirritant | Southee (1998) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 3 (1) | 2.0 | 3 | 0.6 | 0.051 | 3 | 0.032 | 2.7 | 3 | 0.9 | Nonirritant | Nonirritant | Southee (1998) |
| Sodium oxalate | 62-76-0 | solid | water soluble | 20% | 99 | 3 (2) | 2.3 | 3 | 1.0 | 0.15 | 3 | 0.022 | 4.5 | 3 | 1.3 | Mild | Mild | Southee (1998) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 1 | 10 | | | 8.908 | | | 143.6 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 2 | 13.7 | | | 6.982 | | | 118.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 3 | 10 | | | 5.749 | | | 96.2 | | | Very severe | Very Severe | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 4 | 11 | | | 3.568 | | | 64.531 | | | Severe | Severe | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | water soluble | 20% | 98.6 | 5 | 9.7 | | | 3.547 | | | 62.9 | | | Severe | Severe | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 1 | 24 | | | -0.023 | | | 23.6 | | | Mild | Mild | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 2 | 8.3 | | | -0.027 | | | 7.9 | | | Mild | Mild | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 3 | 14.3 | | | -0.008 | | | 14.2 | | | Mild | Mild | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 4 | 21.33 | | | -0.045 | | | 20.65 | | | Mild | Mild | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | water insoluble* | 20% | 97 | 5 | 6 | | | 0.19 | | | 8.9 | | | Mild | Mild | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 5 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 1 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 0 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 4 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 19 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 9 | 2.6 | 6 | 1.4 | -0.003 | 6 | 0.006 | 3 | 6 | 1.4 | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | n.a. | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 18 | | | Mild | Mild | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 6 | | | Mild | Mild | Gautheron et al. (1994) |
| Thiadiazole alkyl derivative | - | liquid | negligible | 100% | n.p. | - | 7.3 | | | 0.237 | | | 10.9 | | | Moderate | Moderate | Bailey et al. (2004) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 1 | 88 | | | 4.095 | | | 149.4 | | | Very severe | Very Severe | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 2 | 106.3 | | | 2.19 | | | 139.2 | | | Very severe | Very Severe | Balls et al. (1995) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|----------------------------|----------|-------------|------------------|----------------------|---------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 3 | 82 | | | 3.572 | | | 135.6 | | | Very severe | Very Severe | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 4 | 81.01 | | | 3.76 | | | 137.44 | | | Very severe | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | water soluble | 20% | >99 | 5 | 74 | | | 1.671 | | | 99.1 | | | Very severe | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 1 | | | | | | | 146 | | | Severe | Severe | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 2 | | | | | | | 175 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 3 | | | | | | | 169 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 4 | | | | | | | 152 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 5 | | | | | | | 140 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 6 | | | | | | | 120 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 7 | | | | | | | 129 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 8 | | | | | | | 173 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 9 | 85.8 | 6 | 9.2 | 4.373 | 6 | 1.028 | 151 | 6 | 20.7 | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 11 | | | | | | | 203 | | | Severe | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | n.p. | 20% | n.p. | 12 | | | | | | | 104 | | | Severe | | Gautheron et al. (1994) |
| Toilet Bowl Cleaner (#1) | - | liquid | n.p. | 100% | n.p. | - | 8.700 | 5 | | 0.323 | 5 | | 13.5 | 5 | | Mild | Mild | Swanson et al. (1995) |
| Toilet Bowl Cleaner (#4) | - | liquid | n.p. | 100% | n.p. | - | 10.5 | 5 | | 0.303 | 5 | | 15 | 5 | | Mild | | Swanson et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 1 | 9.3 | | | 2.26 | | | 43.3 | | | Moderate | Moderate | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 2 | 6 | | | 1.813 | | | 33.2 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 3 | 5.3 | | | 2.122 | | | 37.2 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 4 | 2 | | | 2.427 | | | 38.41 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | 99 | 5 | 4 | | | 1.473 | | | 26.1 | | | Moderate | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | water insoluble* | 100% | n.p. | - | 0.420 | | | 0.805 | | | | | | Severe | | Casteron et al. (1996) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 1 | 79.3 | | | 0.173 | | | 81.9 | | | Very severe | Severe/Very Severe | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 2 | 49 | | | 0.053 | | | 49.8 | | | Moderate | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 3 | 73.7 | | | 0.111 | | | 75.3 | | | Severe | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 4 | 92.33 | | | 0.042 | | | 92.97 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | reagent grade | 5 | 78.4 | | | 0.067 | | | 79.3 | | | Severe | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | water soluble | 3% | n.p. | - | 0.029 | | | 0.011 | | | | | | Mild | | Casteron et al. (1996) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 1 | 228 | | | 2.93 | | | 272 | | | Very severe | Very Severe | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 2 | 154.7 | | | 4.687 | | | 225 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 3 | 245.3 | | | 3.44 | | | 296.9 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 4 | 277 | | | 3.072 | | | 323.08 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | reagent grade | 5 | 157 | | | 3.115 | | | 203.7 | | | Very severe | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | water soluble | 30% | n.p. | - | 1.43 | | | 0.031 | | | | | | Severe | | Casteron et al. (1996) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 47 | | | Moderate | Moderate | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 78 | | | Severe | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 42 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 47 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 48 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 24 | | | Mild | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 9 | 7.7 | 6 | 1.9 | 5.561 | 6 | 1.398 | 91 | 6 | 20 | Severe | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 28 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 47 | | | Moderate | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 2 | | | Mild | Mild | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 4 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 3 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 9 | 2.6 | 6 | 0.9 | 0.025 | 6 | 0.011 | 3 | 6 | 1 | Mild | | Gautheron et al. (1994) |

In Vitro Data for Substances Tested in the BCOP Assay: Sorted by Substance Name

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₂₀₀ | n | SD - OD ₂₀₀ | In Vitro Score ¹ | n | SD - Score | In Vitro Classification ² | Consensus Classification ³ | Reference |
|------------------------|-----------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|-----------------------------|---|------------|--------------------------------------|---------------------------------------|-------------------------|
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 5 | | | Mild | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 6 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 1 | | | | | | | 25 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 2 | | | | | | | 14 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 3 | | | | | | | 26 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 4 | | | | | | | 11 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 5 | | | | | | | 27 | | | Moderate | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 6 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 7 | | | | | | | 9 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 8 | | | | | | | 15 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 9 | 12.5 | 6 | 1.5 | 0.579 | 6 | 0.369 | 21 | 6 | 4.5 | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 10 | | | | | | | 10 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 11 | | | | | | | 7 | | | Mild | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | n.p. | 100% | n.p. | 12 | | | | | | | 21 | | | Mild | | Gautheron et al. (1994) |
| Triton X-100 (1%) | 9002-93-1 | liquid | surfactant | 1% | n.p. | - | 0.083 | | | 0.063 | | | | | | Mild | | Casterton et al. (1996) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 1 | 6 | | | 5.312 | | | 85.7 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 2 | 6.7 | | | 4.624 | | | 76 | | | Severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 3 | 6 | | | 5.337 | | | 86.1 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 4 | 3.33 | | | 3.617 | | | 57.58 | | | Severe | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 5 | 7.7 | | | 2.567 | | | 46.2 | | | Moderate | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | surfactant | 10% | n.p. | - | 0.281 | | | 1.003 | | | | | | Severe | | Casterton et al. (1996) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | 98 | 1 | 5.3 | | | 4.6 | | | 74.3 | | | Severe | | Balls et al. (1995) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | 98 | 2 | 8.3 | | | 6.553 | | | 106.6 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | 98 | 3 | 3.7 | | | 5.099 | | | 80.2 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | 98 | 4 | 5 | | | 4.79 | | | 76.79 | | | Very severe | | Balls et al. (1995) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | 98 | 5 | 7.7 | | | 3.06 | | | 53.6 | | | Moderate | | Balls et al. (1995) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 5% | n.p. | - | 0.281 | | | 0.564 | | | | | | Moderate | | Casterton et al. (1996) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 1 (1) | 3.3 | 3 | 1.0 | 0.023 | 3 | 0.004 | 3.7 | 3 | 1.1 | Mild | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 1 (2) | 1.3 | 3 | 1.0 | 0.035 | 3 | 0.006 | 1.8 | 3 | 1.0 | Mild | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 2 (1) | 1.4 | 3 | 0.6 | 0.298 | 3 | 0.123 | 5.8 | 3 | 2.4 | Mild | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 2 (2) | 0.0 | 3 | 0.6 | 0.226 | 3 | 0.086 | 3.4 | 3 | 1.0 | Mild | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 3 (1) | 2.7 | 3 | 1.0 | 0.023 | 3 | 0.009 | 3.0 | 3 | 1.1 | Nonirritant | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | surfactant | 10% | 98 | 3 (2) | 1.4 | 3 | 0.6 | 0.038 | 3 | 0.013 | 1.9 | 3 | 0.6 | Nonirritant | | Southee (1998) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 1 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 2 | | | | | | | 1 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 3 | | | | | | | -1 | | | Nonirritant | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 4 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 5 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 6 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 7 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 8 | | | | | | | 2 | | | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 9 | 3 | 6 | 1.6 | 0.008 | 6 | 0.014 | 3 | 6 | 1.7 | Mild | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 10 | | | | | | | no data | | | n.a. | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 11 | | | | | | | -2 | | | Nonirritant | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | n.p. | 10% | n.p. | 12 | | | | | | | 0 | | | Mild | | Gautheron et al. (1994) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 1 | -0.7 | | | 0.006 | | | -0.6 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 2 | -0.3 | | | -0.052 | | | -1.1 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 3 | -2 | | | 0.026 | | | -1.6 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 4 | 2.67 | | | 0.0003 | | | 2.711 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | n.p. | 98 | 5 | 0.1 | | | 0.026 | | | 0.4 | | | Mild | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 1 (1) | 0.3 | 3 | 0.0 | 0.003 | 3 | 0.012 | 0.3 | 3 | 0.2 | Mild | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 1 (2) | 0.0 | 3 | 1.5 | 0.004 | 3 | 0.01 | 0.0 | 3 | 1.6 | Mild | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 2 (1) | 0.4 | 3 | 0.6 | 0.001 | 3 | 0.002 | 0.4 | 3 | 0.6 | Mild | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 2 (2) | 0.4 | 3 | 0.6 | 0.003 | 3 | 0.008 | 0.4 | 3 | 0.5 | Nonirritant | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 3 (1) | 0.0 | 3 | 0.0 | 0.022 | 3 | 0.018 | 0.3 | 3 | 0.3 | Nonirritant | | Southee (1998) |

***In Vitro* Data for Substances Tested in the BCOP Assay: Sorted by Substance Name**

| Substance | CASRN | Form Tested | Solubility | Concentration Tested | Purity (%) | Lab No. | Mean Opacity | n | SD - Opacity | Mean OD ₄₉₀ | n | SD - OD ₄₉₀ | <i>In Vitro</i> Score ¹ | n | SD - Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | Reference |
|-----------|-----------|-------------|------------|----------------------|------------|---------|--------------|---|--------------|------------------------|---|------------------------|------------------------------------|---|------------|---|---------------------------------------|-------------------------|
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | 98 | 3 (2) | 0.0 | 3 | 1.0 | 0.001 | 3 | 0.022 | 0.0 | 3 | 1.3 | Nonirritant | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | surfactant | 100% | n.p. | - | -0.006 | | | 0.005 | | | | | | Mild | Mild | Casterton et al. (1996) |
| Xylene | 1330-20-7 | liquid | n.p. | 100% | n.p. | - | 0.220 | | | 0.257 | | | | | | Moderate | Moderate | Casterton et al. (1996) |

Abbreviations: CASRN=Chemical Abstract Services Registry Number; n=number of replicates; n.s.=not applicable; n.p.=not provided; OD=optical density; SD=standard deviation

¹*In Vitro* Score = mean opacity score + (15 x mean OD₄₉₀ value) represents the BCOP ocular irritancy classification assigned for each chemical in the study for each test for a specific substance

²*In Vitro* Classification represents the BCOP ocular irritancy classification assigned for each independent test result, according to the classification system used

³Consensus call represents the overall BCOP ocular irritancy classification assigned for each chemical in the study based on the majority of ocular irritancy classification calls. When there was an even number of different irritancy classifications for a test substance, the more severe irritancy classification was used for the overall classification for that test substance.

*solubility uncertain

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Appendix D

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications

| | | |
|-----------|---|-------------|
| D1 | BCOP Data Sorted by Reference | D-3 |
| D2 | BCOP Data Sorted by Substance Name | D-29 |

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Appendix D1

BCOP Data Sorted by Reference

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Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------------|
| Alkyl phosphoric acid ester/amine salt | - | liquid | 100% | n.p. | - | 91.3 | Severe | Severe | Category 1 | 4 | SCNM | R41 | Bailey et al. (2004) |
| Aromatic hydrocarbon #1 | - | liquid | 100% | n.p. | - | 2.7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Aromatic hydrocarbon #2 | - | liquid | 100% | n.p. | - | 4.6 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Aryl phosphonates | - | liquid | 100% | n.p. | - | 41.3 | Moderate | Moderate | Category 2B | | SCNM | SCNM | Bailey et al. (2004) |
| Carboxylic acid amides | - | solid | 100% | n.p. | - | 27.5 | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Bailey et al. (2004) |
| 2-Chloro-2,4,4-trimethylpentane | - | liquid | 100% | n.p. | - | 4.1 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Clarified slurry oil | - | liquid | 100% | n.p. | - | 2.3 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Cutting fluid (conc.) #1 | - | liquid | 100% | n.p. | - | 3.5 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Cutting fluid (conc.) #2 | - | liquid | 100% | n.p. | - | 4.9 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Bailey et al. (2004) |
| Ethylhexyl acid phosphate ester | - | liquid | 100% | n.p. | - | 130.5 | Severe | Severe | Category 1 | 4 | SCNM | R41 | Bailey et al. (2004) |
| 5-Ethylidene-2-norbornene | 16219-75-3 | liquid | 100% | n.p. | - | 8.8 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Methyl cyclopentadiene dimer | - | liquid | 100% | n.p. | - | 0.7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Petroleum wax | - | solid | 100% | n.p. | - | 0.3 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Polyalkenylsuccinate ester/amine salt | - | liquid | 100% | n.p. | - | 2.3 | Mild | Mild | SCNM | | Category III | SCNM | Bailey et al. (2004) |
| Process oil | - | liquid | 100% | n.p. | - | 2.7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Thiadiazole alkyl derivative | - | liquid | 100% | n.p. | - | 10.9 | Moderate | Moderate | SCNM | | Category III | SCNM | Bailey et al. (2004) |
| Acetone | 67-64-1 | liquid | 100% | 99 | 1 | 145.5 | Very severe | Very Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | 100% | 99 | 2 | 119.5 | Very severe | | | | | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | 100% | 99 | 3 | 120.4 | Very severe | | | | | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | 100% | 99 | 4 | 131.72 | Very severe | | | | | | Balls et al. (1995) |
| Acetone | 67-64-1 | liquid | 100% | 99 | 5 | 98.4 | Very severe | | | | | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 1 | 8.3 | Mild | Mild | Category 2B | | Category III | R36 | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 2 | 6.4 | Mild | | | | | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 3 | 7.2 | Mild | | | | | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 4 | 21.82 | Mild | | | | | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 5 | 5.2 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 1 | 1.8 | Mild | Mild | SCNM ¹¹ | | SCNM | SCNM | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 2 | 0.1 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 3 | 2.6 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 4 | 0.788 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 5 | 1.2 | Mild | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 1 | 142.2 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 2 | 157.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 3 | 123.8 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 4 | 137.5 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 5 | 121.1 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 1 | 126.6 | Very severe | Very Severe | Category 1 | 2 | Category I | R41 | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 2 | 163.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 3 | 110.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 4 | 130.41 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 5 | 111.1 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | 1% | 98 | 1 | 112.8 | Very severe | Very Severe | Category 1 | 1 | Category II | R41 | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | 1% | 98 | 2 | 90.5 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | 1% | 98 | 3 | 99.4 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | 1% | 98 | 4 | 62.49 | Severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1 %) | 8001-54-5 | liquid | 1% | 98 | 5 | 78.6 | Severe | | | | | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 1 | 173 | Very severe | Very Severe | Category 1 | 2 | SCNM | R41 | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 2 | 288.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 3 | 91.1 | Very severe | | | | | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 4 | 149.86 | Very severe | | | | | | Balls et al. (1995) |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 5 | 145.3 | Very severe | | | | | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 1 | 49.5 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 2 | 37.5 | Moderate | | | | | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 3 | 43.9 | Moderate | | | | | | Balls et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--------------------------------|--------------------|-------------|----------------------|--------------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------|
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 4 | 23.86 | Mild | | | | | | Balls et al. (1995) |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 5 | 18.1 | Mild | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 1 | 90.6 | Very severe | Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 2 | 32.9 | Moderate | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 3 | 31.5 | Moderate | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 4 | 81.55 | Very severe | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 5 | 67.1 | Severe | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 5 | 67.1 | Severe | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 1 | 27.8 | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 2 | 27.2 | Moderate | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 3 | 34.8 | Moderate | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 4 | 102.918 | Very severe | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 5 | 26.4 | Moderate | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 5 | 26.4 | Moderate | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 1 | 97.6 | Very severe | Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 2 | 98.1 | Very severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 3 | 57.5 | Severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 4 | 64.33 | Severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 5 | 73.9 | Severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 5 | 73.9 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 1 | 72.2 | Severe | Severe | Category 1 | 2 | SCNM | R41 | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 2 | 86.3 | Very severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 3 | 63.6 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 4 | 68.72 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 5 | 65.4 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 5 | 65.4 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 1 | 43.5 | Moderate | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 2 | 89.6 | Very severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 3 | 81 | Very severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 4 | 71.22 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 5 | 76.7 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 5 | 76.7 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 1 | 11 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 2 | 4.1 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 3 | 12.1 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 4 | 4.33 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 5 | 14.5 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 5 | 14.5 | Mild | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. ¹² | 1 | 147 | Very severe | Very Severe | Category 1 | 4 | SCNM | SCNM | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 2 | 122.9 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 3 | 97.3 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 4 | 101.78 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 5 | 101.5 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 5 | 101.5 | Very severe | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 1 | 85 | Very severe | Moderate | Category 1 | 2 | Category I | R41 | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 2 | 49.9 | Moderate | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 3 | 70.1 | Severe | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 4 | 52.24 | Moderate | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 5 | 43.2 | Moderate | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 5 | 43.2 | Moderate | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 1 | 304.1 | Very severe | Very Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 2 | 391.1 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 3 | 418 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 4 | 467.09 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 5 | 307.5 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 5 | 307.5 | Very severe | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 1 | 9.9 | Mild | Mild | Category 2A | | Category II | SCNM | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 2 | 11.2 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 3 | 10.8 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 4 | 14.43 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 5 | 5.6 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 5 | 5.6 | Mild | | | | | | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 1 | 103.8 | Very severe | | | | | | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 2 | 115 | Very severe | | | | | | Balls et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|----------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------|
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 3 | 131.7 | Very severe | Very Severe | SCNM | | Category I | SCNM | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 4 | 130.26 | Very severe | | | | | | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 5 | 78.8 | Severe | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 1 | 18.2 | Mild | Mild | Category 1 | 1 | Category I | R41 | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 2 | 25.3 | Moderate | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 3 | 20.5 | Mild | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 4 | 31.533 | Moderate | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 5 | 8.3 | Mild | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 5 | 8.3 | Mild | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 | 74.4 | Severe | Severe | Category 2A | | Category III | Nonirritant | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 | 53.2 | Moderate | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 | 63.3 | Severe | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 4 | 98.01 | Very severe | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 5 | 64.2 | Severe | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 1 | 19.7 | Mild | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 2 | 28.4 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 3 | 47.1 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 4 | 44.31 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 5 | 20.6 | Mild | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 1 | 62 | Severe | Nonsevere | Category 2A | | Category II | R36 | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 2 | 28.2 | Moderate | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 3 | 30.7 | Moderate | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 4 | 58.71 | Severe | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 5 | 19.6 | Mild | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 1 | 27.5 | Moderate | Mild | Category 2B | | Category III | Nonirritant | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 2 | 14.1 | Mild | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 3 | 5.5 | Mild | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 4 | 5.543 | Mild | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 5 | 19.6 | Mild | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 1 | 27.4 | Moderate | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 2 | 33.7 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 3 | 10.5 | Mild | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 4 | 8.633 | Mild | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 5 | 9 | Mild | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 1 | 45.5 | Moderate | Nonsevere | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 2 | 151.9 | Very severe | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 3 | 64.9 | Severe | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 4 | 23.023 | Mild | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 5 | 18.2 | Mild | | | | | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 1 | -2 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 2 | -0.2 | Mild | | | | | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 3 | 0.3 | Mild | | | | | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 4 | 3.08 | Mild | | | | | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 5 | 0.1 | Mild | | | | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 1 | 71.5 | Severe | Severe/Very Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 2 | 83.6 | Very severe | | | | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 3 | 63.2 | Severe | | | | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 4 | 48.19 | Moderate | | | | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 5 | 42.9 | Moderate | | | | | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | 20% | 99 | 1 | 116.8 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | 20% | 99 | 2 | 133.9 | Very severe | | | | | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | 20% | 99 | 3 | 103.4 | Very severe | | | | | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | 20% | 99 | 4 | 118.7 | Very severe | | | | | | Balls et al. (1995) |
| Imidazole | 288-32-4 | solid | 20% | 99 | 5 | 90.8 | Very severe | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 1 | 54.4 | Moderate | | | | | | Balls et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------|
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 2 | 74 | Severe | Moderate | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 3 | 67.7 | Severe | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 4 | 41.78 | Moderate | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 5 | 42.2 | Moderate | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 1 | 39.7 | Moderate | Severe | Category 2A | | Category III | SCNM | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 2 | 59.5 | Severe | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 3 | 72.3 | Severe | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 4 | 78.5 | Severe | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 5 | 39.3 | Moderate | | | | | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 1 | 67 | Severe | Nonsevere | SCNM | | Category III | SCNM | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 2 | 16.9 | Mild | | | | | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 3 | 21 | Mild | | | | | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 4 | 63.76 | Severe | | | | | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 5 | 33.8 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 1 | 71.2 | Severe | Moderate | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 2 | 46.5 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 3 | 51.6 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 4 | 53.9 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 5 | 51.1 | Moderate | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 1 | 16.3 | Mild | Mild | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 2 | 5.9 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 3 | 10.1 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 4 | 17.53 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 5 | 11 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 1 | 3.8 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 2 | 4.6 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 3 | 1.4 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 4 | 1.71 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 5 | 2.7 | Mild | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 1 | 93 | Very severe | Severe | Category 2A | | Category III | R36 | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 2 | 67.4 | Severe | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 3 | 52.2 | Moderate | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 4 | 78.71 | Severe | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 5 | 60.8 | Severe | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 1 | 8.8 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 2 | 20.1 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 3 | 10.3 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 4 | 13.25 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 5 | 10.3 | Mild | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 1 | 120.8 | Very severe | Very Severe | Category 1 | NC | Category I | SCNM | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 2 | 66.3 | Severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 3 | 42 | Moderate | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 4 | 88.73 | Very severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 5 | 72.5 | Severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 1 | 136 | Very severe | Very Severe | Category 1 | 1 | Category I | R41 | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 2 | 144.9 | Very severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 3 | 161 | Very severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 4 | 161.2 | Very severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 5 | 143 | Very severe | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 1 | 43.4 | Moderate | Moderate | Category 2B | | Category II | R36 | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 2 | 78.9 | Severe | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 3 | 39.8 | Moderate | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 4 | 14.54 | Mild | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 5 | 28 | Moderate | | | | | | Balls et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------|--------------------|-------------|----------------------|---------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|---------------------|
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 1 | 29.5 | Moderate | Moderate | SCNM | | SCNM | SCNM | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 2 | 26.4 | Moderate | | | | | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 3 | 40.8 | Moderate | | | | | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 4 | 31.82 | Moderate | | | | | | Balls et al. (1995) |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 5 | 23.5 | Moderate | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 1 | 0.6 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 2 | 2.5 | Mild | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 3 | -1.3 | Nonirritant | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 4 | 1.08 | Mild | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 5 | 2.8 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 1 | 16.2 | Mild | Mild | SCNM | | SCNM | SCNM | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 2 | 22.9 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 3 | 12 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 4 | 17.38 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 5 | 6.5 | Mild | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 1 | 120.3 | Very severe | Very Severe | Category 1 | 3 | Category I | R41 | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 2 | 84.2 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 3 | 125.7 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 4 | 123.09 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 5 | 153.8 | Very severe | | | | | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 1 | 140.7 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 2 | 145.4 | Very severe | | | | | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 3 | 132.4 | Very severe | | | | | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 4 | 199.02 | Very severe | | | | | | Balls et al. (1995) |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 5 | 122.7 | Very severe | | | | | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 1 | 0.3 | Mild | Mild | Category 1 | 1 | Category I | R41 | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 2 | 0.4 | Mild | | | | | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 3 | 2.1 | Mild | | | | | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 4 | 1.85 | Mild | | | | | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 5 | 3.1 | Mild | | | | | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 1 | 285.2 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 2 | 224.1 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 3 | 254.7 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 4 | 348.27 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 5 | 247.2 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 1 | 167.4 | Very severe | Very Severe | Category 2B | | Category III | R36 | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 2 | 133.2 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 3 | 146.5 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 4 | 171.08 | Very severe | | | | | | Balls et al. (1995) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 5 | 132.3 | Very severe | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 1 | 31.7 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 2 | 31.7 | Moderate | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 3 | 27.3 | Moderate | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 4 | 26.22 | Moderate | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 5 | 12.3 | Mild | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 1 | 47.3 | Moderate | Severe | Category 1 | NC | Category I | R36 | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 2 | 93 | Very severe | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 3 | 63.2 | Severe | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 4 | 59.61 | Severe | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 5 | 53.3 | Moderate | | | | | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 1 | 2.1 | Mild | Mild | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 2 | 7.6 | Mild | | | | | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 3 | 5.8 | Mild | | | | | | Balls et al. (1995) |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 4 | 49.59 | Moderate | | | | | | Balls et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------|--------------------|-------------|----------------------|---------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 5 | 4.9 | Mild | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 1 | 143.6 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 2 | 118.4 | Very severe | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 3 | 96.2 | Very severe | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 4 | 64.531 | Severe | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 5 | 62.9 | Severe | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 1 | 23.6 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 2 | 7.9 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 3 | 14.2 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 4 | 20.65 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 5 | 8.9 | Mild | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 1 | 149.4 | Very severe | Very Severe | Animal died | | Animal died | Animal died | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 2 | 139.2 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 3 | 135.6 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 4 | 137.44 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 5 | 99.1 | Very severe | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 1 | 43.3 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 2 | 33.2 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 3 | 37.2 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 4 | 38.41 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 5 | 26.1 | Moderate | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 1 | 272 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 2 | 225 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 3 | 296.9 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 4 | 323.08 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 5 | 203.7 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 1 | 81.9 | Very severe | Severe/Very Severe | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 2 | 49.8 | Moderate | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 3 | 75.3 | Severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 4 | 92.97 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 5 | 79.3 | Severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 1 | 74.3 | Severe | Very Severe | Category 2A | | Category III | Nonirritant | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 2 | 106.6 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 3 | 80.2 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 4 | 76.79 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 5 | 53.6 | Moderate | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 1 | 85.7 | Very severe | Severe/Very Severe | Category 1 | NC | Category II | R41 | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 2 | 76 | Severe | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 3 | 86.1 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 4 | 57.58 | Severe | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 5 | 46.2 | Moderate | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 1 | -0.6 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 2 | -1.1 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 3 | -1.6 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 4 | 2.711 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 5 | 0.4 | Mild | | | | | | Balls et al. (1995) |
| Anti-Dandruff Shampoo (HZY) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Baby Shampoo No. 1 (HZZ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Baby Shampoo No. 2 (HZZ) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Bubble Bath (HZK) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Cleansing Gel (HZQ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Eye Make-Up Remover (HZH) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Facial Cleanser (HZZ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Foam Bath (HZL) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Gel Cleanser (HZE) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | SCNM | | Category I | SCNM | Casterton et al. (1996) |
| Mild Shampoo (HZJ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Polishing Scrub (HZT) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Shampoo No. 2 (HZX) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Shampoo No. 7 (HZA) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Shower Gel (HZS) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Skin Cleanser (HZI) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Acetone | 67-64-1 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | n.p. | - | - | Severe | Severe | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | n.p. | - | - | Severe | Severe | Category 1 | 2 | Category I | R41 | Casterton et al. (1996) |
| 4-Bromophenotole | - | n.p. | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| n-Butanol | 71-36-3 | liquid | 100% | n.p. | - | - | Severe | Severe | | | | | Casterton et al. (1996) |
| 2-Butoxyethanol | 111-76-2 | liquid | 100% | n.p. | - | - | Severe | Severe | | | | | Casterton et al. (1996) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 100% | n.p. | - | - | Mild | Mild | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Cetylpyridinium bromide (1%) | 140-72-7 | liquid | 1% | n.p. | - | - | Moderate | Moderate | | | | | Casterton et al. (1996) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | n.p. | - | - | Severe | Severe | Category 1 | 2 | SCNM | R41 | Casterton et al. (1996) |
| Cyclohexanol | 108-93-0 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 1 | 2 | Category I | R41 | Casterton et al. (1996) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | n.p. | - | - | Mild | Mild | Category 2A | | Category II | SCNM | Casterton et al. (1996) |
| 2,4-Difluoronitrobenzene | 446-35-5 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| 1,3-Diisopropylbenzene | 99-62-7 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | n.p. | - | - | Severe | Severe | SCNM | | Category I | SCNM | Casterton et al. (1996) |
| Dodecane | 112-40-3 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| 2-Ethylhexanol | 104-76-7 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| 3-Ethyltoluene | 620-14-4 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Glycerol | 56-81-5 | liquid | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| 1,5-Hexadiene | 592-42-7 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Isobutanol | 78-83-1 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| Isopropanol | 67-63-0 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category III | SCNM | Casterton et al. (1996) |
| Methyl acetate | 79-20-9 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category III | R36 | Casterton et al. (1996) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| 1-Methylpropyl benzene | 135-98-8 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Paraffluoraniline | 371-40-4 | liquid | 100% | n.p. | - | - | Moderate | Moderate | SCNM | | SCNM | SCNM | Casterton et al. (1996) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Polyethylene glycol 600 | - | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Propylene glycol | 57-55-6 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | n.p. | - | - | Severe | Severe | Category 2B | | Category III | R36 | Casterton et al. (1996) |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | n.p. | - | - | Moderate | Moderate | Category 1 | NC | Category I | R36 | Casterton et al. (1996) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Sodium lauryl sulfate (30 %) | 151-21-3 | liquid | 30% | n.p. | - | - | Moderate | Moderate | | | | | Casterton et al. (1996) |
| Toluene | 108-88-3 | liquid | 100% | n.p. | - | - | Severe | Severe | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 5% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category III | Nonirritant | Casterton et al. (1996) |
| Triton X-100 (1%) | 9002-93-1 | liquid | 1% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Triton X-100 (10%) | 9002-93-1 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 1 | NC | Category II | R41 | Casterton et al. (1996) |
| Tween 20 | 9005-64-5 | liquid | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Xylene | 1330-20-7 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Nonirritant | | Category II | Nonirritant | Casterton et al. (1996) |
| Amway all fabric bleach | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway automatic dishwashing compound for soft water | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway automatic dishwashing compound, standard formula | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway concrete floor cleaner | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | SCNM | R41 | Casterton et al. (1996) |
| Amway Dish Drops dishwashing liquid | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | | | | | Casterton et al. (1996) |
| Amway dry chlorine bleach | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway fabric softener | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Amway Kool Wash delicate fabric detergent | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R36 | Casterton et al. (1996) |
| Amway LOC all purpose cleaner | - | n.p. | 100% | n.p. | - | - | Mild | Mild | SCNM | | SCNM | Nonirritant | Casterton et al. (1996) |
| Amway prewash liquid | - | liquid | 100% | n.p. | - | - | Mild | Mild | SCNM | | Category I | SCNM | Casterton et al. (1996) |
| Amway Pursue disinfectant cleaner | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway Redu dye stain remover | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Category 2A | | Category II | Nonirritant | Casterton et al. (1996) |
| Amway SA8 laundry liquid | - | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Amway SA8 limited phos laundry powder | - | solid | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 1 | 156 | Severe | Severe | Category 2A | | Category III | R36 | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 2 | 138 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 3 | 232 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 4 | 156 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 5 | 132 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 6 | 191 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 7 | 190 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 8 | 166 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 9 | 123 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 10 | 101 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 11 | 200 | Severe | | | | | | Gautheron et al. (1994) |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 12 | 90 | Severe | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 1 | 5 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 2 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 3 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 4 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 5 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 6 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 7 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 8 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 9 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 10 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 11 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 12 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 1 | 7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 2 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 3 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 4 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 5 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 6 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 7 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 8 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 9 | 13 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|-----------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 10 | 11 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 12 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 1 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 3 | -3 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 6 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 8 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 10 | 0 | Mild | Gautheron et al. (1994) | | | | | |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 11 | -2 | Nonirritant | Gautheron et al. (1994) | | | | | |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 12 | 2 | Mild | Gautheron et al. (1994) | | | | | |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 1 | 128 | Severe | Severe | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 2 | 124 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 3 | 163 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 4 | 106 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 5 | 128 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 6 | 129 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 7 | 142 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 8 | 129 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 9 | 166 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 10 | no data | n.a. ¹³ | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 11 | 142 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 12 | 116 | Severe | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 1 | 4 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 3 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 5 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 6 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 8 | -10 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 9 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 10 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 11 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 1 | 0 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 2 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 3 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 6 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 8 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 11 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 12 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 1 | 48 | Moderate | | | | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 2 | 44 | Moderate | | | | | Gautheron et al. (1994) | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 3 | 64 | Severe | | | | | Gautheron et al. (1994) | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|-------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|--------------|-------------|-------------------------|
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 4 | 35 | Moderate | Moderate | Category 2A | | Category II | R36 | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 5 | 35 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 6 | 30 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 7 | 80 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 8 | 32 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 9 | 42 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 10 | 53 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 11 | 35 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 12 | 49 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 1 | 92 | Severe | | | | | | Severe | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 2 | 108 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 3 | 96 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 4 | 81 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 5 | 130 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 6 | 93 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 7 | 104 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 8 | 90 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 9 | 142 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 11 | 118 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 12 | 108 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 1 | 96 | Severe | Severe | Category 2A | | Category II | R36 | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 2 | 72 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 3 | 106 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 4 | 73 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 5 | 119 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 6 | 103 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 7 | 88 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 8 | 46 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 9 | 100 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 10 | 60 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 11 | 200 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 12 | 59 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 1 | 53 | Moderate | Moderate | SCNM | | SCNM | SCNM | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 2 | 41 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 3 | 105 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 4 | 39 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 5 | 42 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 6 | 34 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 7 | 49 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 8 | 41 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 9 | 92 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 11 | 36 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 12 | 56 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 1 | 104 | Severe | Severe | Category 1 | 2 | Category I | R41 | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 2 | 134 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 3 | 82 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 4 | 118 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 5 | 110 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 6 | 66 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 7 | 88 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 8 | 193 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 9 | 82 | Severe | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 11 | 213 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 12 | 135 | Severe | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 1 | 23 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 2 | 23 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 3 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 4 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 5 | 16 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 6 | 31 | Moderate | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 7 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 8 | 71 | Severe | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 9 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 10 | 20 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 11 | 34 | Moderate | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 12 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 1 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 2 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 3 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 4 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 5 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 6 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 7 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 8 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 9 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 12 | 8 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 1 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 2 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 3 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 4 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 5 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 6 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 7 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 8 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 9 | 9 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 11 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 12 | 22 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 1 | -1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 2 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 3 | -8 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 4 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 5 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 6 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 8 | -6 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 10 | -1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 11 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 12 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 | 58 | Severe | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 | 67 | Severe | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 | 70 | Severe | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|--------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|--|--|--------------|-------------|-------------------------|
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 4 | 45 | Moderate | Severe | SCNM | | Category II | Nonirritant | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 5 | 60 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 6 | 64 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 7 | 58 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 8 | 51 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 9 | 46 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 11 | 104 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 12 | 45 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 1 | 99 | Severe | | | | | | Severe | | | Category III | Nonirritant | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 2 | 100 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 3 | 128 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 4 | 75 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 5 | 75 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 6 | 85 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 7 | 94 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 8 | 93 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 9 | 84 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 10 | 75 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 11 | 101 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 12 | 86 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 1 | 26 | Moderate | Moderate | | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 2 | 38 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 3 | 31 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 4 | 33 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 5 | 21 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 6 | 29 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 7 | 28 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 8 | 38 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 9 | 26 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 11 | 38 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 12 | 42 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 1 | 73 | Severe | Severe | | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 2 | 63 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 3 | 61 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 4 | 65 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 5 | 33 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 6 | 34 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 7 | 87 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 8 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 9 | 50 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 10 | 39 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 11 | 68 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Furan | 110-00-9 | liquid | 100% | n.p. | 12 | 51 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 1 | 63 | Severe | Severe | | | Category IV | Nonirritant | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 2 | 81 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 3 | 90 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 4 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 5 | 108 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 6 | 66 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 7 | 90 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 8 | 57 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 9 | 88 | Severe | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 11 | 75 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 12 | 63 | Severe | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 1 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 3 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 6 | -4 | Nonirritant | Mild | SCNM | | SCNM | SCNM | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 8 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 9 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 10 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 11 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 12 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 1 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 2 | 24 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 3 | 25 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 4 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 5 | 13 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 6 | 6 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 7 | 15 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 8 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 9 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 10 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 11 | 23 | Mild | | | | | | Gautheron et al. (1994) |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 12 | 21 | Mild | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 1 | 93 | Severe | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 2 | 40 | Moderate | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 3 | 53 | Moderate | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 4 | 33 | Moderate | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 5 | 91 | Severe | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 6 | 42 | Moderate | Severe | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 7 | 82 | Severe | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 8 | 76 | Severe | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 9 | 70 | Severe | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 11 | 48 | Moderate | | | | | | Gautheron et al. (1994) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 12 | 102 | Severe | | | | | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 1 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 2 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 3 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|---------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|------------|---|------------|-----|-------------------------|
| Hexane | 110-54-3 | liquid | 100% | n.p. | 5 | 2 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 6 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 7 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 8 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 10 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 11 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 | 75 | Severe | | | | | | Severe | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 | 73 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 | 140 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 4 | 81 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 5 | 96 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 6 | 62 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 7 | 82 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 8 | 122 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 9 | 64 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 10 | 81 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 11 | 114 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 12 | 65 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 1 | 0 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 3 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 5 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 6 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 8 | 12 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 9 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 11 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 12 | -4 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 1 | 53 | Moderate | Moderate | Category 2B | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 2 | 50 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 3 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 4 | 28 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 5 | 45 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 6 | 35 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 7 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 8 | 43 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 9 | 63 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 11 | 89 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 12 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 1 | 81 | Severe | Severe | SCNM | | SCNM | SCNM | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 2 | 82 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 3 | 103 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 4 | 76 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 5 | 92 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 6 | 68 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 7 | 90 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 8 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 9 | 102 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|-----------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|-------------|-------------|-------------------------|
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 11 | 76 | Severe | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 12 | 55 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 1 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 2 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 3 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 4 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 6 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 7 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 8 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 11 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 1 | 0 | Mild | | | | | | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 2 | -1 | Nonirritant | | | | | | | | | | | Gautheron et al. (1994) |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 3 | -1 | Nonirritant | | | | | | | | | | | Gautheron et al. (1994) |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 4 | 1 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 5 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 6 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 7 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 8 | -8 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 9 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 10 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 11 | -4 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Mercaptopyriridine | 1450-85-7 | solid | 20% | n.p. | 12 | -3 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 1 | 88 | Severe | Severe | Nonirritant | | Category II | Nonirritant | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 2 | 88 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 3 | 54 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 4 | 71 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 5 | 81 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 6 | 108 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 7 | 37 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 8 | 19 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 9 | 99 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 11 | 179 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 12 | 102 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 1 | 61 | Severe | Severe | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 2 | 69 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 3 | 66 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 4 | 47 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 5 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 6 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 7 | 65 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 8 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 9 | 57 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 11 | 74 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 12 | 88 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 1 | 22 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 2 | 25 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 3 | 27 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 4 | 19 | Mild | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|-----------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|--------------|-------------|-------------------------|
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 5 | 21 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 6 | 23 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 7 | 16 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 8 | 16 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 9 | 19 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 11 | 20 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 12 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 1 | 2 | Mild | | | | | | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 2 | 1 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 3 | 0 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 4 | 1 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 5 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 6 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 7 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 8 | -4 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 9 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 11 | -3 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| MYRJ-45 | - | surfactant | 10% | n.p. | 12 | -1 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 1 | 11 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 2 | 8 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 3 | 9 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 4 | 4 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 5 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 6 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 7 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 8 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 9 | 17 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 10 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 11 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 12 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 1 | 65 | Severe | | | | | | Moderate | Category 2B | | Category III | R36 | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 2 | 33 | Moderate | | | | | | | | | | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 3 | 42 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 4 | 49 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 5 | 66 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 6 | 48 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 7 | 37 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 8 | 25 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 9 | 61 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 11 | 31 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 12 | 64 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 1 | 61 | Severe | Severe | Nonirritant | | Category III | Nonirritant | | | | | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 2 | 79 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 3 | 75 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 4 | 34 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 5 | 70 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 6 | 46 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 7 | 54 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 8 | 44 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 9 | 50 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 10 | 67 | Severe | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|----------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|-------------|-------------|-------------------------|
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 11 | 62 | Severe | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 12 | 76 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 1 | 8 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 2 | 13 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 3 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 5 | 2 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 6 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 7 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 8 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 9 | 2 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 10 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 12 | 9 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 1 | 0 | Mild | | | | | | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 3 | 1 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 4 | 0 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 5 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 6 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 7 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 8 | -6 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 9 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 10 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 11 | -3 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 12 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 1 | 7 | Mild | Mild | Nonirritant | | Category III | Nonirritant | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 2 | 12 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 3 | 15 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 4 | 9 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 5 | 28 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 6 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 7 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 8 | 16 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 9 | 13 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 10 | 15 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 11 | 13 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 12 | 15 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 1 | 117 | Severe | Severe | Category 1 | 3 | Category I | R41 | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 2 | 156 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 3 | 109 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 4 | 111 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 5 | 164 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 6 | 174 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 7 | 103 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 8 | 50 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 9 | 139 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 11 | 94 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 12 | 19 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 1 | 7 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 2 | 7 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 3 | 14 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 4 | 4 | Mild | Gautheron et al. (1994) | | | | | | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|------------|---|-------------|-----|-------------------------|
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 5 | 6 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 6 | 9 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 7 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 8 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 9 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 11 | 12 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 12 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 1 | 102 | Severe | | | | | | Severe | Category 1 | 4 | Category II | R41 | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 2 | 123 | Severe | | | | | | | | | | | Gautheron et al. (1994) |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 3 | 186 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 4 | 79 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 5 | 102 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 6 | 77 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 7 | 124 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 8 | 132 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 9 | 105 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 11 | 96 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 12 | 115 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 1 | 17 | Mild | Moderate | Category 1 | 1 | Category I | R41 | | | | | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 2 | 29 | Moderate | | | | | | | | | | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 3 | 8 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 4 | 46 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 5 | 52 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 6 | 24 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 7 | 15 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 8 | 18 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 9 | 58 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 11 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 12 | 72 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 1 | 2 | Mild | | | | | | Mild | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 2 | 2 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 3 | 9 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 4 | 5 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 5 | 3 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 6 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 7 | 4 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 8 | 3 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 9 | 3 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 10 | 9 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 11 | 11 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 12 | 4 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 1 | 5 | Mild | Mild | Nonirritant | | Category II | Nonirritant | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 3 | 2 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 4 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 6 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 7 | 2 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 8 | 19 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|--------------|-------------|-------------------------|
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 11 | 18 | Mild | Severe | SCNM | | SCNM | SCNM | Gautheron et al. (1994) | | | | | |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 1 | 146 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 2 | 175 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 3 | 169 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 4 | 152 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 5 | 140 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 6 | 120 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 7 | 129 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 8 | 173 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 9 | 151 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 11 | 203 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 12 | 104 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 1 | 47 | Moderate | | | | | | Moderate | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 2 | 42 | Moderate | | | | | | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 3 | 78 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 4 | 28 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 5 | 42 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 6 | 47 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 7 | 48 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 8 | 24 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 9 | 91 | Severe | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 11 | 28 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 12 | 47 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 1 | 2 | Mild | Mild | | | Category IV | Nonirritant | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 2 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 3 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 5 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 6 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 8 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 1 | 25 | Mild | Mild | | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 2 | 14 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 3 | 26 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 4 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 5 | 27 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 6 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 7 | 9 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 8 | 15 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 9 | 21 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 10 | 10 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 11 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 12 | 21 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 1 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 3 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|----------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 5 | 2 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 6 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 8 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 11 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 12 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anti-Dandruff Shampoo (HZY) 100% | - | n.p. | 10% | n.p. | - | 20.8 | Severe | Severe | Category I | 1 | Category I | R41 | Gettings et al. (1996) |
| Babv Shampoo No. 1 (HZP) 100% | - | n.p. | 10% | n.p. | - | 4.0 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Babv Shampoo No. 2 (HZF) 100% | - | n.p. | 10% | n.p. | - | 8.3 | Nonsevere | Nonsevere | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Bubble Bath (HZK) 100% | - | n.p. | 10% | n.p. | - | 17.5 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Cleansing Gel (HZQ) 100% | - | n.p. | 10% | n.p. | - | 2.3 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Eye Make-Up Remover (HZH) 100% | - | n.p. | 10% | n.p. | - | 0.2 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Facial Cleansing Foam (HZR) 25% | - | n.p. | 10% | n.p. | - | 4.1 | Nonsevere | Nonsevere | SCNM | | Category I | SCNM | Gettings et al. (1996) |
| Facial Cleanser (HZZ) 100% | - | n.p. | 10% | n.p. | - | 1.8 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Foam Bath (HZL) 100% | - | n.p. | 10% | n.p. | - | 18.6 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Gel Cleanser (HZE) 100% | - | n.p. | 10% | n.p. | - | 3.1 | Nonsevere | Nonsevere | SCNM | | Category I | SCNM | Gettings et al. (1996) |
| Hand Soap (HZU) 25% | - | n.p. | 10% | n.p. | - | 5.5 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Liquid Soap No. 2 (HZW) 25% | - | n.p. | 10% | n.p. | - | 5.6 | Nonsevere | Nonsevere | Category 2B | | Category III | Nonirritant | Gettings et al. (1996) |
| Liquid Soap No. 1 (HZB) 25% | - | n.p. | 10% | n.p. | - | 2.3 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Mild Shampoo (HZJ) 25% | - | n.p. | 10% | n.p. | - | 0.1 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Polishing Scrub (HZZ) 100% | - | n.p. | 10% | n.p. | - | 3.7 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 1 (HZC) 25% | - | n.p. | 10% | n.p. | - | 30.0 | Severe | Severe | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 2 (HZZ) | - | n.p. | 10% | n.p. | - | 14.0 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Shampoo No. 3 (HZM) 25% | - | n.p. | 10% | n.p. | - | 4.3 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 4 (HZV) 25% | - | n.p. | 10% | n.p. | - | 8.4 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 5 (HZD) 25% | - | n.p. | 10% | n.p. | - | 2.7 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 6 (HZN) 25% | - | n.p. | 10% | n.p. | - | 4.5 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 7 (HZA) 100% | - | n.p. | 10% | n.p. | - | 6.6 | Nonsevere | Nonsevere | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Shampoo No. 8 (HZG) 25% | - | n.p. | 10% | n.p. | - | 2.7 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shower Gel (HZS) 100% | - | n.p. | 10% | n.p. | - | 35.9 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Skin Cleanser (HZI) 100% | - | n.p. | 10% | n.p. | - | 15.8 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 1 (1) | 4.9 | Mild | Mild | Category 2B | | Category III | R36 | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 1 (2) | 5.9 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 2 (1) | 3.9 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 2 (2) | 3.6 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 3 (1) | 5.2 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 3 (2) | 6.7 | Mild | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (1) | 195.2 | Very severe | Very Severe | Category 1 | 4 | SCNM | R41 | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (2) | 135.2 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (3) | 137.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (4) | 156.5 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (5) | 138.0 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (6) | 176.8 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (7) | 183.0 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (8) | 175.4 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (1) | 154.4 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (2) | 156.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (3) | 150.8 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (4) | 157.2 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (5) | 157.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (6) | 157.0 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (7) | 160.2 | Very severe | | | | | | Southee (1998) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------|-------------|---|--------------|-------------|----------------|
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (1) | 156.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (2) | 163.4 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (3) | 169.7 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (4) | 162.8 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (5) | 151.6 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (6) | 163.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (7) | 167.8 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (8) | 156.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (9) | 160.0 | Very severe | | | | | | Southee (1998) | | | | | |
| Butyl cellulose | 111-76-2 | liquid | 100% | n.p. | 1 (1) | 108.3 | Very severe | | | | | | Very Severe | Category 1 | 1 | Category II | R41 | Southee (1998) |
| Butyl cellulose | 111-76-2 | liquid | 100% | n.p. | 1 (2) | 111.8 | Very severe | Southee (1998) | | | | | | | | | | |
| Butyl cellulose | 111-76-2 | liquid | 100% | n.p. | 2 (1) | 92.8 | Very severe | Southee (1998) | | | | | | | | | | |
| Butyl cellulose | 111-76-2 | liquid | 100% | n.p. | 2 (2) | 99.2 | Very severe | Southee (1998) | | | | | | | | | | |
| Butyl cellulose | 111-76-2 | liquid | 100% | n.p. | 3 (1) | 94.9 | Very severe | Moderate | Category 2A | | Category II | R36 | Southee (1998) | | | | | |
| Butyl cellulose | 111-76-2 | liquid | 100% | n.p. | 3 (2) | 98.2 | Very severe | | | | | | Southee (1998) | | | | | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 1 (1) | 53.9 | Moderate | | | | | | Southee (1998) | | | | | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 1 (2) | 47.7 | Moderate | | | | | | Southee (1998) | | | | | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 2 (1) | 47.1 | Moderate | | | | | | Southee (1998) | | | | | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 2 (2) | 47.2 | Moderate | | | | | | Southee (1998) | | | | | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 3 (1) | 42.2 | Moderate | | | | | | Southee (1998) | | | | | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 3 (2) | 41.8 | Moderate | | | | | | Southee (1998) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (1) | 36.6 | Moderate | | | | | | Moderate | Category 2A | | Category III | Nonirritant | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (2) | 37.6 | Moderate | | | | | | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (3) | 29.6 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (4) | 41.7 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (5) | 31.5 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (6) | 42.6 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (7) | 55.4 | Severe | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (1) | 52.7 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (2) | 54.5 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (3) | 61.7 | Severe | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (4) | 60.2 | Severe | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (5) | 54.2 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (6) | 73.4 | Severe | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (7) | 64.0 | Severe | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (8) | 51.4 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (1) | 47.0 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (2) | 45.4 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (3) | 44.4 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (4) | 45.7 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (5) | 54.6 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (6) | 44.8 | Moderate | Southee (1998) | | | | | | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (7) | 42.2 | Moderate | Southee (1998) | | | | | | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 1 (1) | 0.6 | Mild | Nonirritant | Nonirritant | | Category IV | Nonirritant | | | | | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 1 (2) | 0.3 | Mild | | | | | | | | | | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 2 (1) | 0.8 | Nonirritant | | | | | | | | | | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 2 (2) | 0.8 | Nonirritant | | | | | | | | | | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 3 (1) | 1.0 | Nonirritant | | | | | | | | | | | Southee (1998) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 3 (2) | 0.8 | Nonirritant | | | | | | | | | | | Southee (1998) |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 1 (1) | 23.1 | Mild | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 1 (2) | 17.2 | Mild | | | | | | Southee (1998) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------|--|--|--|--|----------------|
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 2 (1) | 34.6 | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 2 (2) | 39.1 | Moderate | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 3 (1) | 31.7 | Moderate | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 3 (2) | 29.9 | Moderate | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (1) | 142.0 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (2) | 137.6 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (3) | 112.2 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (4) | 131.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (5) | 145.6 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (6) | 162.6 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (7) | 125.5 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (1) | 138.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (2) | 140.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (3) | 134.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (4) | 157.2 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (5) | 137.6 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (6) | 152.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (7) | 148.7 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (1) | 139.6 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (2) | 140.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (3) | 124.0 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (4) | 128.7 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (5) | 123.4 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (6) | 121.2 | Very severe | | | | | | Southee (1998) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (7) | 131.3 | Very severe | Southee (1998) | | | | | | | | | | |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 1 (1) | 73.3 | Severe | Severe | Category 2B | | Category III | R36 | Southee (1998) | | | | | |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 1 (2) | 67.8 | Severe | | | | | | Southee (1998) | | | | | |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 2 (1) | 108.7 | Very severe | | | | | | Southee (1998) | | | | | |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 2 (2) | 101.7 | Very severe | | | | | | Southee (1998) | | | | | |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 3 (1) | 70.2 | Severe | | | | | | Southee (1998) | | | | | |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 3 (2) | 73.5 | Severe | | | | | | Southee (1998) | | | | | |
| Paraffluoraniline | 371-40-4 | liquid | 100% | 99 | 1 (1) | 31 | Moderate | Moderate | SCNM | | SCNM | SCNM | Southee (1998) | | | | | |
| Paraffluoraniline | 371-40-4 | liquid | 100% | 99 | 1 (2) | 35 | Moderate | | | | | | Southee (1998) | | | | | |
| Paraffluoraniline | 371-40-4 | liquid | 100% | 99 | 2 (1) | 38.3 | Moderate | | | | | | Southee (1998) | | | | | |
| Paraffluoraniline | 371-40-4 | liquid | 100% | 99 | 2 (2) | 37.5 | Moderate | | | | | | Southee (1998) | | | | | |
| Paraffluoraniline | 371-40-4 | liquid | 100% | 99 | 3 (1) | 22.1 | Mild | | | | | | Southee (1998) | | | | | |
| Paraffluoraniline | 371-40-4 | liquid | 100% | 99 | 3 (2) | 28.9 | Moderate | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 1 (1) | 11.2 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 1 (2) | 7.4 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 2 (1) | 5.2 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 2 (2) | 3.6 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 3 (1) | 7.7 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 3 (2) | 6.2 | Mild | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 1 (1) | 245.0 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 1 (2) | 227.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 2 (1) | 241.3 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 2 (2) | 235.5 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 3 (1) | 193.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 3 (2) | 214.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 1 (1) | 5.4 | Mild | | | | | | | | | | | Southee (1998) |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 1 (2) | 5.2 | Mild | | | | | | | | | | | Southee (1998) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|-----------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------|-------------|--|--------------|-----|----------------|
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 2 (1) | 15.9 | Mild | Mild | Category 1 | NC | Category I | SCNM | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 2 (2) | 17.3 | Mild | | | | | | | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 3 (1) | 8.7 | Mild | | | | | | | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 3 (2) | 5.6 | Mild | | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 1 (1) | 10.3 | Mild | Nonirritant | Category 1 | 4 | Category I | R41 | Southee (1998) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 1 (2) | 4.4 | Mild | | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 2 (1) | -0.3 | Nonirritant | | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 2 (2) | -0.1 | Nonirritant | | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 3 (1) | 2.7 | Nonirritant | | | | | | | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 3 (2) | 4.5 | Mild | | | | | | | | | | | |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 1 (1) | 3.7 | Mild | | | | | | Mild | Category 2B | | Category III | R36 | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 1 (2) | 1.8 | Mild | | | | | | | | | | | |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 2 (1) | 5.8 | Mild | | | | | | | | | | | |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 2 (2) | 3.4 | Mild | | | | | | | | | | | |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 3 (1) | 3.0 | Nonirritant | | | | | | | | | | | |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 3 (2) | 1.9 | Nonirritant | | | | | | | | | | | |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 1 (1) | 0.3 | Mild | Nonirritant | Nonirritant | | Category III | Nonirritant | Southee (1998) | | | | | |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 1 (2) | 0.0 | Mild | | | | | | | | | | | |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 2 (1) | 0.4 | Mild | | | | | | | | | | | |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 2 (2) | 0.4 | Nonirritant | | | | | | | | | | | |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 3 (1) | 0.3 | Nonirritant | | | | | | | | | | | |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 3 (2) | 0.0 | Nonirritant | | | | | | | | | | | |
| 1-1 (#1) | - | liquid | 100% | n.p. | - | 83.6 | Severe | Severe | Category 2A | | Category I | R36 | Swanson and Harbell (2000) | | | | | |
| 1-2 (#2) | - | liquid | 100% | n.p. | - | 12.4 | Mild | Mild | Category 2A | | Category II | R36 | Swanson and Harbell (2000) | | | | | |
| 1-3 (#3) | - | liquid | 100% | n.p. | - | 29.6 | Moderate | Moderate | Category 2A | | Category II | R36 | Swanson and Harbell (2000) | | | | | |
| 2-4 (#4) | - | liquid | 100% | n.p. | - | 7.3 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Swanson and Harbell (2000) | | | | | |
| 2-7 (#7) | - | liquid | 100% | n.p. | - | 21.4 | Moderate | Moderate | Nonirritant | | Category IV | Nonirritant | Swanson and Harbell (2000) | | | | | |
| 2-8 (#8) | - | liquid | 100% | n.p. | - | 31.8 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Swanson and Harbell (2000) | | | | | |
| Benchmark-Group 1 (#12) | - | liquid | 100% | n.p. | - | 60.1 | Severe | Severe | Category 2A | | Category I | R36 | Swanson and Harbell (2000) | | | | | |
| Benchmark-Group 2 (#13) | - | liquid | 100% | n.p. | - | 60.1 | Severe | Severe | Category 1 | 1 | Category I | R41 | Swanson and Harbell (2000) | | | | | |
| Ethanol (#14) | 64-17-5 | liquid | 100% | n.p. | - | 52.7 | Moderate | Moderate | Category 2A | | Category I | R36 | Swanson and Harbell (2000) | | | | | |
| Toilet Bowl Cleaner (#1) | - | liquid | 100% | n.p. | - | 13.5 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Swanson et al. (1995) | | | | | |
| Toilet Bowl Cleaner (#4) | - | liquid | 100% | n.p. | - | 15 | Mild | Mild | Nonirritant | | SCNM | Nonirritant | Swanson et al. (1995) | | | | | |
| All Purpose Cleaner (#5) | - | liquid | 100% | n.p. | - | 121.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Bathroom Cleaner (#6) | - | liquid | 100% | n.p. | - | 78.3 | Severe | Severe | SCNM | | Category III | Nonirritant | Swanson et al. (1995) | | | | | |
| All Purpose Cleaner (#7) | - | liquid | 100% | n.p. | - | 393.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Pot and Pan Cleaner (#8) | - | liquid | 100% | n.p. | - | -0.6 | Nonirritant | Nonirritant | | | | | Swanson et al. (1995) | | | | | |
| Heavy Duty Cleaner/Degreaser (#9) | - | liquid | 100% | n.p. | - | 354.7 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Floor Cleaner (#10) | - | liquid | 100% | n.p. | - | 70.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| General Cleaner (#11) | - | liquid | 100% | n.p. | - | 83.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| General Cleaner (#12) | - | liquid | 100% | n.p. | - | 113.5 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Cleaner/Degreaser (#13) | - | liquid | 100% | n.p. | - | 353.6 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Floor Stripper (#14) | - | liquid | 100% | n.p. | - | 157.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Heavy Duty Cleaner (#15) | - | liquid | 100% | n.p. | - | 357.1 | Severe | Severe | Category 1 | NC | Category I | R41 | Swanson et al. (1995) | | | | | |
| Degreaser (#16) | - | liquid | 100% | n.p. | - | 255.7 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) | | | | | |
| Floor Stripper (#17) | - | liquid | 100% | n.p. | - | 216.2 | Severe | Severe | Category 1 | NC | Category I | R41 | Swanson et al. (1995) | | | | | |
| Floor Stripper (#18) | - | liquid | 100% | n.p. | - | 444.3 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Reference

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-----------------------|
| Glass Cleaner (#19) | - | liquid | 100% | n.p. | - | 135.8 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) |
| Metal Cleaner (#20) | - | liquid | 100% | n.p. | - | 391.9 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) |
| Floor Cleaner (#2) | - | liquid | 100% | n.p. | - | -0.3 | Nonirritant | Nonirritant | | | | | Swanson et al. (1995) |
| Meat Room Degreaser (#3) | - | liquid | 100% | n.p. | - | 140.3 | Severe | Severe | | | | | Swanson et al. (1995) |

¹CASRN=Chemical Abstract Services Registry Number

²*In Vitro* Classification represents the BCOP ocular irritancy classification assigned for each chemical in the study for each test for a specific substance

³Consensus classification represents the overall BCOP ocular irritancy classification assigned for each chemical in the study based on the majority of ocular irritancy classification calls

⁴GHS=Globally Harmonized System (UN [2003])

⁵Eye Irritant Category 1 = irreversible effects on the eye/serious damage to the eye; Category 2A = reversible effects on the eye/irritating to the eyes; Category 2B = reversible effects on the eye/mildly irritating to the eyes; Nonirritant = not an eye

⁶NICEATM-defined subgroups assigned based on the lesions that drove classification of a GHS Category 1 substance. 1: based on lesions that are persistent; 2: based on lesions that are severe (not including corneal opacity score equal to 4); 3: based on lesions that are both severe and persistent; and 4: corneal opacity score equal to 4 at any time; NC: not classified because none of the above criteria were met

⁷EPA=U.S. Environmental Protection Agency (EPA [1996]).

⁸Toxicity Category I for the Primary Eye Irritation Study = Corrosive, or corneal involvement or irritation not reversible within 21 days; Category II = Corneal involvement or irritation clearing in 8-21 days; Category III = Corneal involvement or irritation clearing in 1-7 days; Category IV: minimal effects clearing in less than 24 hr

⁹EU=European Union (EU [2001]).

¹⁰Risk phrase R41 = risk of serious damage to the eyes; R36 = irritating to the eyes; nonirritant = not an eye irritant.

¹¹SCNM=Study Criteria Not Met

¹²n.p.=Not provided

¹³n.a.=Not applicable

Appendix D2

BCOP Data Sorted by Substance Name

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Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|--|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------|-------------|--|--------------|-------------|-------------------------|
| 1-1 (#1) | - | liquid | 100% | n.p. | - | 83.6 | Severe | Severe | Category 2A | | Category I | R36 | Swanson and Harbell (2000) | | | | | |
| 1-2 (#2) | - | liquid | 100% | n.p. | - | 12.4 | Mild | Mild | Category 2A | | Category II | R36 | Swanson and Harbell (2000) | | | | | |
| 1-3 (#3) | - | liquid | 100% | n.p. | - | 29.6 | Moderate | Moderate | Category 2A | | Category II | R36 | Swanson and Harbell (2000) | | | | | |
| 2-4 (#4) | - | liquid | 100% | n.p. | - | 7.3 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Swanson and Harbell (2000) | | | | | |
| 2-7 (#7) | - | liquid | 100% | n.p. | - | 21.4 | Moderate | Moderate | Nonirritant | | Category IV | Nonirritant | Swanson and Harbell (2000) | | | | | |
| 2-8 (#8) | - | liquid | 100% | n.p. | - | 31.8 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Swanson and Harbell (2000) | | | | | |
| Acetone | 67-64-1 | liquid | 100% | 99 | 1 | 145.5 | Very severe | Very Severe | Category 2A | | Category II | R36 | Balls et al. (1995) | | | | | |
| Acetone | 67-64-1 | liquid | 100% | 99 | 2 | 119.5 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Acetone | 67-64-1 | liquid | 100% | 99 | 3 | 120.4 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Acetone | 67-64-1 | liquid | 100% | 99 | 4 | 131.72 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Acetone | 67-64-1 | liquid | 100% | 99 | 5 | 98.4 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Acetone | 67-64-1 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 2A | | Category II | R36 | Casterton et al. (1996) | | | | | |
| Alkyl phosphoric acid ester/amine salt | - | liquid | 100% | n.p. | - | 91.3 | Severe | Severe | Category 1 | 4 | SCNM | R41 | Bailey et al. (2004) | | | | | |
| All Purpose Cleaner (#5) | - | liquid | 100% | n.p. | - | 121.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| All Purpose Cleaner (#7) | - | liquid | 100% | n.p. | - | 393.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 1 | 156 | Severe | Severe | Category 2A | | Category III | R36 | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 2 | 138 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 3 | 232 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 4 | 156 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 5 | 132 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 6 | 191 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 7 | 190 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 8 | 166 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 9 | 123 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 10 | 101 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 11 | 200 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Allyl alcohol | 107-18-6 | liquid | 100% | n.p. | 12 | 90 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 1 | 5 | Mild | | | | | | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 2 | 4 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 3 | 10 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 4 | 3 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 5 | 5 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 6 | 28 | Moderate | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 7 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 8 | 4 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 9 | 10 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 10 | 6 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 11 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Aluminum hydroxide | 21645-51-2 | solid | 20% | n.p. | 12 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 1 | 7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | | | | | | Gautheron et al. (1994) |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 2 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 3 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 4 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 5 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 6 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 7 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 8 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 9 | 13 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 10 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Aminophenol | 95-55-6 | solid | 20% | n.p. | 12 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 1 | 8.3 | Mild | | | | | | | | | | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 2 | 6.4 | Mild | | | | | | Balls et al. (1995) | | | | | |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 3 | 7.2 | Mild | | | | | | Balls et al. (1995) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------|
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 4 | 21.82 | Mild | Mild | Category 2B | | Category III | R36 | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | solid | 20% | >99.9 | 5 | 5.2 | Mild | | | | | | Balls et al. (1995) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 1 (1) | 4.9 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 1 (2) | 5.9 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 2 (1) | 3.9 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 2 (2) | 3.6 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 3 (1) | 5.2 | Mild | | | | | | Southee (1998) |
| Ammonium nitrate | 6484-52-2 | n.p. | 100% | n.p. | 3 (2) | 6.7 | Mild | | | | | | Southee (1998) |
| Amway all fabric bleach | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway automatic dishwashing compound for soft water | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway automatic dishwashing compound, standard formula | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway concrete floor cleaner | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | SCNM | R41 | Casterton et al. (1996) |
| Amway Dish Drops dishwashing liquid | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | | | | | Casterton et al. (1996) |
| Amway dry chlorine bleach | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway fabric softener | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Amway Kool Wash delicate fabric detergent | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R36 | Casterton et al. (1996) |
| Amway LOC all purpose cleaner | - | n.p. | 100% | n.p. | - | - | Mild | Mild | SCNM | | SCNM | Nonirritant | Casterton et al. (1996) |
| Amway prewash liquid | - | liquid | 100% | n.p. | - | - | Mild | Mild | SCNM | | Category I | Nonirritant | Casterton et al. (1996) |
| Amway Pursue disinfectant cleaner | - | n.p. | 100% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Amway Redu dye stain remover | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Category 2A | | Category II | Nonirritant | Casterton et al. (1996) |
| Amway SA8 laundry liquid | - | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Amway SA8 limited phos laundry powder | - | solid | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 1 | -2 | Nonirritant | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 3 | -3 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 6 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 8 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 10 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 11 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Anthracene | 120-12-7 | solid | 20% | n.p. | 12 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Anti-Dandruff Shampoo (HZY) | - | n.p. | 100% | n.p. | - | - | Moderate | | | | | | Moderate |
| Anti-Dandruff Shampoo (HZY) 100% | - | n.p. | 10% | n.p. | - | 20.8 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Aromatic hydrocarbon #1 | - | liquid | 100% | n.p. | - | 2.7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Aromatic hydrocarbon #2 | - | liquid | 100% | n.p. | - | 4.6 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Aryl phosphonates | - | liquid | 100% | n.p. | - | 41.3 | Moderate | Moderate | Category 2B | | SCNM | SCNM | Bailey et al. (2004) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 1 | 1.8 | Mild | Mild | SCNM ¹¹ | | SCNM | SCNM | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 2 | 0.1 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 3 | 2.6 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 4 | 0.788 | Mild | | | | | | Balls et al. (1995) |
| L-Aspartic acid | 70-47-3 | solid | 20% | 100 | 5 | 1.2 | Mild | | | | | | Balls et al. (1995) |
| Baby Shampoo No. 1 (HZZ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Baby Shampoo No. 1 (HZZ) 100% | - | n.p. | 10% | n.p. | - | 4.0 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Baby Shampoo No. 2 (HZF) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Baby Shampoo No. 2 (HZF) 100% | - | n.p. | 10% | n.p. | - | 8.3 | Nonsevere | Nonsevere | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Bathroom Cleaner (#6) | - | liquid | 100% | n.p. | - | 78.3 | Severe | Severe | SCNM | | Category III | Nonirritant | Swanson et al. (1995) |
| Benchmark-Group 1 (#12) | - | liquid | 100% | n.p. | - | 60.1 | Severe | Severe | Category 2A | | Category I | R36 | Swanson and Harbell (2000) |
| Benchmark-Group 2 (#13) | - | liquid | 100% | n.p. | - | 60.1 | Severe | Severe | Category 1 | 1 | Category I | R41 | Swanson and Harbell (2000) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (1) | 195.2 | Very severe | Very Severe | Category 1 | 4 | SCNM | R41 | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (2) | 135.2 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (3) | 137.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (4) | 156.5 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (5) | 138.0 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (6) | 176.8 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (7) | 183.0 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 1 (8) | 175.4 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (1) | 154.4 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (2) | 156.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (3) | 150.8 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (4) | 157.2 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (5) | 157.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (6) | 157.0 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 2 (7) | 160.2 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (1) | 156.9 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (2) | 163.4 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (3) | 169.7 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (4) | 162.8 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (5) | 151.6 | Very severe | | | | | | Southee (1998) |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (6) | 163.1 | Very severe | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (7) | 167.8 | Very severe | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (8) | 156.9 | Very severe | Southee (1998) | | | | | |
| Benzalkonium chloride (100%) | 8001-54-5 | liquid | 10% | n.p. | 3 (9) | 160.0 | Very severe | Southee (1998) | | | | | |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | 98 | 1 | 112.8 | Very severe | Very Severe | Category 1 | 1 | Category II | R41 | Balls et al. (1995) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | 98 | 2 | 90.5 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | 98 | 3 | 99.4 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | 98 | 4 | 62.49 | Severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | 98 | 5 | 78.6 | Severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (1%) | 8001-54-5 | liquid | 1% | n.p. | - | - | Severe | Severe | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 1 | 142.2 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 2 | 157.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 3 | 123.8 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 4 | 137.5 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | 98 | 5 | 121.1 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (10%) | 8001-54-5 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 1 | 126.6 | Very severe | Very Severe | Category 1 | 2 | Category I | R41 | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 2 | 163.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 3 | 110.7 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 4 | 130.41 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | 98 | 5 | 111.1 | Very severe | | | | | | Balls et al. (1995) |
| Benzalkonium chloride (5%) | 8001-54-5 | liquid | 5% | n.p. | - | - | Severe | Severe | Category 1 | 2 | Category I | R41 | Casterton et al. (1996) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 1 | 128 | Severe | Severe | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 2 | 124 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 3 | 163 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 4 | 106 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 5 | 128 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 6 | 129 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 7 | 142 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 8 | 129 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 9 | 166 | Severe | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 10 | no data | n.a. ¹³ | | | | | | Gautheron et al. (1994) |
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 11 | 142 | Severe | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|-------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|-------------|-------------|-------------------------|
| Benzethonium chloride | 121-54-0 | surfactant | 10% | n.p. | 12 | 116 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 1 | 173 | Very severe | Very Severe | Category 1 | 2 | SCNM | R41 | Balls et al. (1995) | | | | | |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 2 | 288.7 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 3 | 91.1 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 4 | 149.86 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Benzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | - | 5 | 145.3 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 1 | 4 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 3 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 5 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 6 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 8 | -10 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 9 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 10 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 11 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Betaine monohydrate | 590-47-6 | solid | 20% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 1 | 0 | Mild | | | | | | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 2 | 2 | Mild | | | | | | | | | | | Gautheron et al. (1994) |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 3 | -1 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 4 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 5 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 6 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 7 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 8 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 9 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 11 | -2 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| BRIJ-35 | 9002-92-0 | surfactant | 10% | n.p. | 12 | -2 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| 4-Bromophenetole | - | n.p. | 100% | n.p. | - | - | Mild | Mild | | | | | | | | | | Casterton et al. (1996) |
| Bubble Bath (HZK) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | | | | | | Casterton et al. (1996) |
| Bubble Bath (HZK) 100% | - | n.p. | 100% | n.p. | - | 17.5 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) | | | | | |
| n-Butanol | 71-36-3 | liquid | 100% | n.p. | - | - | Severe | Severe | | | | | Casterton et al. (1996) | | | | | |
| 2-Butoxyethanol | 111-76-2 | liquid | 100% | n.p. | - | - | Severe | Severe | | | | | Casterton et al. (1996) | | | | | |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 1 | 49.5 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) | | | | | |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 2 | 37.5 | Moderate | | | | | | Balls et al. (1995) | | | | | |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 3 | 43.9 | Moderate | | | | | | Balls et al. (1995) | | | | | |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 4 | 23.86 | Mild | | | | | | Balls et al. (1995) | | | | | |
| Butyl acetate | 123-86-4 | liquid | 100% | 99 | 5 | 18.1 | Mild | | | | | | Balls et al. (1995) | | | | | |
| Butyl cellulosolve | 111-76-2 | liquid | 100% | n.p. | 1 (1) | 108.3 | Very severe | Very Severe | Category 1 | 1 | Category II | R41 | Southee (1998) | | | | | |
| Butyl cellulosolve | 111-76-2 | liquid | 100% | n.p. | 1 (2) | 111.8 | Very severe | | | | | | Southee (1998) | | | | | |
| Butyl cellulosolve | 111-76-2 | liquid | 100% | n.p. | 2 (1) | 92.8 | Very severe | | | | | | Southee (1998) | | | | | |
| Butyl cellulosolve | 111-76-2 | liquid | 100% | n.p. | 2 (2) | 99.2 | Very severe | | | | | | Southee (1998) | | | | | |
| Butyl cellulosolve | 111-76-2 | liquid | 100% | n.p. | 3 (1) | 94.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Butyl cellulosolve | 111-76-2 | liquid | 100% | n.p. | 3 (2) | 98.2 | Very severe | | | | | | Southee (1998) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 1 | 48 | Moderate | Moderate | Category 2A | | Category II | R36 | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 2 | 44 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 3 | 64 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 4 | 35 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 5 | 35 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 6 | 30 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 7 | 80 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 8 | 32 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|---------------------------------|--------------------|-------------|----------------------|--------------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 9 | 42 | Moderate | | | | | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 10 | 53 | Moderate | | | | | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 11 | 35 | Moderate | | | | | | Gautheron et al. (1994) |
| Butyrolactone | 96-48-0 | liquid | 100% | n.p. | 12 | 49 | Moderate | | | | | | Gautheron et al. (1994) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 1 | 90.6 | Very severe | Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 2 | 32.9 | Moderate | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 3 | 31.5 | Moderate | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 4 | 81.55 | Very severe | | | | | | Balls et al. (1995) |
| gamma-Butyrolactone | 96-48-0 | liquid | 100% | >99 | 5 | 67.1 | Severe | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 1 | 27.8 | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 2 | 27.2 | Moderate | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 3 | 34.8 | Moderate | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 4 | 102.918 | Very severe | | | | | | Balls et al. (1995) |
| Captan 90 concentrate | 133-06-2 | solid | 20% | 90 | 5 | 26.4 | Moderate | | | | | Balls et al. (1995) | |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 1 | 97.6 | Very severe | Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 2 | 98.1 | Very severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 3 | 57.5 | Severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 4 | 64.33 | Severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 5 | 73.9 | Severe | | | | | | Balls et al. (1995) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 100% | n.p. | - | - | Mild | Mild | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 1 (1) | 53.9 | Moderate | Moderate | Category 2A | | Category II | R36 | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 1 (2) | 47.7 | Moderate | | | | | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 2 (1) | 47.1 | Moderate | | | | | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 2 (2) | 47.2 | Moderate | | | | | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 3 (1) | 42.2 | Moderate | | | | | | Southee (1998) |
| 4-Carboxybenzaldehyde | 619-66-9 | solid | 20% | 95 | 3 (2) | 41.8 | Moderate | Southee (1998) | | | | | |
| Carboxylic acid amides | - | solid | 100% | n.p. | - | 27.5 | Moderate | Moderate | Category 1 | 4 | Category I | R41 | Bailey et al. (2004) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 1 | 11 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 2 | 4.1 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 3 | 12.1 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 4 | 4.33 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0.10% | 98 | 5 | 14.5 | Mild | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (0.1%) | 140-72-7 | liquid | 0% | n.p. | - | - | Mild | | | | | | Casterton et al. (1996) |
| Cetylpyridinium bromide (1%) | 140-72-7 | liquid | 1% | n.p. | - | - | Moderate | | | | | | Moderate |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 1 | 43.5 | Moderate | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 2 | 89.6 | Very severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 3 | 81 | Very severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 4 | 71.22 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | 98 | 5 | 76.7 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (10%) | 140-72-7 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 1 | 72.2 | Severe | Severe | Category 1 | 2 | SCNM | R41 | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 2 | 86.3 | Very severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 3 | 63.6 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 4 | 68.72 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | 98 | 5 | 65.4 | Severe | | | | | | Balls et al. (1995) |
| Cetylpyridinium bromide (6%) | 140-72-7 | liquid | 6% | n.p. | - | - | Severe | Severe | Category 1 | 2 | SCNM | R41 | Casterton et al. (1996) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. ¹² | 1 | 147 | Very severe | Very Severe | Category 1 | 4 | SCNM | SCNM | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 2 | 122.9 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 3 | 97.3 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 4 | 101.78 | Very severe | | | | | | Balls et al. (1995) |
| Chlorhexidine | 55-56-1 | solid | 20% | n.p. | 5 | 101.5 | Very severe | | | | | | Balls et al. (1995) |
| 2-Chloro-2,4,4-trimethylpentane | - | liquid | 100% | n.p. | - | 4.1 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Clarified slurry oil | - | liquid | 100% | n.p. | - | 2.3 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Cleaner/Degreaser (#13) | - | liquid | 100% | n.p. | - | 353.6 | Severe | Severe | | | | | Swanson et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|-------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Cleansing Gel (HZQ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Cleansing Gel (HZQ) 100% | - | n.p. | 10% | n.p. | - | 2.3 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Cutting fluid (conc.) #1 | - | liquid | 100% | n.p. | - | 3.5 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Cutting fluid (conc.) #2 | - | liquid | 100% | n.p. | - | 4.9 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Bailey et al. (2004) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 1 | 85 | Very severe | Moderate | Category 1 | 2 | Category I | R41 | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 2 | 49.9 | Moderate | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 3 | 70.1 | Severe | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 4 | 52.24 | Moderate | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | 97 | 5 | 43.2 | Moderate | | | | | | Balls et al. (1995) |
| Cyclohexanol | 108-93-0 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 1 | 2 | Category I | R41 | Casterton et al. (1996) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 1 | 92 | Severe | Severe | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 2 | 108 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 3 | 96 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 4 | 81 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 5 | 130 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 6 | 93 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 7 | 104 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 8 | 90 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 9 | 142 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 11 | 118 | Severe | | | | | | Gautheron et al. (1994) |
| Cyclohexanone | 108-94-1 | liquid | 100% | n.p. | 12 | 108 | Severe | | | | | | Gautheron et al. (1994) |
| Degreaser (#16) | - | liquid | 100% | n.p. | - | 255.7 | Severe | | | | | | Severe |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 1 | 96 | Severe | Severe | Category 2A | | Category II | R36 | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 2 | 72 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 3 | 106 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 4 | 73 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 5 | 119 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 6 | 103 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 7 | 88 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 8 | 46 | Moderate | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 9 | 100 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 10 | 60 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 11 | 200 | Severe | | | | | | Gautheron et al. (1994) |
| Deoxycholic acid, sodium salt | 302-95-4 | surfactant | 10% | n.p. | 12 | 59 | Severe | | | | | | Gautheron et al. (1994) |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 1 | 53 | Moderate | | | | | | Moderate |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 2 | 41 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 3 | 105 | Severe | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 4 | 39 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 5 | 42 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 6 | 34 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 7 | 49 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 8 | 41 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 9 | 92 | Severe | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 11 | 36 | Moderate | Gautheron et al. (1994) | | | | | |
| Diacetone alcohol | 123-42-2 | liquid | 100% | n.p. | 12 | 56 | Severe | Gautheron et al. (1994) | | | | | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 1 | 104 | Severe | Severe | Category 1 | 2 | Category I | R41 | |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 2 | 134 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 3 | 82 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 4 | 118 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 5 | 110 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 6 | 66 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 7 | 88 | Severe | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|--------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 8 | 193 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 9 | 82 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 11 | 213 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzoyl-L-tartaric acid | 2743-38-6 | solid | 20% | n.p. | 12 | 135 | Severe | | | | | | Gautheron et al. (1994) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 1 | 304.1 | Very severe | Very Severe | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 2 | 391.1 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 3 | 418 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 4 | 467.09 | Very severe | | | | | | Balls et al. (1995) |
| Dibenzyl phosphate | 1623-08-1 | solid | 20% | 99 | 5 | 307.5 | Very severe | | | | | Balls et al. (1995) | |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 1 | 9.9 | Mild | Mild | Category 2A | | Category II | SCNM | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 2 | 11.2 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 3 | 10.8 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 4 | 14.43 | Mild | | | | | | Balls et al. (1995) |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | 99 | 5 | 5.6 | Mild | | | | | Balls et al. (1995) | |
| 2,6-Dichlorobenzoyl chloride | 4659-45-4 | liquid | 100% | n.p. | - | - | Mild | | | | | | Balls et al. (1995) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 1 | 23 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 2 | 23 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 3 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 4 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 5 | 16 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 6 | 31 | Moderate | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 7 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 8 | 71 | Severe | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 9 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 10 | 20 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 11 | 34 | Moderate | | | | | | Gautheron et al. (1994) |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | solid | 20% | n.p. | 12 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| 2,4-Difluoronitrobenzene | 446-35-5 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | Casterton et al. (1996) | |
| 1,3-Diisopropylbenzene | 99-62-7 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 1 | 0 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 2 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 3 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 4 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 5 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 6 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 7 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 8 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 9 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethylbiguanide | 657-24-9 | solid | 20% | n.p. | 12 | 8 | Mild | | | | | | Gautheron et al. (1994) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 1 | 103.8 | Very severe | Very Severe | SCNM | | Category I | SCNM | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 2 | 115 | Very severe | | | | | | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 3 | 131.7 | Very severe | | | | | | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 4 | 130.26 | Very severe | | | | | | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | 96 | 5 | 78.8 | Severe | Severe | SCNM | | Category I | SCNM | Balls et al. (1995) |
| 2,2-Dimethylbutanoic acid | 595-37-9 | liquid | 100% | n.p. | - | - | Severe | | | | | | Casterton et al. (1996) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 1 | 18.2 | Mild | Mild | Category I | 1 | Category I | R41 | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 2 | 25.3 | Moderate | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 3 | 20.5 | Mild | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 4 | 31.533 | Moderate | | | | | | Balls et al. (1995) |
| 2,5-Dimethylhexanediol | 110-03-2 | solid | 20% | 99.5 | 5 | 8.3 | Mild | | | | | | Balls et al. (1995) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 1 | 10 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|-------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 2 | 10 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 3 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 4 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 5 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 6 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 7 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 8 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 9 | 9 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 11 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Dimethyl sulfoxide | 67-68-5 | liquid | 100% | n.p. | 12 | 22 | Mild | | | | | | Gautheron et al. (1994) |
| Dodecane | 112-40-3 | liquid | 100% | n.p. | - | | Mild | | | | | | Mild |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 1 | -1 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 2 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 3 | -8 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 4 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 5 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 6 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 8 | -6 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 10 | -1 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 11 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| EDTA, di-potassium salt | 25102-12-9 | solid | 20% | n.p. | 12 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 | 74.4 | Severe | Severe | Category 2A | | Category III | Nonirritant | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 | 53.2 | Moderate | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 | 63.3 | Severe | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 4 | 98.01 | Very severe | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 5 | 64.2 | Severe | | | | | | Balls et al. (1995) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 | 58 | Severe | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 | 67 | Severe | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 | 70 | Severe | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 4 | 45 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 5 | 60 | Severe | | | | | | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 6 | 64 | Severe | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 7 | 58 | Severe | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 8 | 51 | Moderate | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 9 | 46 | Moderate | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 11 | 104 | Severe | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 12 | 45 | Moderate | Gautheron et al. (1994) | | | | | |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (1) | 36.6 | Moderate | Moderate | Category 2A | | Category III | Nonirritant | Gautheron et al. (1994) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (2) | 37.6 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (3) | 29.6 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (4) | 41.7 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (5) | 31.5 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (6) | 42.6 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 1 (7) | 55.4 | Severe | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (1) | 52.7 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (2) | 54.5 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (3) | 61.7 | Severe | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (4) | 60.2 | Severe | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (5) | 54.2 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (6) | 73.4 | Severe | | | | | | Southee (1998) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|---------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------|
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (7) | 64.0 | Severe | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 2 (8) | 51.4 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (1) | 47.0 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (2) | 45.4 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (3) | 44.4 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (4) | 45.7 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (5) | 54.6 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (6) | 44.8 | Moderate | | | | | | Southee (1998) |
| Ethanol | 64-17-5 | liquid | 100% | n.p. | 3 (7) | 42.2 | Moderate | | | | | | Southee (1998) |
| Ethanol (#14) | 64-17-5 | liquid | 100% | n.p. | - | 52.7 | Moderate | Moderate | Category 2A | | Category I | R36 | Swanson and Harbell (2000) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 1 | 99 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 2 | 100 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 3 | 128 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 4 | 75 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 5 | 75 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 6 | 85 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 7 | 94 | Severe | Severe | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 8 | 93 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 9 | 84 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 10 | 75 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 11 | 101 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Ethoxyethanol | 110-80-5 | liquid | 100% | n.p. | 12 | 86 | Severe | | | | | | Gautheron et al. (1994) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 1 | 19.7 | Mild | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 2 | 28.4 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 3 | 47.1 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 4 | 44.31 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl acetate | 141-78-6 | liquid | 100% | 99 | 5 | 20.6 | Mild | | | | | | Balls et al. (1995) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 1 | 26 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 2 | 38 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 3 | 31 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 4 | 33 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 5 | 21 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 6 | 29 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 7 | 28 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 8 | 38 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 9 | 26 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 11 | 38 | Moderate | | | | | | Gautheron et al. (1994) |
| Ethyl acetoacetate | 141-97-9 | liquid | 100% | n.p. | 12 | 42 | Moderate | | | | | | Gautheron et al. (1994) |
| 2-Ethylhexanol | 104-76-7 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category II | R36 | Casterton et al. (1996) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 1 | 62 | Severe | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 2 | 28.2 | Moderate | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 3 | 30.7 | Moderate | Nonsevere | Category 2A | | Category II | R36 | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 4 | 58.71 | Severe | | | | | | Balls et al. (1995) |
| 2-Ethyl-1-hexanol | 104-76-7 | liquid | 100% | 99 | 5 | 19.6 | Mild | | | | | | Balls et al. (1995) |
| Ethylhexyl acid phosphate ester | - | liquid | 100% | n.p. | - | 130.5 | Severe | Severe | Category 1 | 4 | SCNM | R41 | Bailey et al. (2004) |
| 5-Ethylidene-2-norbornene | 16219-75-3 | liquid | 100% | n.p. | - | 8.8 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 1 | 27.5 | Moderate | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 2 | 14.1 | Mild | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 3 | 5.5 | Mild | Mild | Category 2B | | Category III | Nonirritant | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 4 | 5.543 | Mild | | | | | | Balls et al. (1995) |
| Ethyl-2-methylacetoacetate | 609-14-3 | liquid | 100% | 97 | 5 | 19.6 | Mild | | | | | | Balls et al. (1995) |
| 3-Ethyltoluene | 620-14-4 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 1 | 27.4 | Moderate | | | | | | Balls et al. (1995) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|---------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 2 | 33.7 | Moderate | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 3 | 10.5 | Mild | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 4 | 8.633 | Mild | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | 99 | 5 | 9 | Mild | | | | | | Balls et al. (1995) |
| Ethyl trimethyl acetate | 3938-95-2 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Eye Make-Up Remover (HZH) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Eye Make-Up Remover (HZH) 100% | - | n.p. | 10% | n.p. | - | 0.2 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Facial Cleansing Foam (HZR) 25% | - | n.p. | 10% | n.p. | - | 4.1 | Nonsevere | Nonsevere | Nonsevere | SCNM | Category I | SCNM | Gettings et al. (1996) |
| Facial Cleanser (HZZ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Facial Cleanser (HZZ) 100% | - | n.p. | 10% | n.p. | - | 1.8 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Floor Cleaner (#10) | - | liquid | 100% | n.p. | - | 70.3 | Severe | Severe | | | | | Swanson et al. (1995) |
| Floor Cleaner (#2) | - | liquid | 100% | n.p. | - | -0.3 | Nonirritant | Nonirritant | | | | | Swanson et al. (1995) |
| Floor Stripper (#14) | - | liquid | 100% | n.p. | - | 157.3 | Severe | Severe | | | | | Swanson et al. (1995) |
| Floor Stripper (#17) | - | liquid | 100% | n.p. | - | 216.2 | Severe | Severe | Category 1 | NC | Category I | R41 | Swanson et al. (1995) |
| Floor Stripper (#18) | - | liquid | 100% | n.p. | - | 444.3 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) |
| Foam Bath (HZZ) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) |
| Foam Bath (HZZ) 100% | - | n.p. | 10% | n.p. | - | 18.6 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 1 | 45.5 | Moderate | Nonsevere | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 2 | 151.9 | Very severe | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 3 | 64.9 | Severe | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 4 | 23.023 | Mild | | | | | | Balls et al. (1995) |
| Fomesafen | 72128-02-0 | solid | 20% | 97.5 | 5 | 18.2 | Mild | | | | | | Balls et al. (1995) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 1 | 73 | Severe | Severe | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 2 | 63 | Severe | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 3 | 61 | Severe | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 4 | 65 | Severe | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 5 | 33 | Moderate | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 6 | 34 | Moderate | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 7 | 87 | Severe | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 8 | 48 | Moderate | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 9 | 50 | Moderate | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 10 | 39 | Moderate | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 11 | 68 | Severe | | | | | | Gautheron et al. (1994) |
| Furan | 110-00-9 | liquid | 100% | n.p. | 12 | 51 | Moderate | | | | | | Gautheron et al. (1994) |
| Gel Cleanser (HZE) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | SCNM | | Category I | SCNM | Casterton et al. (1996) |
| Gel Cleanser (HZE) 100% | - | n.p. | 10% | n.p. | - | 3.1 | Nonsevere | Nonsevere | SCNM | | Category I | SCNM | Gettings et al. (1996) |
| General Cleaner (#11) | - | liquid | 100% | n.p. | - | 83.3 | Severe | Severe | | | | | Swanson et al. (1995) |
| General Cleaner (#12) | - | liquid | 100% | n.p. | - | 113.5 | Severe | Severe | | | | | Swanson et al. (1995) |
| Glass Cleaner (#19) | - | liquid | 100% | n.p. | - | 135.8 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 1 | 63 | Severe | Severe | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 2 | 81 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 3 | 90 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 4 | 62 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 5 | 108 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 6 | 66 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 7 | 90 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 8 | 57 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 9 | 88 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 11 | 75 | Severe | | | | | | Gautheron et al. (1994) |
| Gluconolactone | 90-80-2 | solid | 20% | n.p. | 12 | 63 | Severe | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 1 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 3 | 1 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|----|--------------|-------------|------------------------|
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 4 | 1 | Mild | Mild | SCNM | | SCNM | SCNM | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 6 | -4 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 8 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 9 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 10 | 2 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 11 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| DL-Glutamic acid | 19285-83-7 | solid | 20% | n.p. | 12 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 1 | -2 | Mild | | | | | | Mild | Nonirritant | | Category IV | Nonirritant | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 2 | -0.2 | Mild | | | | | | | | | | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 3 | 0.3 | Mild | | | | | | | | | | | Balls et al. (1995) |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 4 | 3.08 | Mild | Balls et al. (1995) | | | | | | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 5 | 0.1 | Mild | Balls et al. (1995) | | | | | | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | n.p. | - | - | Mild | Casterton et al. (1996) | | | | | | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 1 (1) | 0.6 | Mild | Nonirritant | Nonirritant | | Category IV | Nonirritant | Southee (1998) | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 1 (2) | 0.3 | Mild | | | | | | Southee (1998) | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 2 (1) | 0.8 | Nonirritant | | | | | | Southee (1998) | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 2 (2) | 0.8 | Nonirritant | | | | | | Southee (1998) | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 3 (1) | 1.0 | Nonirritant | | | | | | Southee (1998) | | | | | |
| Glycerol | 56-81-5 | liquid | 100% | >99.5 | 3 (2) | 0.8 | Nonirritant | | | | | | Southee (1998) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 1 | 18 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 2 | 24 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 3 | 25 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 4 | 14 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 5 | 13 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 6 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 7 | 15 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 8 | 18 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 9 | 18 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 10 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 11 | 23 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | liquid | 100% | n.p. | 12 | 21 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Hand Soap (HZU) 25% | - | n.p. | 10% | n.p. | - | 5.5 | Nonsevere | | | | | | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Heavy Duty Cleaner (#15) | - | liquid | 100% | n.p. | - | 357.1 | Severe | | | | | | Severe | Category 1 | NC | Category I | R41 | Swanson et al. (1995) |
| Heavy Duty Cleaner/Degreaser (#9) | - | liquid | 100% | n.p. | - | 354.7 | Severe | Severe | Category 1 | | | | Swanson et al. (1995) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 1 | 93 | Severe | Severe | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 2 | 40 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 3 | 53 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 4 | 33 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 5 | 91 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 6 | 42 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 7 | 82 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 8 | 76 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 9 | 70 | Severe | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|-------------|----------------|-------------------------|
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 11 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 12 | 102 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 1 (1) | 23.1 | Mild | Moderate | Category 1 | 4 | Category I | R41 | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 1 (2) | 17.2 | Mild | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 2 (1) | 34.6 | Moderate | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 2 (2) | 39.1 | Moderate | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 3 (1) | 31.7 | Moderate | | | | | | Southee (1998) | | | | | |
| Hexadecyltrimethylammonium bromide | 57-09-0 | surfactant | 10% | n.p. | 3 (2) | 29.9 | Moderate | | | | | | Southee (1998) | | | | | |
| 1,5-Hexadiene | 592-42-7 | liquid | 100% | n.p. | - | - | Mild | | | | | | Mild | | | | | Casterton et al. (1996) |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 1 | 2 | Mild | | | | | | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 2 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 3 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 4 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 5 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 6 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 7 | 3 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 8 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 9 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 10 | -1 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 11 | -2 | Nonirritant | Gautheron et al. (1994) | | | | | | | | | | |
| Hexane | 110-54-3 | liquid | 100% | n.p. | 12 | 6 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 1 | 71.5 | Severe | Severe/Very Severe | Category 2A | | Category II | R36 | | | | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 2 | 83.6 | Very severe | | | | | | | | | | | Balls et al. (1995) |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 3 | 63.2 | Severe | | | | | | Balls et al. (1995) | | | | | |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 4 | 48.19 | Moderate | | | | | | Balls et al. (1995) | | | | | |
| n-Hexanol | 111-27-3 | liquid | 100% | 98 | 5 | 42.9 | Moderate | | | | | | Balls et al. (1995) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | 99 | 1 | 116.8 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | 99 | 2 | 133.9 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | 99 | 3 | 103.4 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | 99 | 4 | 118.7 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | 99 | 5 | 90.8 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 | 75 | Severe | Severe | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 | 73 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 | 140 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 4 | 81 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 5 | 96 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 6 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 7 | 82 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 8 | 122 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 9 | 64 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 10 | 81 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 11 | 114 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 12 | 65 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (1) | 142.0 | Very severe | | | | | | | | | | Southee (1998) | |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (2) | 137.6 | Very severe | | | | | | | | | | | Southee (1998) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category I SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|---------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (3) | 112.2 | Very severe | Very Severe | Category I | 4 | Category I | R41 | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (4) | 131.1 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (5) | 145.6 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (6) | 162.6 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 1 (7) | 125.5 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (1) | 138.1 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (2) | 140.1 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (3) | 134.9 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (4) | 157.2 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (5) | 137.6 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (6) | 152.9 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 2 (7) | 148.7 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (1) | 139.6 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (2) | 140.1 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (3) | 124.0 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (4) | 128.7 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (5) | 123.4 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (6) | 121.2 | Very severe | | | | | | Southee (1998) |
| Imidazole | 288-32-4 | solid | 20% | n.p. | 3 (7) | 131.3 | Very severe | | | | | | Southee (1998) |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 1 | 0 | Mild | | | | | | Mild |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 2 | 1 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 3 | 6 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 4 | 0 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 5 | 4 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 6 | 0 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 7 | 1 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 8 | 12 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 9 | 0 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 10 | no data | n.a. | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 11 | 6 | Mild | Gautheron et al. (1994) | | | | | |
| Iminodibenzyl | 494-19-9 | solid | 20% | n.p. | 12 | -4 | Nonirritant | Gautheron et al. (1994) | | | | | |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 1 | 54.4 | Moderate | Moderate | Category 2A | | Category II | R36 | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 2 | 74 | Severe | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 3 | 67.7 | Severe | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 4 | 41.78 | Moderate | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | 99.9 | 5 | 42.2 | Moderate | | | | | | Balls et al. (1995) |
| Isobutanol | 78-83-1 | liquid | 100% | n.p. | - | - | Severe | Severe | Category 2A | - | Category II | R36 | Casterton et al. (1996) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 1 | 39.7 | Moderate | Severe | Category 2A | | Category III | SCNM | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 2 | 59.5 | Severe | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 3 | 72.3 | Severe | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 4 | 78.5 | Severe | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | 99.9 | 5 | 39.3 | Moderate | | | | | | Balls et al. (1995) |
| Isopropanol | 67-63-0 | liquid | 100% | n.p. | - | - | Moderate | | | | | | Moderate |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 1 | 53 | Moderate | Moderate | Category 2B | | Category III | Nonirritant | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 2 | 50 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 3 | 48 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 4 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 5 | 45 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 6 | 35 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 7 | 48 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 8 | 43 | Moderate | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 9 | 63 | Severe | | | | | | Gautheron et al. (1994) |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|---------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|--------------|-------------|------------------------|
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 11 | 89 | Severe | Severe | SCNM | | SCNM | SCNM | Gautheron et al. (1994) | | | | | |
| N-Lauroylsarcosine, sodium salt | 7631-98-3 | surfactant | 10% | n.p. | 12 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 1 | 81 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 2 | 82 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 3 | 103 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 4 | 76 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 5 | 92 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 6 | 68 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 7 | 90 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 8 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 9 | 102 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 11 | 76 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Laurylsulfobetaine | 14933-08-5 | surfactant | 10% | n.p. | 12 | 55 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Liquid Soap No. 2 (HZW) 25% | - | n.p. | 10% | n.p. | - | 5.6 | Nonsevere | | | | | | Nonsevere | Category 2B | | Category III | Nonirritant | Gettings et al. (1996) |
| Liquid Soap No. 1 (HZB) 25% | - | n.p. | 10% | n.p. | - | 2.3 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 1 | 3 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 2 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 3 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 4 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 6 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 7 | 7 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 8 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 11 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Magnesium carbonate | 56378-72-4 | solid | 20% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Maneb | 12427-38-2 | solid | 20% | 90 | 1 | 67 | Severe | | | | | | Nonsevere | SCNM | | Category III | SCNM | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 2 | 16.9 | Mild | | | | | | | | | | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 3 | 21 | Mild | | | | | | | | | | | Balls et al. (1995) |
| Maneb | 12427-38-2 | solid | 20% | 90 | 4 | 63.76 | Severe | Balls et al. (1995) | | | | | | | | | | |
| Maneb | 12427-38-2 | solid | 20% | 90 | 5 | 33.8 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Meat Room Degreaser (#3) | - | liquid | 100% | n.p. | - | 140.3 | Severe | Severe | | | | | Swanson et al. (1995) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 1 | 0 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 2 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 3 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 6 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 8 | -8 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 9 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 10 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 11 | -4 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| 2-Mercaptopyrimidine | 1450-85-7 | solid | 20% | n.p. | 12 | -3 | Nonirritant | | | | | | Gautheron et al. (1994) | | | | | |
| Metal Cleaner (#20) | - | liquid | 100% | n.p. | - | 391.9 | Severe | Severe | Category 1 | 4 | Category I | R41 | Swanson et al. (1995) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 1 | 88 | Severe | Severe | Nonirritant | | Category II | Nonirritant | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 2 | 88 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 3 | 54 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 4 | 71 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 5 | 81 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 6 | 108 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 7 | 37 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Methanol | 67-56-1 | liquid | 100% | n.p. | 8 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 9 | 99 | Severe | | | | | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 11 | 179 | Severe | | | | | | Gautheron et al. (1994) |
| Methanol | 67-56-1 | liquid | 100% | n.p. | 12 | 102 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 1 | 61 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 2 | 69 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 3 | 66 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 4 | 47 | Moderate | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 5 | 48 | Moderate | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 6 | 62 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 7 | 65 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 8 | 62 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 9 | 57 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 11 | 74 | Severe | | | | | | Gautheron et al. (1994) |
| 2-Methoxyethanol | 109-86-4 | liquid | 100% | n.p. | 12 | 88 | Severe | | | | | | Gautheron et al. (1994) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 1 | 71.2 | Severe | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 2 | 46.5 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 3 | 51.6 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 4 | 53.9 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | 98 | 5 | 51.1 | Moderate | | | | | | Balls et al. (1995) |
| Methyl acetate | 79-20-9 | liquid | 100% | n.p. | - | - | Moderate | | | | | | Casteron et al. (1996) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 1 | 16.3 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 2 | 5.9 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 3 | 10.1 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 4 | 17.53 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyanoacetate | 105-34-0 | liquid | 100% | 99 | 5 | 11 | Mild | | | | | | Balls et al. (1995) |
| Methyl cyclopentadiene dimer | - | liquid | 100% | n.p. | - | 0.7 | Mild | | | | | | Bailey et al. (2004) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 1 | 3.8 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 2 | 4.6 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 3 | 1.4 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 4 | 1.71 | Mild | | | | | | Balls et al. (1995) |
| Methylcyclopentane | 96-37-7 | liquid | 100% | >99 | 5 | 2.7 | Mild | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 1 | 93 | Very severe | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 2 | 67.4 | Severe | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 3 | 52.2 | Moderate | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 4 | 78.71 | Severe | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 5 | 60.8 | Severe | | | | | | Balls et al. (1995) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | n.p. | - | - | Moderate | | | | | | Casteron et al. (1996) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 1 (1) | 73.3 | Severe | | | | | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 1 (2) | 67.8 | Severe | | | | | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 2 (1) | 108.7 | Very severe | | | | | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 2 (2) | 101.7 | Very severe | | | | | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 3 (1) | 70.2 | Severe | | | | | | Southee (1998) |
| Methyl ethyl ketone | 78-93-3 | liquid | 100% | 99 | 3 (2) | 73.5 | Severe | | | | | | Southee (1998) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 1 | 8.8 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 2 | 20.1 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 3 | 10.3 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 4 | 13.25 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | 98 | 5 | 10.3 | Mild | | | | | | Balls et al. (1995) |
| Methyl isobutyl ketone | 108-10-1 | liquid | 100% | n.p. | - | - | Moderate | | | | | | Casteron et al. (1996) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 1 | 22 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 2 | 25 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 3 | 27 | Moderate | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 4 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 5 | 21 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 6 | 23 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 7 | 16 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 8 | 16 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 9 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 11 | 20 | Mild | | | | | | Gautheron et al. (1994) |
| Methylisobutyl ketone | 108-10-1 | liquid | 100% | n.p. | 12 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Methylpropyl benzene | 135-98-8 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Mild Shampoo (HZJ) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Mild Shampoo (HZJ) 25% | - | n.p. | 10% | n.p. | - | 0.1 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 1 | 2 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 3 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 4 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 6 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 8 | -4 | Nonirritant | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 11 | -3 | Nonirritant | | | | | | Gautheron et al. (1994) |
| MYRJ-45 | - | surfactant | 10% | n.p. | 12 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 1 | 120.8 | Very severe | | | | | | Very Severe |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 2 | 66.3 | Severe | Balls et al. (1995) | | | | | |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 3 | 42 | Moderate | Balls et al. (1995) | | | | | |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 4 | 88.73 | Very severe | Balls et al. (1995) | | | | | |
| 1-Naphthalene acetic acid | 86-87-3 | solid | 20% | 96 | 5 | 72.5 | Severe | Balls et al. (1995) | | | | | |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 1 | 136 | Very severe | Balls et al. (1995) | | | | | |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 2 | 144.9 | Very severe | Very Severe | Category 1 | 1 | Category I | R41 | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 3 | 161 | Very severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 4 | 161.2 | Very severe | | | | | | Balls et al. (1995) |
| 1-Naphthalene acetic acid, Na salt | 61-31-4 | solid | 20% | 95 | 5 | 143 | Very severe | | | | | | Balls et al. (1995) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 1 | 11 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 2 | 8 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 3 | 9 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 4 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 5 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 6 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 7 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 8 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 9 | 17 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 10 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 11 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Nitropropane | 108-03-2 | liquid | 100% | n.p. | 12 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 1 | 43.4 | Moderate | Moderate | Category 2B | | Category II | R36 | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 2 | 78.9 | Severe | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 3 | 39.8 | Moderate | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 4 | 14.54 | Mild | | | | | | Balls et al. (1995) |
| n-Octanol | 111-87-5 | liquid | 100% | >99 | 5 | 28 | Moderate | | | | | | Balls et al. (1995) |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 1 | 65 | Severe | | | | | | Gautheron et al. (1994) |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 2 | 33 | Moderate | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|-------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|--|--------------|-------------------------|-------------------------|
| Octanol | 111-87-5 | liquid | 100% | n.p. | 3 | 42 | Moderate | Moderate | Category 2B | | Category III | R36 | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 4 | 49 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 5 | 66 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 6 | 48 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 7 | 37 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 8 | 25 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 9 | 61 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 11 | 31 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Octanol | 111-87-5 | liquid | 100% | n.p. | 12 | 64 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 1 | 29.5 | Moderate | | | | | | Moderate | SCNM | | SCNM | Balls et al. (1995) | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 2 | 26.4 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 3 | 40.8 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 4 | 31.82 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 5 | 23.5 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | n.p. | - | - | Moderate | Casterton et al. (1996) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 1 (1) | 31 | Moderate | Southee (1998) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 1 (2) | 35 | Moderate | Southee (1998) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 2 (1) | 38.3 | Moderate | Southee (1998) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 2 (2) | 37.5 | Moderate | Southee (1998) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 3 (1) | 22.1 | Mild | Southee (1998) | | | | | | | | | | |
| Parafluoraniiline | 371-40-4 | liquid | 100% | 99 | 3 (2) | 28.9 | Moderate | Southee (1998) | | | | | | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 1 | 61 | Severe | Severe | Nonirritant | | Category III | Nonirritant | | | | | Gautheron et al. (1994) | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 2 | 79 | Severe | | | | | | | | | | Gautheron et al. (1994) | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 3 | 75 | Severe | | | | | | | | | | Gautheron et al. (1994) | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 4 | 34 | Moderate | | | | | | | | | | Gautheron et al. (1994) | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 5 | 70 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 6 | 46 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 7 | 54 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 8 | 44 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 9 | 50 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 10 | 67 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 11 | 62 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| 2,4-Pentanedione | 123-54-6 | liquid | 100% | n.p. | 12 | 76 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 1 | 8 | Mild | | | | | | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 2 | 13 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 3 | 11 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 4 | 1 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 5 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 6 | 5 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 7 | 7 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 8 | 0 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 9 | 2 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 10 | 3 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 11 | 5 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum ether | 8032-32-4 | liquid | 100% | n.p. | 12 | 9 | Mild | Gautheron et al. (1994) | | | | | | | | | | |
| Petroleum wax | - | solid | 100% | n.p. | - | 0.3 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | | | | | | Bailey et al. (2004) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 1 | 0 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 3 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 6 | 1 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|---------------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 8 | -6 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 9 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 10 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 11 | -3 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Phenylbutazone | 50-33-9 | solid | 20% | n.p. | 12 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 1 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 2 | 12 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 3 | 15 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 4 | 9 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 5 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 6 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 7 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 8 | 16 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 9 | 13 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 10 | 15 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 11 | 13 | Mild | | | | | | Gautheron et al. (1994) |
| 1-Phenyl-3-pyrazolidone | 92-43-3 | solid | 20% | n.p. | 12 | 15 | Mild | | | | | | Gautheron et al. (1994) |
| Polishing Scrub (H2T) | - | n.p. | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Polishing Scrub (H2T) 100% | - | n.p. | 10% | n.p. | - | 3.7 | Nonsevere | Nonsevere | Nonirritant | | Category IV | Nonirritant | Gettings et al. (1996) |
| Polyalkenylsuccinate ester/amine salt | - | liquid | 100% | n.p. | - | 2.3 | Mild | Mild | SCNM | | Category III | SCNM | Bailey et al. (2004) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 1 | 0.6 | Mild | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 2 | 2.5 | Mild | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 3 | -1.3 | Nonirritant | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 4 | 1.08 | Mild | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | 5 | 2.8 | Mild | | | | | | Balls et al. (1995) |
| Polyethylene glycol 400 | 25322-68-3 | liquid | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Casterton et al. (1996) |
| Polyethylene glycol 600 | - | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Pot and Pan Cleaner (#8) | - | liquid | 100% | n.p. | - | -0.6 | Nonirritant | Nonirritant | | | | | Swanson et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 1 | 16.2 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 2 | 22.9 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 3 | 12 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 4 | 17.38 | Mild | | | | | | Balls et al. (1995) |
| Potassium cyanate | 590-28-3 | solid | 20% | 97 | 5 | 6.5 | Mild | | | | | | Balls et al. (1995) |
| Process oil | - | liquid | 100% | n.p. | - | 2.7 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Bailey et al. (2004) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 1 | 120.3 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 2 | 84.2 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 3 | 125.7 | Very severe | Very Severe | Category 1 | 3 | Category I | R41 | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 4 | 123.09 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | 98 | 5 | 153.8 | Very severe | | | | | | Balls et al. (1995) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 1 | 117 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 2 | 156 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 3 | 109 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 4 | 111 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 5 | 164 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 6 | 174 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 7 | 103 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 8 | 50 | Moderate | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 9 | 139 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 11 | 94 | Severe | | | | | | Gautheron et al. (1994) |
| Promethazine hydrochloride | 58-33-3 | solid | 20% | n.p. | 12 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| Propylene glycol | 57-55-6 | liquid | 100% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 1 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 2 | 7 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|--------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|---|--------------|-------------|------------------------|
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 3 | 14 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 4 | 4 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 5 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 6 | 9 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 7 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 8 | 11 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 9 | 6 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 11 | 12 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | n.p. | 12 | 5 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 1 (1) | 11.2 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 1 (2) | 7.4 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 2 (1) | 5.2 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 2 (2) | 3.6 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 3 (1) | 7.7 | Mild | | | | | | Southee (1998) | | | | | |
| Propyl-4-hydroxybenzoate | 94-13-3 | solid | 20% | 100 | 3 (2) | 6.2 | Mild | | | | | | Southee (1998) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 1 | 140.7 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 2 | 145.4 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 3 | 132.4 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 4 | 199.02 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | >99.9 | 5 | 122.7 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 1 | 102 | Severe | Severe | Category 1 | 4 | Category II | R41 | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 2 | 123 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 3 | 186 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 4 | 79 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 5 | 102 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 6 | 77 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 7 | 124 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 8 | 132 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 9 | 105 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 11 | 96 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Pyridine | 110-86-1 | liquid | 100% | n.p. | 12 | 115 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 1 | 0.3 | Mild | | | | | | Mild | Category 1 | 1 | Category I | R41 | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 2 | 0.4 | Mild | | | | | | | | | | | Balls et al. (1995) |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 3 | 2.1 | Mild | Balls et al. (1995) | | | | | | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 4 | 1.85 | Mild | Balls et al. (1995) | | | | | | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 5 | 3.1 | Mild | Balls et al. (1995) | | | | | | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 1 | 17 | Mild | Moderate | Category 1 | 1 | Category I | R41 | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 2 | 29 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 3 | 8 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 4 | 46 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 5 | 52 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 6 | 24 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 7 | 15 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 8 | 18 | Moderate | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 9 | 58 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 11 | 3 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Quinacrine | 69-05-6 | solid | 20% | n.p. | 12 | 72 | Severe | | | | | | Gautheron et al. (1994) | | | | | |
| Shampoo No. 1 (HZC) 25% | - | n.p. | 10% | n.p. | - | 30.0 | Severe | | | | | | Severe | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) |
| Shampoo No. 2 (HZX) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) | | | | | |
| Shampoo No. 2 (HZX) | - | n.p. | 10% | n.p. | - | 14.0 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) | | | | | |
| Shampoo No. 3 (HZM) 25% | - | n.p. | 10% | n.p. | - | 4.3 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference | | | | | |
|------------------------------|--------------------|-------------|----------------------|---------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|-------------|----|--------------|-------------|---------------------|
| Shampoo No. 4 (HZV) 25% | - | n.p. | 10% | n.p. | - | 8.4 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) | | | | | |
| Shampoo No. 5 (HZD) 25% | - | n.p. | 10% | n.p. | - | 2.7 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) | | | | | |
| Shampoo No. 6 (HZN) 25% | - | n.p. | 10% | n.p. | - | 4.5 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) | | | | | |
| Shampoo No. 7 (HZA) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) | | | | | |
| Shampoo No. 7 (HZA) 100% | - | n.p. | 10% | n.p. | - | 6.6 | Nonsevere | Nonsevere | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) | | | | | |
| Shampoo No. 8 (HZG) 25% | - | n.p. | 10% | n.p. | - | 2.7 | Nonsevere | Nonsevere | Nonirritant | | Category III | Nonirritant | Gettings et al. (1996) | | | | | |
| Shower Gel (HZS) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) | | | | | |
| Shower Gel (HZS) 100% | - | n.p. | 10% | n.p. | - | 35.9 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) | | | | | |
| Skin Cleanser (HZI) | - | n.p. | 100% | n.p. | - | - | Moderate | Moderate | Category 1 | 1 | Category I | R41 | Casterton et al. (1996) | | | | | |
| Skin Cleanser (HZI) 100% | - | n.p. | 10% | n.p. | - | 15.8 | Severe | Severe | Category 1 | 1 | Category I | R41 | Gettings et al. (1996) | | | | | |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 1 | 167.4 | Very severe | Very Severe | Category 2B | | Category III | R36 | Balls et al. (1995) | | | | | |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 2 | 133.2 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 3 | 146.5 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 4 | 171.08 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | reagent grade | 5 | 132.3 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (1%) | 1310-73-2 | liquid | 1% | n.p. | - | - | Severe | Severe | Category 2B | | Category III | R36 | Casterton et al. (1996) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 1 | 285.2 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 2 | 224.1 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 3 | 254.7 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 4 | 348.27 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | reagent grade | 5 | 247.2 | Very severe | | | | | | Balls et al. (1995) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 1 (1) | 245.0 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 1 (2) | 227.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 2 (1) | 241.3 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 2 (2) | 235.5 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 3 (1) | 193.1 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium hydroxide (10%) | 1310-73-2 | liquid | 10% | n.p. | 3 (2) | 214.9 | Very severe | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 1 | 47.3 | Moderate | | | | | | Severe | Category 1 | NC | Category I | R36 | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 2 | 93 | Very severe | | | | | | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 3 | 63.2 | Severe | | | | | | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 4 | 59.61 | Severe | | | | | | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | 98 | 5 | 53.3 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Sodium lauryl sulfate (15 %) | 151-21-3 | liquid | 15% | n.p. | - | - | Moderate | Moderate | Category 1 | NC | Category I | R36 | Casterton et al. (1996) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 1 (1) | 5.4 | Mild | Mild | Category 1 | NC | Category I | SCNM | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 1 (2) | 5.2 | Mild | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 2 (1) | 15.9 | Mild | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 2 (2) | 17.3 | Mild | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 3 (1) | 8.7 | Mild | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (15%) | 151-21-3 | liquid | 10% | 98 | 3 (2) | 5.6 | Mild | | | | | | Southee (1998) | | | | | |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 1 | 31.7 | Moderate | | | | | | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 2 | 31.7 | Moderate | | | | | | | | | | | Balls et al. (1995) |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 3 | 27.3 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 4 | 26.22 | Moderate | Balls et al. (1995) | | | | | | | | | | |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | 98 | 5 | 12.3 | Mild | Balls et al. (1995) | | | | | | | | | | |
| Sodium lauryl sulfate (3 %) | 151-21-3 | liquid | 3% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) | | | | | |
| Sodium lauryl sulfate (30 %) | 151-21-3 | liquid | 30% | n.p. | - | - | Moderate | Moderate | | | | | Casterton et al. (1996) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 1 | 2.1 | Mild | Mild | Category 1 | 4 | Category I | R41 | Balls et al. (1995) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 2 | 7.6 | Mild | | | | | | Balls et al. (1995) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 3 | 5.8 | Mild | | | | | | Balls et al. (1995) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 4 | 49.59 | Moderate | | | | | | Balls et al. (1995) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | >99 | 5 | 4.9 | Mild | | | | | | Balls et al. (1995) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 1 | 2 | Mild | | | | | | Gautheron et al. (1994) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 2 | 2 | Mild | | | | | | Gautheron et al. (1994) | | | | | |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 3 | 9 | Mild | Mild | Category 1 | 4 | Category I | R41 | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 4 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 5 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 6 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 7 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 8 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 10 | 9 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 11 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | n.p. | 12 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 1 (1) | 10.3 | Mild | | | | | | Nonirritant |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 1 (2) | 4.4 | Mild | Southee (1998) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 2 (1) | -0.3 | Nonirritant | Southee (1998) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 2 (2) | -0.1 | Nonirritant | Southee (1998) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 3 (1) | 2.7 | Nonirritant | Southee (1998) | | | | | |
| Sodium oxalate | 62-76-0 | solid | 20% | 99 | 3 (2) | 4.5 | Mild | Southee (1998) | | | | | |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 1 | 143.6 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 2 | 118.4 | Very severe | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 3 | 96.2 | Very severe | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 4 | 64.531 | Severe | | | | | | Balls et al. (1995) |
| Sodium perborate | 10486-00-7 | solid | 20% | 98.6 | 5 | 62.9 | Severe | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 1 | 23.6 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 2 | 7.9 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 3 | 14.2 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 4 | 20.65 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | 97 | 5 | 8.9 | Mild | | | | | | Balls et al. (1995) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 1 | 5 | Mild | Mild | Nonirritant | | Category II | Nonirritant | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 3 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 4 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 5 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 6 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 7 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 8 | 19 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 11 | 18 | Mild | | | | | | Gautheron et al. (1994) |
| Tetraaminopyrimidine sulfate | 5392-28-9 | solid | 20% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| Thiadiazole alkyl derivative | - | liquid | 100% | n.p. | - | 10.9 | Moderate | | | | | | Moderate |
| Thiourea | 62-56-6 | solid | 20% | >99 | 1 | 149.4 | Very severe | Very Severe | Animal died | | Animal died | Animal died | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 2 | 139.2 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 3 | 135.6 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 4 | 137.44 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | >99 | 5 | 99.1 | Very severe | | | | | | Balls et al. (1995) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 1 | 146 | Severe | Severe | SCNM | | SCNM | SCNM | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 2 | 175 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 3 | 169 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 4 | 152 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 5 | 140 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 6 | 120 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 7 | 129 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 8 | 173 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 9 | 151 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|----------------------------|--------------------|-------------|----------------------|---------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Thiourea | 62-56-6 | solid | 20% | n.p. | 11 | 203 | Severe | | | | | | Gautheron et al. (1994) |
| Thiourea | 62-56-6 | solid | 20% | n.p. | 12 | 104 | Severe | | | | | | Gautheron et al. (1994) |
| Toilet Bowl Cleaner (#1) | - | liquid | 100% | n.p. | - | 13.5 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Swanson et al. (1995) |
| Toilet Bowl Cleaner (#4) | - | liquid | 100% | n.p. | - | 15 | Mild | Mild | Nonirritant | | SCNM | Nonirritant | Swanson et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 1 | 43.3 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 2 | 33.2 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 3 | 37.2 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 4 | 38.41 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | 99 | 5 | 26.1 | Moderate | | | | | | Balls et al. (1995) |
| Toluene | 108-88-3 | liquid | 100% | n.p. | - | - | Severe | Severe | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 1 | 81.9 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 2 | 49.8 | Moderate | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 3 | 75.3 | Severe | Severe/Very Severe | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 4 | 92.97 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | reagent grade | 5 | 79.3 | Severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (3%) | 76-03-9 | liquid | 3% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 1 | 272 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 2 | 225 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 3 | 296.9 | Very severe | Very Severe | Category 1 | 4 | Category I | R41 | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 4 | 323.08 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | reagent grade | 5 | 203.7 | Very severe | | | | | | Balls et al. (1995) |
| Trichloroacetic acid (30%) | 76-03-9 | liquid | 30% | n.p. | - | - | Severe | Severe | Category 1 | 4 | Category I | R41 | Casterton et al. (1996) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 1 | 47 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 2 | 42 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 3 | 78 | Severe | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 4 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 5 | 42 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 6 | 47 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 7 | 48 | Moderate | Moderate | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 8 | 24 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 9 | 91 | Severe | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 11 | 28 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,3-Trichloropropane | 96-18-4 | liquid | 100% | n.p. | 12 | 47 | Moderate | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 1 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 2 | 4 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 3 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 5 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 6 | 1 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 7 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 8 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 11 | 5 | Mild | | | | | | Gautheron et al. (1994) |
| Triethanolamine | 102-71-6 | liquid | 100% | n.p. | 12 | 6 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 1 | 25 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 2 | 14 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 3 | 26 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 4 | 11 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 5 | 27 | Moderate | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 6 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 7 | 9 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 8 | 15 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 9 | 21 | Mild | | | | | | Gautheron et al. (1994) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|------------------------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 10 | 10 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 11 | 7 | Mild | | | | | | Gautheron et al. (1994) |
| 1,2,4-Trimethylbenzene | 95-63-6 | liquid | 100% | n.p. | 12 | 21 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-100 (1%) | 9002-93-1 | liquid | 1% | n.p. | - | - | Mild | Mild | | | | | Casterton et al. (1996) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 1 | 85.7 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 2 | 76 | Severe | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 3 | 86.1 | Very severe | Severe/Very Severe | Category 1 | NC | Category II | R41 | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 4 | 57.58 | Severe | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | 98 | 5 | 46.2 | Moderate | | | | | | Balls et al. (1995) |
| Triton X-100 (10%) | 9002-93-1 | liquid | 10% | n.p. | - | - | Severe | Severe | Category 1 | NC | Category II | R41 | Casterton et al. (1996) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 1 | 74.3 | Severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 2 | 106.6 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 3 | 80.2 | Very severe | Very Severe | Category 2A | | Category III | Nonirritant | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 4 | 76.79 | Very severe | | | | | | Balls et al. (1995) |
| Triton X-100 (5 %) | 9002-93-1 | liquid | 5% | 98 | 5 | 53.6 | Moderate | | | | | | Balls et al. (1995) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 5% | n.p. | - | - | Moderate | Moderate | Category 2A | | Category III | Nonirritant | Casterton et al. (1996) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 1 (1) | 3.7 | Mild | | | | | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 1 (2) | 1.8 | Mild | | | | | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 2 (1) | 5.8 | Mild | Mild | Category 2B | | Category III | R36 | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 2 (2) | 3.4 | Mild | | | | | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 3 (1) | 3.0 | Nonirritant | | | | | | Southee (1998) |
| Triton X-100 (5%) | 9002-93-1 | liquid | 10% | 98 | 3 (2) | 1.9 | Nonirritant | | | | | | Southee (1998) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 1 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 2 | 1 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 3 | -1 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 4 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 5 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 6 | 2 | Mild | Mild | Nonirritant | | Category IV | Nonirritant | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 7 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 8 | 2 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 9 | 3 | Mild | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 10 | no data | n.a. | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 11 | -2 | Nonirritant | | | | | | Gautheron et al. (1994) |
| Triton X-155 | 9010-44-0 | surfactant | 10% | n.p. | 12 | 0 | Mild | | | | | | Gautheron et al. (1994) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 1 | -0.6 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 2 | -1.1 | Mild | Mild | Nonirritant | | Category III | Nonirritant | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 3 | -1.6 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 4 | 2.711 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | n.p. | 98 | 5 | 0.4 | Mild | | | | | | Balls et al. (1995) |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 1 (1) | 0.3 | Mild | | | | | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 1 (2) | 0.0 | Mild | | | | | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 2 (1) | 0.4 | Mild | Nonirritant | Nonirritant | | Category III | Nonirritant | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 2 (2) | 0.4 | Nonirritant | | | | | | Southee (1998) |

Comparison of *In Vivo* and *In Vitro* Ocular Irritancy Classifications: Sorted by Substance Name

| Substance | CASRN ¹ | Form Tested | Concentration Tested | Purity (%) | Lab No. | <i>In Vitro</i> Score | <i>In Vitro</i> Classification ² | Consensus Classification ³ | <i>In Vivo</i> GHS ^{4,5} | GHS Category 1 SubClass ⁶ | <i>In Vivo</i> EPA ^{7,8} | <i>In Vivo</i> EU ^{9,10} | Reference |
|-----------|--------------------|-------------|----------------------|------------|---------|-----------------------|---|---------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 3 (1) | 0.3 | Nonirritant | | | | | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | 100% | 98 | 3 (2) | 0.0 | Nonirritant | | | | | | Southee (1998) |
| Tween 20 | 9005-64-5 | liquid | 100% | n.p. | - | - | Mild | Mild | Nonirritant | | Category III | Nonirritant | Casterton et al. (1996) |
| Xylene | 1330-20-7 | liquid | 100% | n.p. | - | - | Moderate | Moderate | Nonirritant | | Category II | Nonirritant | Casterton et al. (1996) |

¹CASRN=Chemical Abstract Services Registry Number

²*In Vitro* Classification represents the BCOP ocular irritancy classification assigned for each chemical in the study for each test for a specific substance

³Consensus classification represents the overall BCOP ocular irritancy classification assigned for each chemical in the study based on the majority of ocular irritancy classification calls

⁴GHS=Globally Harmonized System (UN [2003])

⁵Eye Irritant Category 1 = irreversible effects on the eye/serious damage to the eye; Category 2A = reversible effects on the eye/irritating to the eyes; Category 2B = reversible effects on the eye/mildly irritating to the eyes; Nonirritant = not an eye

⁶NICEATM-defined subgroups assigned based on the lesions that drove classification of a GHS Category 1 substance. 1: based on lesions that are persistent; 2: based on lesions that are severe (not including corneal opacity score equal to 4); 3: based on lesions that are both severe and persistent; and 4: corneal opacity score equal to 4 at any time; NC: not classified because none of the above criteria were met

⁷EPA=U.S. Environmental Protection Agency (EPA [1996]).

⁸Toxicity Category I for the Primary Eye Irritation Study = Corrosive, or corneal involvement or irritation not reversible within 21 days; Category II = Corneal involvement or irritation clearing in 8-21 days; Category III = Corneal involvement or irritation clearing in 1-7 days; Category IV: minimal effects clearing in less than 24 hr

⁹EU=European Union (EU [2001]).

¹⁰Risk phrase R41 = risk of serious damage to the eyes; R36 = irritating to the eyes; nonirritant = not an eye irritant.

¹¹SCNM=Study Criteria Not Met

¹²n.p.=Not provided

¹³n.a.=Not applicable

Appendix E

Intralaboratory Coefficient of Variation (CV) Analysis of BCOP

| | | |
|-----------|--|-------------|
| E1 | BCOP Data from Southee 1998 | E-3 |
| E2 | BCOP Data from Dr. Joseph Sina | E-17 |
| E3 | BCOP Data from Dr. Freddy Van Goethem | E-27 |

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Appendix E1

BCOP Data from Southee (1998)

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**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | In Vitro Score ¹ | Prediction | |
|---|------------------|---------------|---------|--------------|-----------------------------|------------|--------|
| Ammonium nitrate - Lab 1 (1) | 1 | 100% | 6.0 | 0.078 | 7.2 | | |
| | 2 | | 2.0 | 0.022 | 2.3 | | |
| | 3 | | 5.0 | 0.011 | 5.2 | | Mild |
| | mean | | 4.3 | 0.037 | 4.9 | | |
| | SD | | 2.1 | 0.036 | 2.5 | | |
| | %CV | | 48.0 | 97.1 | 50.3 | | |
| Ammonium nitrate - Lab 1 (2) | 1 | 100% | 5.7 | 0.038 | 6.3 | | |
| | 2 | | 5.7 | 0.094 | 7.1 | | Mild |
| | 3 | | 3.7 | 0.045 | 4.4 | | |
| | mean | | 5.0 | 0.059 | 5.9 | | |
| | SD | | 1.2 | 0.031 | 1.4 | | |
| | %CV | | 22.9 | 51.7 | 23.4 | | |
| Ammonium nitrate - Lab 2 (1) | 1 | 100% | 2.3 | 0.123 | 4.1 | | |
| | 2 | | 2.3 | 0.221 | 5.6 | | Mild |
| | 3 | | 0.3 | 0.116 | 2.0 | | |
| | mean | | 1.6 | 0.153 | 3.9 | | |
| | SD | | 1.2 | 0.059 | 1.8 | | |
| | %CV | | 70.7 | 38.3 | 46.4 | | |
| Ammonium nitrate - Lab 2 (2) | 1 | 100% | 1.7 | 0.057 | 2.6 | | |
| | 2 | | 1.7 | 0.139 | 3.8 | | Mild |
| | 3 | | 2.7 | 0.126 | 4.6 | | |
| | mean | | 2.0 | 0.107 | 3.7 | | |
| | SD | | 0.6 | 0.044 | 1.0 | | |
| | %CV | | 28.4 | 41.1 | 27.5 | | |
| Ammonium nitrate - Lab 3 (1) | 1 | 100% | 4.0 | 0.126 | 5.9 | | |
| | 2 | | 3.0 | 0.111 | 4.7 | | Mild |
| | 3 | | 4.0 | 0.063 | 4.9 | | |
| | mean | | 3.7 | 0.100 | 5.2 | | |
| | SD | | 0.6 | 0.033 | 0.6 | | |
| | %CV | | 15.7 | 32.9 | 12.4 | | |
| Ammonium nitrate - Lab 3 (2) | 1 | 100% | 4.0 | 0.191 | 6.9 | | |
| | 2 | | 4.0 | 0.078 | 5.2 | | Mild |
| | 3 | | 5.0 | 0.207 | 8.1 | | |
| | mean | | 4.3 | 0.159 | 6.7 | | |
| | SD | | 0.6 | 0.070 | 1.5 | | |
| | %CV | | 13.3 | 44.3 | 21.6 | | |
| Benzalkonium chloride - Lab 1 (1) | 1 | 100% | 79.7 | 8.005 | 199.8 | | |
| | 2 | | 85.7 | 7.850 | 203.5 | | Severe |
| | 3 | | 86.7 | 6.370 | 182.3 | | |
| | mean | | 84.0 | 7.408 | 195.2 | | |
| | SD | | 3.8 | 0.903 | 11.3 | | |
| | %CV | | 4.5 | 12.2 | 5.8 | | |
| Benzalkonium chloride - Lab 1 (2) | 1 | 100% | 89.3 | 3.326 | 139.2 | | |
| | 2 | | 84.3 | 3.519 | 137.1 | | Severe |
| | 3 | | 83.3 | 3.070 | 129.4 | | |
| | mean | | 85.6 | 3.305 | 135.2 | | |
| | SD | | 3.2 | 0.225 | 5.2 | | |
| | %CV | | 3.8 | 6.8 | 3.8 | | |
| Benzalkonium chloride - Lab 1 (3) | 1 | 100% | 83.0 | 3.708 | 138.6 | | |
| | 2 | | 80.0 | 3.989 | 139.8 | | Severe |
| | 3 | | 83.0 | 3.490 | 135.4 | | |
| | mean | | 82.0 | 3.729 | 137.9 | | |
| | SD | | 1.7 | 0.250 | 2.3 | | |
| | %CV | | 2.1 | 6.709 | 1.6 | | |
| Benzalkonium chloride - Lab 1 (4) | 1 | 100% | 82.0 | 5.8 | 168.6 | | |
| | 2 | | 82.0 | 3.539 | 135.1 | | Severe |
| | 3 | | 91.0 | 4.987 | 165.8 | | |
| | mean | | 85.0 | 4.766 | 156.5 | | |
| | SD | | 5.2 | 1.132 | 18.6 | | |
| | %CV | | 6.1 | 23.8 | 11.9 | | |
| Benzalkonium chloride - Lab 1 (5) | 1 | 100% | 89.7 | 3.229 | 138.1 | | |
| | 2 | | 86.7 | 3.415 | 137.9 | | Severe |
| | 3 | | 86.7 | 3.418 | 138.0 | | |
| | mean | | 87.7 | 3.354 | 138.0 | | |
| | SD | | 1.7 | 0.108 | 0.1 | | |
| | %CV | | 2.0 | 3.2 | 0.1 | | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction | |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|--------|
| Benzalkonium chloride - Lab 2 (1) | 1 | 100% | 95.0 | 3.919 | 153.8 | | |
| | 2 | | 80.0 | 4.237 | 143.6 | | |
| | 3 | | 89.0 | 5.122 | 165.8 | | Severe |
| | mean | | 88.0 | 4.426 | 154.4 | | |
| | SD | | 7.5 | 0.623 | 11.1 | | |
| | %CV | | 8.6 | 14.1 | 7.2 | | |
| Benzalkonium chloride - Lab 2 (2) | 1 | 100% | 106.3 | 4.780 | 178.0 | | |
| | 2 | | 91.3 | 3.459 | 143.2 | | |
| | 3 | | 86.3 | 4.205 | 149.4 | | Severe |
| | mean | | 94.6 | 4.148 | 156.9 | | |
| | SD | | 10.4 | 0.662 | 18.6 | | |
| | %CV | | 11.0 | 16.0 | 11.8 | | |
| Benzalkonium chloride - Lab 2 (3) | 1 | 100% | 86.0 | 4.324 | 150.9 | | |
| | 2 | | 80.0 | 4.246 | 143.7 | | |
| | 3 | | 95.0 | 4.187 | 157.8 | | Severe |
| | mean | | 87.0 | 4.252 | 150.8 | | |
| | SD | | 7.5 | 0.069 | 7.1 | | |
| | %CV | | 8.7 | 1.6 | 4.7 | | |
| Benzalkonium chloride - Lab 2 (4) | 1 | 100% | 96.0 | 4.512 | 163.7 | | |
| | 2 | | 93.0 | 5.200 | 171.0 | | |
| | 3 | | 90.0 | 3.123 | 136.8 | | Severe |
| | mean | | 93.0 | 4.278 | 157.2 | | |
| | SD | | 3.0 | 1.058 | 18.0 | | |
| | %CV | | 3.2 | 24.7 | 11.5 | | |
| Benzalkonium chloride - Lab 2 (5) | 1 | 100% | 97.0 | 4.035 | 157.5 | | |
| | 2 | | 97.0 | 4.296 | 161.4 | | |
| | 3 | | 101.0 | 3.584 | 154.8 | | Severe |
| | mean | | 98.3 | 3.972 | 157.9 | | |
| | SD | | 2.3 | 0.360 | 3.3 | | |
| | %CV | | 2.3 | 9.1 | 2.1 | | |
| Benzalkonium chloride - Lab 3 (1) | 1 | 100% | 96.7 | 3.842 | 154.3 | | |
| | 2 | | 98.7 | 5.102 | 175.2 | | |
| | 3 | | 94.7 | 3.102 | 141.2 | | Severe |
| | mean | | 96.7 | 4.015 | 156.9 | | |
| | SD | | 2.0 | 1.011 | 17.1 | | |
| | %CV | | 2.1 | 25.2 | 10.9 | | |
| Benzalkonium chloride - Lab 3 (2) | 1 | 100% | 106.3 | 3.321 | 156.1 | | |
| | 2 | | 86.3 | 6.381 | 182.0 | | |
| | 3 | | 85.3 | 4.456 | 152.1 | | Severe |
| | mean | | 92.6 | 4.719 | 163.4 | | |
| | SD | | 11.8 | 1.547 | 16.2 | | |
| | %CV | | 12.8 | 32.8 | 9.9 | | |
| Benzalkonium chloride - Lab 3 (3) | 1 | 100% | 101.0 | 4.364 | 166.5 | | |
| | 2 | | 102.0 | 3.974 | 161.6 | | |
| | 3 | | 112.0 | 4.609 | 181.1 | | Severe |
| | mean | | 105.0 | 4.316 | 169.7 | | |
| | SD | | 6.1 | 0.320 | 10.1 | | |
| | %CV | | 5.8 | 7.4 | 6.0 | | |
| Benzalkonium chloride - Lab 3 (4) | 1 | 100% | 99.3 | 3.727 | 155.2 | | |
| | 2 | | 91.3 | 5.637 | 175.9 | | |
| | 3 | | 95.3 | 4.127 | 157.2 | | Severe |
| | mean | | 95.3 | 4.497 | 162.8 | | |
| | SD | | 4.0 | 1.007 | 11.4 | | |
| | %CV | | 4.2 | 22.4 | 7.0 | | |
| Benzalkonium chloride - Lab 3 (5) | 1 | 100% | 84.0 | 3.993 | 143.9 | | |
| | 2 | | 97.0 | 4.153 | 159.3 | | |
| | 3 | | 96.0 | 3.698 | 151.5 | | Severe |
| | mean | | 92.3 | 3.948 | 151.6 | | |
| | SD | | 7.2 | 0.231 | 7.7 | | |
| | %CV | | 7.8 | 5.8 | 5.1 | | |
| Hexadecyl trimethyl ammonium bromide - Lab 1 (1) | 1 | 10% | 15.3 | 0.968 | 29.8 | | |
| | 2 | | 11.3 | 0.512 | 19.0 | | |
| | 3 | | 13.3 | 0.481 | 20.5 | | Mild |
| | mean | | 13.3 | 0.654 | 23.1 | | |
| | SD | | 2.0 | 0.273 | 5.9 | | |
| | %CV | | 15.0 | 41.7 | 25.3 | | |
| Hexadecyl trimethyl ammonium bromide - Lab 1 (2) | 1 | 10% | 13.0 | 0.569 | 21.5 | | |
| | 2 | | 11.0 | 0.554 | 19.3 | | |
| | 3 | | 5.0 | 0.374 | 19.3 | | Mild |
| | mean | | 9.7 | 0.499 | 20.0 | | |
| | SD | | 4.2 | 0.109 | 1.3 | | |
| | %CV | | 43.1 | 21.7 | 6.3 | | |
| Hexadecyl trimethyl ammonium bromide - Lab 2 (1) | 1 | 10% | 16.0 | 1.970 | 45.6 | | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|--|------------------|---------------|---------|--------------|------------------------------------|------------|
| | 2 | | 10.0 | 0.771 | 21.6 | |
| | 3 | | 15.0 | 1.454 | 36.8 | Moderate |
| | mean | | 13.7 | 1.398 | 34.7 | |
| | SD | | 3.2 | 0.601 | 12.1 | |
| | %CV | | 23.5 | 43.0 | 35.0 | |
| Hexadecy trimethyl ammonium bromide - Lab 2 (2) | 1 | 10% | 16.0 | 1.572 | 39.6 | |
| | 2 | | 15.0 | 2.686 | 55.3 | |
| | 3 | | 8.0 | 0.970 | 22.6 | Moderate |
| | mean | | 13.0 | 1.743 | 39.2 | |
| | SD | | 4.4 | 0.871 | 16.4 | |
| | %CV | | 33.5 | 50.0 | 41.8 | |
| Hexadecy trimethyl ammonium bromide - Lab 3 (1) | 1 | 10% | 18.3 | 0.988 | 33.1 | |
| | 2 | | 16.3 | 0.846 | 29.0 | |
| | 3 | | 17.3 | 1.039 | 32.9 | Moderate |
| | mean | | 17.3 | 0.958 | 31.7 | |
| | SD | | 1.0 | 0.100 | 2.3 | |
| | %CV | | 5.8 | 10.4 | 7.3 | |
| Hexadecy trimethyl ammonium bromide - Lab 3 (2) | 1 | 10% | 17.0 | 0.537 | 25.1 | |
| | 2 | | 16.0 | 0.402 | 22.0 | Moderate |
| | 3 | | 20.0 | 1.515 | 42.7 | |
| | mean | | 17.7 | 0.818 | 29.9 | |
| | SD | | 2.1 | 0.607 | 11.2 | |
| | %CV | | 11.8 | 74.3 | 37.3 | |
| Ethanol - Lab 1 (1) | 1 | 100% | 16.3 | 1.227 | 34.7 | |
| | 2 | | 20.3 | 1.534 | 43.3 | Moderate |
| | 3 | | 16.3 | 1.034 | 31.8 | |
| | mean | | 17.6 | 1.265 | 36.6 | |
| | SD | | 2.3 | 0.252 | 6.0 | |
| | %CV | | 13.1 | 19.9 | 16.3 | |
| Ethanol - Lab 1 (2) | 1 | 100% | 22.7 | 1.753 | 49.0 | |
| | 2 | | 13.7 | 1.502 | 36.2 | Moderate |
| | 3 | | 12.7 | 0.990 | 27.6 | |
| | mean | | 16.4 | 1.415 | 37.6 | |
| | SD | | 5.5 | 0.389 | 10.8 | |
| | %CV | | 33.7 | 27.5 | 28.6 | |
| Ethanol - Lab 1 (3) | 1 | 100% | 15.0 | 1.325 | 34.9 | |
| | 2 | | 12.0 | 0.703 | 22.5 | Moderate |
| | 3 | | 14.0 | 1.157 | 31.4 | |
| | mean | | 13.7 | 1.062 | 29.6 | |
| | SD | | 1.5 | 0.322 | 6.4 | |
| | %CV | | 11.2 | 30.3 | 21.6 | |
| Ethanol - Lab 1 (4) | 1 | 100% | 11.7 | 2.259 | 45.6 | |
| | 2 | | 13.7 | 2.050 | 44.5 | Moderate |
| | 3 | | 12.7 | 1.491 | 35.1 | |
| | mean | | 12.7 | 1.933 | 41.7 | |
| | SD | | 1.0 | 0.397 | 5.8 | |
| | %CV | | 7.9 | 20.5 | 13.8 | |
| Ethanol - Lab 1 (5) | 1 | 100% | 13.0 | 0.987 | 27.8 | |
| | 2 | | 14.0 | 1.084 | 30.3 | Moderate |
| | 3 | | 17.0 | 1.303 | 36.5 | |
| | mean | | 14.7 | 1.125 | 31.5 | |
| | SD | | 2.1 | 0.162 | 4.5 | |
| | %CV | | 14.2 | 14.4 | 14.2 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| Ethanol - Lab 2 (1) | 1 | 100% | 14.3 | 1.576 | 37.9 | Moderate |
| | 2 | | 12.3 | 3.163 | 59.7 | |
| | 3 | | 13.3 | 3.138 | 60.4 | |
| | mean | | 13.3 | 2.626 | 52.7 | |
| | SD | | 1.0 | 0.909 | 12.8 | |
| | %CV | | 7.5 | 34.6 | 24.3 | |
| Ethanol - Lab 2 (2) | 1 | 100% | 18.3 | 1.979 | 48.0 | Severe |
| | 2 | | 18.3 | 2.231 | 51.8 | |
| | 3 | | 14.3 | 3.303 | 63.8 | |
| | mean | | 17.0 | 2.504 | 54.5 | |
| | SD | | 2.3 | 0.703 | 8.2 | |
| | %CV | | 13.6 | 28.1 | 15.1 | |
| Ethanol - Lab 2 (3) | 1 | 100% | 22.0 | 2.511 | 59.7 | Severe |
| | 2 | | 13.0 | 3.821 | 70.3 | |
| | 3 | | 14.0 | 2.743 | 55.1 | |
| | mean | | 16.3 | 3.025 | 61.7 | |
| | SD | | 4.9 | 0.699 | 7.8 | |
| | %CV | | 30.2 | 23.1 | 12.6 | |
| Ethanol - Lab 2 (4) | 1 | 100% | 19.0 | 3.106 | 65.6 | Severe |
| | 2 | | 16.0 | 2.859 | 58.9 | |
| | 3 | | 17.0 | 2.606 | 56.1 | |
| | mean | | 17.3 | 2.857 | 60.2 | |
| | SD | | 1.5 | 0.250 | 4.9 | |
| | %CV | | 8.8 | 8.8 | 8.1 | |
| Ethanol - Lab 2 (5) | 1 | 100% | 14.0 | 2.444 | 50.7 | Moderate |
| | 2 | | 13.0 | 3.126 | 59.9 | |
| | 3 | | 17.0 | 2.339 | 52.1 | |
| | mean | | 14.7 | 2.636 | 54.2 | |
| | SD | | 2.1 | 0.427 | 5.0 | |
| | %CV | | 14.2 | 16.2 | 9.1 | |
| Ethanol - Lab 3 (1) | 1 | 100% | 18.3 | 0.853 | 31.1 | Moderate |
| | 2 | | 17.3 | 2.756 | 58.6 | |
| | 3 | | 14.3 | 2.471 | 51.4 | |
| | mean | | 16.6 | 2.027 | 47.0 | |
| | SD | | 2.1 | 1.026 | 14.3 | |
| | %CV | | 12.5 | 50.6 | 30.3 | |
| Ethanol - Lab 3 (2) | 1 | 100% | 16.3 | 1.866 | 44.3 | Moderate |
| | 2 | | 21.3 | 1.761 | 47.7 | |
| | 3 | | 16.3 | 1.866 | 44.3 | |
| | mean | | 18.0 | 1.831 | 45.4 | |
| | SD | | 2.9 | 0.061 | 2.0 | |
| | %CV | | 16.1 | 3.3 | 4.3 | |
| Ethanol - Lab 3 (3) | 1 | 100% | 17.3 | 1.726 | 43.2 | Moderate |
| | 2 | | 18.3 | 1.592 | 42.2 | |
| | 3 | | 22.3 | 1.701 | 47.8 | |
| | mean | | 19.3 | 1.673 | 44.4 | |
| | SD | | 2.6 | 0.071 | 3.0 | |
| | %CV | | 13.7 | 4.3 | 6.7 | |
| Ethanol - Lab 3 (4) | 1 | 100% | 19.0 | 1.301 | 38.5 | Moderate |
| | 2 | | 23.0 | 1.374 | 43.6 | |
| | 3 | | 24.0 | 2.073 | 55.1 | |
| | mean | | 22.0 | 1.583 | 45.7 | |
| | SD | | 2.6 | 0.426 | 8.5 | |
| | %CV | | 12.0 | 26.9 | 18.6 | |
| Ethanol - Lab 3 (5) | 1 | 100% | 18.3 | 2.700 | 58.8 | Moderate |
| | 2 | | 17.3 | 2.515 | 55.0 | |
| | 3 | | 20.3 | 1.970 | 49.9 | |
| | mean | | 18.6 | 2.395 | 54.6 | |
| | SD | | 1.5 | 0.380 | 4.5 | |
| | %CV | | 8.2 | 15.8 | 8.2 | |
| Imidazole - Lab 1 (1) | 1 | 100% | 89.0 | 3.312 | 138.7 | Severe |
| | 2 | | 93.0 | 3.325 | 142.9 | |
| | 3 | | 92.0 | 3.501 | 144.5 | |
| | mean | | 91.3 | 3.379 | 142.0 | |
| | SD | | 2.1 | 0.106 | 3.0 | |
| | %CV | | 2.3 | 3.1 | 2.1 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | In Vitro Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|-----------------------------|------------|
| Imidazole - Lab 1 (2) | 1 | 100% | 95.0 | 2.629 | 134.4 | |
| | 2 | | 89.0 | 3.760 | 145.0 | Severe |
| | 3 | | 80.0 | 3.528 | 132.9 | |
| | mean | | 88.0 | 3.306 | 137.4 | |
| | SD | | 7.5 | 0.597 | 6.6 | |
| | %CV | | 8.6 | 18.1 | 4.8 | |
| Imidazole - Lab 1 (3) | 1 | 100% | 62.7 | 1.940 | 91.8 | |
| | 2 | | 75.7 | 1.963 | 105.1 | Severe |
| | 3 | | 82.7 | 3.792 | 139.6 | |
| | mean | | 73.7 | 2.565 | 112.2 | |
| | SD | | 10.1 | 1.063 | 24.7 | |
| | %CV | | 13.8 | 41.4 | 22.0 | |
| Imidazole - Lab 1 (4) | 1 | 100% | 94.7 | 2.141 | 126.8 | |
| | 2 | | 87.7 | 2.664 | 127.7 | Severe |
| | 3 | | 75.7 | 4.213 | 138.9 | |
| | mean | | 86.0 | 3.006 | 131.1 | |
| | SD | | 9.6 | 1.078 | 6.7 | |
| | %CV | | 11.2 | 35.8 | 5.1 | |
| Imidazole - Lab 1 (5) | 1 | 100% | 114.7 | 2.972 | 159.3 | |
| | 2 | | 85.7 | 3.390 | 136.6 | Severe |
| | 3 | | 90.7 | 3.361 | 141.1 | |
| | mean | | 97.0 | 3.241 | 145.7 | |
| | SD | | 15.5 | 0.233 | 12.0 | |
| | %CV | | 16.0 | 7.2 | 8.3 | |
| Imidazole - Lab 2 (1) | 1 | 100% | 88.7 | 3.831 | 146.2 | |
| | 2 | | 74.7 | 3.227 | 123.1 | Severe |
| | 3 | | 93.7 | 3.412 | 144.9 | |
| | mean | | 85.7 | 3.490 | 138.1 | |
| | SD | | 9.8 | 0.309 | 13.0 | |
| | %CV | | 11.5 | 8.9 | 9.4 | |
| Imidazole - Lab 2 (2) | 1 | 100% | 95.0 | 3.032 | 140.5 | |
| | 2 | | 96.0 | 3.715 | 151.7 | Severe |
| | 3 | | 73.0 | 3.666 | 128.0 | |
| | mean | | 88.0 | 3.471 | 140.1 | |
| | SD | | 13.0 | 0.381 | 11.9 | |
| | %CV | | 14.8 | 11.0 | 8.5 | |
| Imidazole - Lab 2 (3) | 1 | 100% | 86.3 | 2.539 | 124.4 | |
| | 2 | | 92.3 | 3.357 | 142.7 | Severe |
| | 3 | | 80.3 | 3.825 | 137.7 | |
| | mean | | 86.3 | 3.240 | 134.9 | |
| | SD | | 6.0 | 0.651 | 9.5 | |
| | %CV | | 7.0 | 20.1 | 7.0 | |
| Imidazole - Lab 2 (4) | 1 | 100% | 86.3 | 4.085 | 147.6 | |
| | 2 | | 101.3 | 3.416 | 152.5 | Severe |
| | 3 | | 89.3 | 5.471 | 171.4 | |
| | mean | | 92.3 | 4.324 | 157.2 | |
| | SD | | 7.9 | 1.048 | 12.6 | |
| | %CV | | 8.6 | 24.2 | 8.0 | |
| Imidazole - Lab 2 (5) | 1 | 100% | 106.7 | 2.583 | 145.4 | |
| | 2 | | 82.7 | 3.371 | 133.3 | Severe |
| | 3 | | 74.7 | 3.969 | 134.2 | |
| | mean | | 88.0 | 3.308 | 137.6 | |
| | SD | | 16.7 | 0.695 | 6.7 | |
| | %CV | | 18.9 | 21.0 | 4.9 | |
| Imidazole - Lab 3 (1) | 1 | 100% | 73.0 | 3.756 | 129.3 | |
| | 2 | | 76.0 | 2.956 | 120.3 | Severe |
| | 3 | | 100.0 | 4.611 | 169.2 | |
| | mean | | 83.0 | 3.774 | 139.6 | |
| | SD | | 14.8 | 0.828 | 26.0 | |
| | %CV | | 17.8 | 21.9 | 18.6 | |
| Imidazole - Lab 3 (2) | 1 | 100% | 89.0 | 2.625 | 128.4 | |
| | 2 | | 84.0 | 3.070 | 130.1 | Severe |
| | 3 | | 102.0 | 4.000 | 162.0 | |
| | mean | | 91.7 | 3.232 | 140.2 | |
| | SD | | 9.3 | 0.702 | 18.9 | |
| | %CV | | 10.1 | 21.7 | 13.5 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| Imidazole - Lab 3 (3) | 1 | 100% | 77.7 | 3.604 | 131.8 | Severe |
| | 2 | | 83.7 | 2.339 | 118.8 | |
| | 3 | | 79.7 | 2.779 | 121.4 | |
| | mean | | 80.4 | 2.907 | 124.0 | |
| | SD | | 3.1 | 0.642 | 6.9 | |
| | %CV | | 3.8 | 22.1 | 5.5 | |
| Imidazole - Lab 3 (4) | 1 | 100% | 80.0 | 3.721 | 135.8 | Severe |
| | 2 | | 84.0 | 3.106 | 130.6 | |
| | 3 | | 83.0 | 2.451 | 119.8 | |
| | mean | | 82.3 | 3.093 | 128.7 | |
| | SD | | 2.1 | 0.635 | 8.2 | |
| | %CV | | 2.5 | 20.5 | 6.3 | |
| Imidazole - Lab 3 (5) | 1 | 100% | 68.3 | 2.741 | 109.4 | Severe |
| | 2 | | 77.3 | 2.976 | 121.9 | |
| | 3 | | 84.3 | 3.636 | 138.8 | |
| | mean | | 76.6 | 3.118 | 123.4 | |
| | SD | | 8.0 | 0.464 | 14.8 | |
| | %CV | | 10.5 | 14.9 | 12.0 | |
| NaOH - Lab 1 (1) | 1 | 10% | 190.7 | 5.354 | 271.0 | Severe |
| | 2 | | 140.7 | 4.895 | 214.1 | |
| | 3 | | 198.7 | 3.404 | 249.8 | |
| | mean | | 176.7 | 4.551 | 245.0 | |
| | SD | | 31.4 | 1.019 | 28.8 | |
| | %CV | | 17.8 | 22.4 | 11.7 | |
| NaOH - Lab 1 (2) | 1 | 10% | 171.0 | 3.483 | 223.2 | Severe |
| | 2 | | 174.0 | 3.660 | 228.9 | |
| | 3 | | 171.0 | 3.885 | 229.3 | |
| | mean | | 172.0 | 3.676 | 227.1 | |
| | SD | | 1.7 | 0.201 | 3.4 | |
| | %CV | | 1.0 | 5.5 | 1.5 | |
| NaOH - Lab 2 (1) | 1 | 10% | 189.0 | 4.228 | 252.4 | Severe |
| | 2 | | 173.0 | 4.650 | 242.8 | |
| | 3 | | 148.0 | 5.386 | 228.8 | |
| | mean | | 170.0 | 4.755 | 241.3 | |
| | SD | | 20.7 | 0.586 | 11.9 | |
| | %CV | | 12.2 | 12.3 | 4.9 | |
| NaOH - Lab 2 (2) | 1 | 10% | 180.0 | 4.122 | 241.8 | Severe |
| | 2 | | 155.0 | 4.836 | 227.5 | |
| | 3 | | 165.0 | 4.812 | 237.2 | |
| | mean | | 166.7 | 4.590 | 235.5 | |
| | SD | | 12.6 | 0.405 | 7.3 | |
| | %CV | | 7.5 | 8.8 | 3.1 | |
| NaOH - Lab 3 (1) | 1 | 10% | 139.0 | 5.039 | 214.6 | Severe |
| | 2 | | 121.0 | 4.339 | 186.1 | |
| | 3 | | 112.0 | 4.434 | 178.5 | |
| | mean | | 124.0 | 4.604 | 193.1 | |
| | SD | | 13.7 | 0.380 | 19.0 | |
| | %CV | | 11.1 | 8.2 | 9.9 | |
| NaOH - Lab 3 (2) | 1 | 10% | 149.3 | 3.535 | 202.3 | Severe |
| | 2 | | 189.3 | 2.855 | 232.1 | |
| | 3 | | 157.3 | 3.520 | 210.1 | |
| | mean | | 165.3 | 3.303 | 214.8 | |
| | SD | | 21.2 | 0.388 | 15.5 | |
| | %CV | | 12.8 | 11.8 | 7.2 | |
| Sodium oxalate - Lab 1 (1) | 1 | 100% | -2.0 | 0.112 | -0.3 | Mild |
| | 2 | | -2.0 | 0.020 | -1.7 | |
| | 3 | | 1.0 | 0.017 | 1.3 | |
| | mean | | -1.0 | 0.050 | -0.2 | |
| | SD | | 1.7 | 0.054 | 1.5 | |
| | %CV | | -173.2 | 108.7 | -643.3 | |
| Sodium oxalate - Lab 1 (2) | 1 | 100% | -0.3 | 0.067 | 0.7 | Mild |
| | 2 | | -3.3 | 0.055 | -2.5 | |
| | 3 | | 0.7 | 0.044 | 1.4 | |
| | mean | | -1.0 | 0.055 | -0.1 | |
| | SD | | 2.1 | 0.012 | 2.1 | |
| | %CV | | -215.3 | 20.8 | -1559.4 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| Sodium oxalate - Lab 2 (1) | 1 | 100% | 7.7 | 0.127 | 9.6 | Mild |
| | 2 | | 7.7 | 0.112 | 9.4 | |
| | 3 | | 9.7 | 0.144 | 11.9 | |
| | mean | | 8.4 | 0.128 | 10.3 | |
| | SD | | 1.2 | 0.016 | 1.4 | |
| | %CV | | 13.8 | 12.5 | 13.5 | |
| Sodium oxalate - Lab 2 (2) | 1 | 100% | 3.7 | 0.069 | 4.7 | Mild |
| | 2 | | 2.7 | 0.044 | 3.4 | |
| | 3 | | 3.7 | 0.099 | 5.2 | |
| | mean | | 3.4 | 0.071 | 4.4 | |
| | SD | | 0.6 | 0.028 | 0.9 | |
| | %CV | | 17.1 | 39.0 | 21.0 | |
| Sodium oxalate - Lab 3 (1) | 1 | 100% | 1.3 | 0.032 | 1.8 | Mild |
| | 2 | | 2.3 | 0.088 | 3.6 | |
| | 3 | | 2.3 | 0.032 | 2.8 | |
| | mean | | 2.0 | 0.051 | 2.7 | |
| | SD | | 0.6 | 0.032 | 0.9 | |
| | %CV | | 29.4 | 63.8 | 33.0 | |
| Sodium oxalate - Lab 3 (2) | 1 | 100% | 3.3 | 0.174 | 5.9 | Mild |
| | 2 | | 2.3 | 0.145 | 4.5 | |
| | 3 | | 1.3 | 0.130 | 3.3 | |
| | mean | | 2.3 | 0.150 | 4.6 | |
| | SD | | 1.0 | 0.022 | 1.3 | |
| | %CV | | 43.5 | 14.9 | 28.5 | |
| Parafluoroaniline - Lab 1 (1) | 1 | 100% | 15.0 | 1.777 | 41.7 | Moderate |
| | 2 | | 14.0 | 1.965 | 43.5 | |
| | 3 | | 11.0 | 1.248 | 29.7 | |
| | mean | | 13.3 | 1.663 | 38.3 | |
| | SD | | 2.1 | 0.372 | 7.5 | |
| | %CV | | 15.6 | 22.4 | 19.6 | |
| Parafluoroaniline - Lab 1 (2) | 1 | 100% | 13.3 | 0.908 | 26.9 | Moderate |
| | 2 | | 21.3 | 1.970 | 50.9 | |
| | 3 | | 13.3 | 1.419 | 34.6 | |
| | mean | | 16.0 | 1.432 | 37.5 | |
| | SD | | 4.6 | 0.531 | 12.3 | |
| | %CV | | 28.9 | 37.081 | 32.7 | |
| Parafluoroaniline - Lab 2 (1) | 1 | 100% | 14.3 | 0.930 | 28.3 | Moderate |
| | 2 | | 16.3 | 1.521 | 39.1 | |
| | 3 | | 15.3 | 0.681 | 25.5 | |
| | mean | | 15.3 | 1.044 | 31.0 | |
| | SD | | 1.0 | 0.431 | 7.2 | |
| | %CV | | 6.5 | 41.3 | 23.2 | |
| Parafluoroaniline - Lab 2 (2) | 1 | 100% | 14.3 | 0.922 | 28.1 | Moderate |
| | 2 | | 20.3 | 1.332 | 40.3 | |
| | 3 | | 14.3 | 1.476 | 36.4 | |
| | mean | | 16.3 | 1.243 | 34.9 | |
| | SD | | 3.5 | 0.287 | 6.2 | |
| | %CV | | 21.3 | 23.1 | 17.8 | |
| Parafluoroaniline - Lab 3 (1) | 1 | 100% | 11.0 | 0.913 | 24.7 | Mild |
| | 2 | | 10.0 | 0.626 | 19.4 | |
| | 3 | | 12.0 | 0.674 | 22.1 | |
| | mean | | 11.0 | 0.738 | 22.1 | |
| | SD | | 1.0 | 0.154 | 2.7 | |
| | %CV | | 9.1 | 20.8 | 12.0 | |
| Parafluoroaniline - Lab 3 (2) | 1 | 100% | 14.7 | 0.665 | 24.7 | Moderate |
| | 2 | | 14.7 | 0.573 | 23.3 | |
| | 3 | | 16.7 | 0.868 | 29.7 | |
| | mean | | 15.4 | 0.702 | 25.9 | |
| | SD | | 1.2 | 0.151 | 3.4 | |
| | %CV | | 7.5 | 21.5 | 13.0 | |
| Sodium lauryl sulfate - Lab 1 (1) | 1 | 15% | 0.7 | 0.596 | 9.6 | Mild |
| | 2 | | -0.3 | 0.933 | 13.7 | |
| | 3 | | 1.7 | 1.507 | 24.3 | |
| | mean | | 0.7 | 1.012 | 15.9 | |
| | SD | | 1.0 | 0.461 | 7.6 | |
| | %CV | | 142.9 | 45.5 | 47.8 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| Sodium lauryl sulfate - Lab 1 (2) | 1 | 15% | 0.7 | 0.998 | 15.7 | Mild |
| | 2 | | 1.7 | 1.163 | 19.1 | |
| | 3 | | 0.7 | 1.096 | 17.1 | |
| | mean | | 1.0 | 1.086 | 17.3 | |
| | SD | | 0.6 | 0.083 | 1.7 | |
| | %CV | | 55.9 | 7.6 | 9.9 | |
| Sodium lauryl sulfate - Lab 2 (1) | 1 | 15% | -0.7 | 0.391 | 5.2 | Mild |
| | 2 | | -0.7 | 0.436 | 5.8 | |
| | 3 | | -0.7 | 0.398 | 5.3 | |
| | mean | | -0.7 | 0.408 | 5.4 | |
| | SD | | 0.0 | 0.024 | 0.3 | |
| | %CV | | 0.0 | 5.9 | 5.9 | |
| Sodium lauryl sulfate - Lab 2 (2) | 1 | 15% | 0.3 | 0.157 | 2.7 | Mild |
| | 2 | | -0.7 | 0.367 | 4.8 | |
| | 3 | | 0.3 | 0.519 | 8.1 | |
| | mean | | 0.0 | 0.348 | 5.2 | |
| | SD | | 0.6 | 0.182 | 2.7 | |
| | %CV | | -1732.1 | 52.3 | 52.3 | |
| Sodium lauryl sulfate - Lab 3 (1) | 1 | 15% | 1.0 | 0.567 | 9.5 | Mild |
| | 2 | | 0.0 | 0.594 | 8.9 | |
| | 3 | | 1.0 | 0.392 | 6.9 | |
| | mean | | 0.7 | 0.518 | 8.4 | |
| | SD | | 0.6 | 0.110 | 1.4 | |
| | %CV | | 86.6 | 21.2 | 16.1 | |
| Sodium lauryl sulfate - Lab 3 (2) | 1 | 15% | 2.0 | 0.354 | 7.3 | Mild |
| | 2 | | 1.0 | 0.230 | 4.5 | |
| | 3 | | 1.0 | 0.266 | 5.0 | |
| | mean | | 1.3 | 0.283 | 5.6 | |
| | SD | | 0.6 | 0.064 | 1.5 | |
| | %CV | | 43.3 | 22.5 | 26.7 | |
| Butyl cellulosolve - Lab 1 (1) | 1 | 100% | 31.3 | 5.071 | 107.4 | |
| | 2 | | 29.3 | 3.548 | 82.5 | |
| | 3 | | 28.3 | 4.020 | 88.6 | |
| | mean | | 29.6 | 4.213 | 92.8 | |
| | SD | | 1.5 | 0.780 | 13.0 | |
| | %CV | | 5.2 | 18.5 | 14.0 | |
| Butyl cellulosolve - Lab 1 (2) | 1 | 100% | 30.0 | 5.013 | 105.2 | Severe |
| | 2 | | 30.0 | 5.036 | 105.5 | |
| | 3 | | 34.0 | 3.528 | 86.9 | |
| | mean | | 31.3 | 4.526 | 99.2 | |
| | SD | | 2.3 | 0.864 | 10.7 | |
| | %CV | | 7.4 | 19.1 | 10.7 | |
| Butyl cellulosolve - Lab 2 (1) | 1 | 100% | 41.3 | 5.148 | 118.5 | Severe |
| | 2 | | 45.3 | 4.490 | 112.7 | |
| | 3 | | 30.3 | 4.236 | 93.8 | |
| | mean | | 39.0 | 4.625 | 108.3 | |
| | SD | | 7.8 | 0.471 | 12.9 | |
| | %CV | | 19.9 | 10.2 | 11.9 | |
| Butyl cellulosolve - Lab 2 (2) | 1 | 100% | 38.3 | 4.829 | 110.7 | |
| | 2 | | 45.3 | 4.106 | 106.9 | |
| | 3 | | 45.3 | 4.832 | 117.8 | |
| | mean | | 43.0 | 4.589 | 111.8 | |
| | SD | | 4.0 | 0.418 | 5.5 | |
| | %CV | | 9.4 | 9.1 | 4.9 | |
| Butyl cellulosolve - Lab 3 (1) | 1 | 100% | 36.7 | 3.490 | 89.1 | Severe |
| | 2 | | 37.7 | 4.865 | 110.7 | |
| | 3 | | 38.7 | 3.085 | 85.0 | |
| | mean | | 37.7 | 3.813 | 94.9 | |
| | SD | | 1.0 | 0.933 | 13.8 | |
| | %CV | | 2.7 | 24.5 | 14.5 | |
| Butyl cellulosolve - Lab 3 (2) | 1 | 100% | 30.7 | 3.474 | 82.8 | Severe |
| | 2 | | 40.7 | 3.204 | 88.8 | |
| | 3 | | 41.7 | 5.414 | 122.9 | |
| | mean | | 37.7 | 4.031 | 98.2 | |
| | SD | | 6.1 | 1.206 | 21.6 | |
| | %CV | | 16.1 | 29.9 | 22.0 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| 4-Carboxybenzaldehyde - Lab 1 (1) | 1 | 100% | 50.0 | 0.036 | 50.5 | Moderate |
| | 2 | | 44.0 | 0.040 | 44.6 | |
| | 3 | | 45.0 | 0.074 | 46.1 | |
| | mean | | 46.3 | 0.050 | 47.1 | |
| | SD | | 3.2 | 0.021 | 3.1 | |
| | %CV | | 6.9 | 41.8 | 6.5 | |
| 4-Carboxybenzaldehyde - Lab 1 (2) | 1 | 100% | 44.7 | 0.044 | 45.4 | Moderate |
| | 2 | | 49.7 | 0.057 | 50.6 | |
| | 3 | | 44.7 | 0.072 | 45.8 | |
| | mean | | 46.4 | 0.058 | 47.3 | |
| | SD | | 2.9 | 0.014 | 2.9 | |
| | %CV | | 6.2 | 24.3 | 6.1 | |
| 4-Carboxybenzaldehyde - Lab 2 (1) | 1 | 100% | 57.7 | 0.022 | 58.0 | Moderate |
| | 2 | | 54.7 | -0.001 | 54.7 | |
| | 3 | | 48.7 | 0.016 | 48.9 | |
| | mean | | 53.7 | 0.012 | 53.9 | |
| | SD | | 4.6 | 0.012 | 4.6 | |
| | %CV | | 8.5 | 96.7 | 8.6 | |
| 4-Carboxybenzaldehyde - Lab 2 (2) | 1 | 100% | 49.7 | 0.000 | 49.7 | Moderate |
| | 2 | | 49.7 | 0.001 | 49.7 | |
| | 3 | | 43.7 | 0.004 | 43.8 | |
| | mean | | 47.7 | 0.002 | 47.7 | |
| | SD | | 3.5 | 0.002 | 3.4 | |
| | %CV | | 7.3 | 124.9 | 7.1 | |
| 4-Carboxybenzaldehyde - Lab 3 (1) | 1 | 100% | 37.3 | 0.031 | 37.8 | Moderate |
| | 2 | | 42.3 | 0.003 | 42.3 | |
| | 3 | | 46.3 | 0.005 | 46.4 | |
| | mean | | 42.0 | 0.013 | 42.2 | |
| | SD | | 4.5 | 0.016 | 4.3 | |
| | %CV | | 10.7 | 120.2 | 10.2 | |
| 4-Carboxybenzaldehyde - Lab 3 (2) | 1 | 100% | 45.3 | 0.030 | 45.8 | Moderate |
| | 2 | | 37.3 | 0.041 | 37.9 | |
| | 3 | | 41.3 | 0.035 | 41.8 | |
| | mean | | 41.3 | 0.035 | 41.8 | |
| | SD | | 4.0 | 0.006 | 4.0 | |
| | %CV | | 9.7 | 15.6 | 9.4 | |
| Methyl ethyl ketone - Lab 1 (1) | 1 | 100% | 64.3 | 2.734 | 105.3 | Severe |
| | 2 | | 59.3 | 2.640 | 98.9 | |
| | 3 | | 59.3 | 4.174 | 121.9 | |
| | mean | | 61.0 | 3.183 | 108.7 | |
| | SD | | 2.9 | 0.860 | 11.9 | |
| | %CV | | 4.7 | 27.0 | 10.9 | |
| Methyl ethyl ketone - Lab 1 (2) | 1 | 100% | 54.3 | 1.909 | 82.9 | Severe |
| | 2 | | 65.3 | 2.155 | 97.6 | |
| | 3 | | 66.3 | 3.880 | 124.5 | |
| | mean | | 62.0 | 2.648 | 101.7 | |
| | SD | | 6.7 | 1.074 | 21.1 | |
| | %CV | | 10.7 | 40.6 | 20.8 | |
| Methyl ethyl ketone - Lab 2 (1) | 1 | 100% | 45.3 | 1.658 | 70.2 | Severe |
| | 2 | | 54.3 | 2.408 | 90.4 | |
| | 3 | | 43.3 | 1.052 | 59.1 | |
| | mean | | 47.6 | 1.706 | 73.2 | |
| | SD | | 5.9 | 0.679 | 15.9 | |
| | %CV | | 12.3 | 39.8 | 21.7 | |
| Methyl ethyl ketone - Lab 2 (2) | 1 | 100% | 46.3 | 0.989 | 61.1 | Severe |
| | 2 | | 50.3 | 1.386 | 71.1 | |
| | 3 | | 47.3 | 1.584 | 71.1 | |
| | mean | | 48.0 | 1.320 | 67.8 | |
| | SD | | 2.1 | 0.303 | 5.8 | |
| | %CV | | 4.3 | 23.0 | 8.5 | |
| Methyl ethyl ketone - Lab 3 (1) | 1 | 100% | 55.0 | 1.277 | 74.2 | Severe |
| | 2 | | 51.0 | 1.218 | 69.3 | |
| | 3 | | 61.0 | 0.420 | 67.3 | |
| | mean | | 55.7 | 0.972 | 70.3 | |
| | SD | | 5.0 | 0.479 | 3.6 | |
| | %CV | | 9.0 | 49.3 | 5.1 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| Methyl ethyl ketone - Lab 3 (2) | 1 | 100% | 55.7 | 1.227 | 74.1 | Severe |
| | 2 | | 52.7 | 0.947 | 66.9 | |
| | 3 | | 54.7 | 1.660 | 79.6 | |
| | mean | | 54.4 | 1.278 | 73.5 | |
| | SD | | 1.5 | 0.359 | 6.4 | |
| | %CV | | 2.8 | 28.1 | 8.7 | |
| TritonX100 - Lab 1 (1) | 1 | 5% | 1.7 | 0.388 | 7.5 | Mild |
| | 2 | | 0.7 | 0.158 | 3.1 | |
| | 3 | | 1.7 | 0.347 | 6.9 | |
| | mean | | 1.4 | 0.298 | 5.8 | |
| | SD | | 0.6 | 0.123 | 2.4 | |
| | %CV | | 42.2 | 41.2 | 40.9 | |
| TritonX100 - Lab 1 (2) | 1 | 5% | 0.7 | 0.162 | 3.1 | Mild |
| | 2 | | -0.3 | 0.191 | 2.6 | |
| | 3 | | -0.3 | 0.324 | 4.6 | |
| | mean | | 0.0 | 0.226 | 3.4 | |
| | SD | | 0.6 | 0.086 | 1.0 | |
| | %CV | | 1732.1 | 38.3 | 30.3 | |
| TritonX100 - Lab 2 (1) | 1 | 5% | 3.3 | 0.025 | 3.7 | Mild |
| | 2 | | 4.3 | 0.026 | 4.7 | |
| | 3 | | 2.3 | 0.019 | 2.6 | |
| | mean | | 3.3 | 0.023 | 3.7 | |
| | SD | | 1.0 | 0.004 | 1.1 | |
| | %CV | | 30.3 | 16.2 | 28.6 | |
| TritonX100 - Lab 2 (2) | 1 | 5% | 0.3 | 0.040 | 0.9 | Mild |
| | 2 | | 2.3 | 0.036 | 2.8 | |
| | 3 | | 1.3 | 0.029 | 1.7 | |
| | mean | | 1.3 | 0.035 | 1.8 | |
| | SD | | 1.0 | 0.006 | 1.0 | |
| | %CV | | 76.9 | 15.9 | 53.0 | |
| TritonX100 - Lab 3 (1) | 1 | 5% | 3.7 | 0.033 | 4.2 | Mild |
| | 2 | | 1.7 | 0.015 | 1.9 | |
| | 3 | | 2.7 | 0.021 | 3.0 | |
| | mean | | 2.7 | 0.023 | 3.0 | |
| | SD | | 1.0 | 0.009 | 1.2 | |
| | %CV | | 37.0 | 39.8 | 37.9 | |
| TritonX100 - Lab 3 (2) | 1 | 5% | 0.7 | 0.035 | 1.2 | Mild |
| | 2 | | 1.7 | 0.052 | 2.5 | |
| | 3 | | 2.7 | 0.027 | 2.1 | |
| | mean | | 1.7 | 0.038 | 1.9 | |
| | SD | | 1.0 | 0.013 | 0.7 | |
| | %CV | | 58.8 | 33.6 | 34.4 | |
| Propyl-4-hydroxybenzoate - Lab 1 (1) | 1 | 100% | 4.0 | 0.006 | 4.1 | Mild |
| | 2 | | 4.0 | 0.007 | 4.1 | |
| | 3 | | 7.0 | 0.027 | 7.4 | |
| | mean | | 5.0 | 0.013 | 5.2 | |
| | SD | | 1.7 | 0.012 | 1.9 | |
| | %CV | | 34.6 | 88.8 | 36.6 | |
| Propyl-4-hydroxybenzoate - Lab 1 (2) | 1 | 100% | 4.7 | 0.006 | 4.8 | Mild |
| | 2 | | 3.7 | 0.034 | 4.2 | |
| | 3 | | 1.7 | 0.009 | 1.8 | |
| | mean | | 3.4 | 0.016 | 3.6 | |
| | SD | | 1.5 | 0.015 | 1.6 | |
| | %CV | | 45.4 | 94.1 | 44.1 | |
| Propyl-4-hydroxybenzoate - Lab 2 (1) | 1 | 100% | 7.7 | 0.001 | 7.7 | Mild |
| | 2 | | 11.7 | 0.018 | 12.0 | |
| | 3 | | 12.7 | 0.084 | 14.0 | |
| | mean | | 10.7 | 0.034 | 11.2 | |
| | SD | | 2.6 | 0.044 | 3.2 | |
| | %CV | | 24.7 | 127.7 | 28.7 | |
| Propyl-4-hydroxybenzoate - Lab 2 (2) | 1 | 100% | 7.7 | 0.016 | 7.9 | Mild |
| | 2 | | 6.7 | 0.051 | 7.5 | |
| | 3 | | 6.7 | 0.001 | 6.7 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|---|------------------|---------------|---------|--------------|------------------------------------|------------|
| | mean | | 7.0 | 0.023 | 7.4 | |
| | SD | | 0.6 | 0.026 | 0.6 | |
| | %CV | | 8.2 | 113.2 | 8.3 | |
| Propyl-4-hydroxybenzoate - Lab 3 (1) | 1 | 100% | 5.3 | 0.034 | 5.8 | |
| | 2 | | 4.3 | 0.037 | 4.9 | Mild |
| | 3 | | 12.3 | 0.012 | 12.5 | |
| | mean | | 7.3 | 0.028 | 7.7 | |
| | SD | | 4.4 | 0.014 | 4.2 | |
| | %CV | | 59.7 | 49.3 | 53.7 | |
| Propyl-4-hydroxybenzoate - Lab 3 (2) | 1 | 100% | 5.3 | 0.099 | 6.8 | |
| | 2 | | 5.3 | 0.008 | 5.4 | Mild |
| | 3 | | 6.3 | 0.014 | 6.5 | |
| | mean | | 5.6 | 0.040 | 6.2 | |
| | SD | | 0.6 | 0.051 | 0.7 | |
| | %CV | | 10.2 | 126.2 | 11.8 | |
| Tween20 - Lab 1 (1) | 1 | 100% | 0.7 | 0.001 | 0.7 | |
| | 2 | | -0.3 | -0.001 | -0.3 | Mild |
| | 3 | | 0.7 | 0.003 | 0.7 | |
| | mean | | 0.4 | 0.001 | 0.4 | |
| | SD | | 0.6 | 0.002 | 0.6 | |
| | %CV | | 157.5 | 200.0 | 157.5 | |
| Tween20 - Lab 1 (2) | 1 | 100% | 0.7 | 0.003 | 0.7 | |
| | 2 | | -0.3 | 0.010 | -0.2 | Mild |
| | 3 | | 0.7 | -0.005 | 0.6 | |
| | mean | | 0.4 | 0.003 | 0.4 | |
| | SD | | 0.6 | 0.008 | 0.5 | |
| | %CV | | 157.5 | 281.5 | 134.5 | |
| Tween20 - Lab 2 (1) | 1 | 100% | 0.3 | 0.016 | 0.5 | |
| | 2 | | 0.3 | -0.005 | 0.2 | Mild |
| | 3 | | 0.3 | -0.003 | 0.3 | |
| | mean | | 0.3 | 0.003 | 0.3 | |
| | SD | | 0.0 | 0.012 | 0.2 | |
| | %CV | | 0.0 | 434.6 | 45.8 | |
| Tween20 - Lab 2 (2) | 1 | 100% | 1.3 | 0.000 | 1.3 | |
| | 2 | | 0.0 | 0.000 | 0.0 | Mild |
| | 3 | | 0.3 | 0.015 | 0.5 | |
| | mean | | 0.5 | 0.005 | 0.6 | |
| | SD | | 0.7 | 0.009 | 0.7 | |
| | %CV | | 127.6 | 173.2 | 109.3 | |
| Tween20 - Lab 3 (1) | 1 | 100% | 0.0 | 0.042 | 0.6 | |
| | 2 | | 0.0 | 0.007 | 0.1 | Mild |
| | 3 | | 0.0 | 0.017 | 0.3 | |
| | mean | | 0.0 | 0.022 | 0.3 | |
| | SD | | 0.0 | 0.018 | 0.3 | |
| | %CV | | 0.0 | 81.9 | 75.5 | |
| Tween20 - Lab 3 (2) | 1 | 100% | 0.0 | 0.000 | 0.0 | |
| | 2 | | 0.0 | 0.000 | 0.0 | Mild |
| | 3 | | 1.0 | 0.026 | 1.4 | |
| | mean | | 0.3 | 0.009 | 0.5 | |
| | SD | | 0.6 | 0.015 | 0.8 | |
| | %CV | | 173.2 | 173.2 | 173.2 | |
| Glycerol - Lab 1 (1) | 1 | 100% | 0.3 | 0.019 | 0.6 | |
| | 2 | | 0.3 | 0.006 | 0.4 | Mild |
| | 3 | | 1.3 | 0.010 | 1.5 | |
| | mean | | 0.6 | 0.012 | 0.8 | |
| | SD | | 0.6 | 0.007 | 0.6 | |
| | %CV | | 91.2 | 57.1 | 70.3 | |
| Glycerol - Lab 1 (2) | 1 | 100% | 1.0 | 0.015 | 1.2 | |
| | 2 | | 1.0 | 0.011 | 1.2 | Mild |
| | 3 | | 0.0 | -0.002 | 1.0 | |
| | mean | | 0.7 | 0.008 | 1.1 | |
| | SD | | 0.6 | 0.009 | 0.1 | |
| | %CV | | 86.6 | 111.1 | 10.2 | |

**Intralaboratory CV Analysis of BCOP -
Southee 1998**

| Substance - Lab No. (Experiment No.) | Cornea number | Concentration | Opacity | Permeability | <i>In Vitro</i> Score ¹ | Prediction |
|--|------------------|---------------|---------|--------------|------------------------------------|------------|
| Glycerol - Lab 2 (1) | 1 | 100% | 0.0 | 0.000 | 0.0 | Mild |
| | 2 | | 1.3 | 0.000 | 1.2 | |
| | 3 | | 0.3 | 0.000 | 0.3 | |
| | mean | | 0.5 | 0.000 | 0.5 | |
| | SD | | 0.7 | 0.000 | 0.6 | |
| | %CV | | 127.6 | 0.0 | 124.9 | |
| Glycerol - Lab 2 (2) | 1 | 100% | 1.3 | -0.006 | 1.2 | Mild |
| | 2 | | 0.3 | -0.004 | 0.2 | |
| | 3 | | 0.3 | -0.006 | 0.2 | |
| | mean | | 0.6 | -0.005 | 0.5 | |
| | SD | | 0.6 | 0.001 | 0.6 | |
| | %CV | | 91.2 | -21.7 | 108.3 | |
| Glycerol - Lab 3 (1) | 1 | 100% | 0.7 | -0.007 | 0.6 | Mild |
| | 2 | | 0.7 | 0.002 | 0.7 | |
| | 3 | | 1.7 | -0.004 | 1.6 | |
| | mean | | 1.0 | -0.003 | 1.0 | |
| | SD | | 0.6 | 0.005 | 0.6 | |
| | %CV | | 55.9 | -152.8 | 57.0 | |
| Glycerol - Lab 3 (2) | 1 | 100% | 0.7 | -0.001 | 0.7 | Mild |
| | 2 | | 0.7 | 0.002 | 0.7 | |
| | 3 | | 0.7 | 0.020 | 1.0 | |
| | mean | | 0.7 | 0.007 | 0.8 | |
| | SD | | 0.0 | 0.011 | 0.2 | |
| | %CV | | 0.0 | 162.3 | 21.7 | |
| Abbreviations: CV = Coefficient of variation; SD =Standard deviation. | | | | | | |
| ¹ <i>In Vitro</i> Score = Opacity + (15 x permeability value) | | | | | | |

Appendix E2

BCOP Data from Dr. Joseph Sina

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**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|--------------------------------|-------------------------------|------------------------------------|---------|--------------|------------------------------------|------------|
| Dimethyl ethylimidazo pyridine | 1 | 10%/32 | 11 | 0.044 | 11.66 | |
| | 2 | | -3 | 0.063 | -2.06 | |
| | 3 | | 5 | 0.068 | 6.02 | |
| | 4 | | -3 | 0.055 | -2.18 | |
| | mean | | 3 | 0.058 | 3.36 | Mild |
| | SD | | 7 | 0.010 | 6.73 | |
| | %CV | | 272 | 18.2 | 200.2 | |
| Sodium bitartrate | 1 | 20%/RT | 16 | 0.002 | 16.03 | |
| | 2 | | 8 | 0.008 | 8.12 | |
| | 3 | | 6 | 0.020 | 6.30 | |
| | 4 | | 17 | 0.000 | 17.00 | |
| | mean | | 12 | 0.008 | 11.86 | Mild |
| | SD | | 6 | 0.009 | 5.44 | |
| | %CV | | 47 | 120.0 | 45.8 | |
| Quinaldine (2-methylquinoline) | 1 | 100%/32 | 17 | 0.211 | 20.17 | |
| | 2 | | 23 | 0.250 | 26.75 | |
| | 3 | | 22 | 0.507 | 29.61 | |
| | mean | | 21 | 0.323 | 25.51 | Moderate |
| | SD | | 3 | 0.161 | 4.84 | |
| | %CV | | 16 | 49.8 | 19.0 | |
| | N-Acetyl- <i>p</i> -anisidine | 1 | 20%/RT | 7 | 0.014 | 7.21 |
| 2 | | | 11 | 0.013 | 11.20 | |
| 3 | | | -3 | 0.005 | -2.93 | |
| 4 | | | -2 | 0.000 | -2.00 | |
| mean | | | 3 | 0.008 | 3.37 | Mild |
| SD | | | 7 | 0.007 | 6.94 | |
| %CV | | | 211 | 83.5 | 205.9 | |
| 1,3-Benzenedicarboxaldehyde | 1 | 20%/32 | 11 | 0.019 | 11.29 | |
| | 2 | | 1 | 0.006 | 1.09 | |
| | 3 | | 10 | 0.091 | 11.37 | |
| | 4 | | 9 | 0.051 | 9.77 | |
| | mean | | 8 | 0.042 | 8.38 | Mild |
| | SD | | 5 | 0.038 | 4.91 | |
| | %CV | | 59 | 90.8 | 58.7 | |
| | 1 | 20%/RT | 8 | 0.018 | 8.27 | |
| | 2 | | 13 | 0.058 | 13.87 | |
| | 3 | | 3 | 0.008 | 3.12 | |
| | 4 | | 8 | 0.035 | 8.53 | |
| | mean | | 8 | 0.030 | 8.45 | Mild |
| | SD | | 4 | 0.022 | 4.39 | |
| | %CV | | 51 | 73.6 | 52.0 | |
| 1 | 20%/32 | 24 | 0.217 | 27.26 | | |
| 2 | | 31 | 0.037 | 31.56 | | |
| 3 | | 23 | 0.255 | 26.83 | | |
| 4 | | 31 | 0.162 | 33.43 | | |
| mean | | 27 | 0.168 | 29.77 | Moderate | |
| SD | | 4 | 0.095 | 3.24 | | |
| %CV | | 16 | 56.7 | 10.9 | | |
| Triethylammonium iodide | 1 | 20%/RT | 21 | 0.089 | 22.34 | |
| | 2 | | 27 | 0.042 | 27.63 | |
| | 3 | | 26 | 0.049 | 26.74 | |
| | 4 | | 18 | 0.076 | 19.14 | |
| | mean | | 23 | 0.064 | 23.96 | Mild |
| | SD | | 4 | 0.022 | 3.96 | |
| | %CV | | 18 | 34.7 | 16.5 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|--|---------------|------------------------------------|---------|--------------|------------------------------------|------------|
| Dicyclohexylcarbodiimide | 1 | 20%/RT | 23 | 0.010 | 23.15 | |
| | 2 | | 22 | 0.032 | 22.48 | |
| | 3 | | 16 | 0.037 | 16.56 | |
| | 4 | | 18 | 0.034 | 18.51 | |
| | mean | | 20 | 0.028 | 20.17 | Mild |
| | SD | | 3 | 0.012 | 3.16 | |
| | %CV | | 17 | 43.7 | 15.7 | |
| L-Proline, N-carboxyanhydride | 1 | 20%/RT | 8 | 0.007 | 8.11 | |
| | 2 | | 12 | 0.008 | 12.12 | |
| | 3 | | -5 | 0.009 | -4.87 | |
| | 4 | | 5 | 0.014 | 5.21 | |
| | mean | | 5 | 0.010 | 5.14 | Mild |
| | SD | | 7 | 0.003 | 7.25 | |
| | %CV | | 145 | 32.7 | 141.0 | |
| Substituted propanediol | 1 | 20%/RT | 50 | 1.538 | 73.07 | |
| | 2 | | 52 | 1.552 | 75.28 | |
| | 3 | | 48 | 2.428 | 84.42 | |
| | 4 | | 46 | 1.625 | 70.38 | |
| | mean | | 49 | 1.786 | 75.79 | Severe |
| | SD | | 3 | 0.430 | 6.10 | |
| | %CV | | 5 | 24.1 | 8.0 | |
| 3-Trichlorovinylaniline HCL | 1 | 20%/32 | 398 | 0.001 | 398.02 | |
| | 2 | | 404 | 0.001 | 404.02 | |
| | 3 | | 406 | 0.000 | 406.00 | |
| | 4 | | 408 | 0.002 | 408.03 | |
| | mean | | 404 | 0.001 | 404.02 | Severe |
| | SD | | 4 | 0.001 | 4.32 | |
| | %CV | | 1 | 81.6 | 1.1 | |
| Methyl chlorobenzyl butylthio propyl indolyl dimethylpropanoate | 1 | 20%/RT | 15 | 0.005 | 15.08 | |
| | 2 | | 18 | 0.002 | 18.03 | |
| | 3 | | 8 | 0.002 | 8.03 | |
| | 4 | | 5 | 0.001 | 5.02 | |
| | mean | | 12 | 0.003 | 11.54 | Mild |
| | SD | | 6 | 0.002 | 6.04 | |
| | %CV | | 52 | 69.3 | 52.4 | |
| Nitropyridinone | 1 | 20%/RT | 11 | 0.043 | 11.65 | |
| | 2 | | 12 | 0.035 | 12.53 | |
| | 3 | | 5 | 0.025 | 5.38 | |
| | 4 | | 6 | 0.002 | 6.03 | |
| | mean | | 9 | 0.026 | 8.89 | Mild |
| | SD | | 4 | 0.018 | 3.71 | |
| | %CV | | 41 | 67.7 | 41.7 | |
| | 1 | 20%/32 | -5 | 0.036 | -4.46 | |
| | 2 | | 2 | 0.027 | 2.41 | |
| | 3 | | -9 | 0.023 | -8.66 | |
| | 4 | | -4 | 0.003 | -3.96 | |
| | mean | | -4 | 0.022 | -3.67 | Mild |
| | SD | | 5 | 0.014 | 4.56 | |
| %CV | | -114 | 62.6 | -124.5 | | |
| alpha-Naphthyl-pyranone | 1 | 20%/RT | 1 | 0.026 | 1.39 | |
| | 2 | | 12 | 0.020 | 12.30 | |
| | 3 | | -1 | 0.013 | -0.81 | |
| | 4 | | 11 | 0.018 | 11.27 | |
| | mean | | 6 | 0.019 | 6.04 | Mild |
| | SD | | 7 | 0.005 | 6.71 | |
| | %CV | | 117 | 27.9 | 111.1 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|---|---------------|------------------------------------|---------|--------------|------------------------------------|------------|
| Cyclic peptide | 1 | 20%/32 | 5 | 0.087 | 6.31 | |
| | 2 | | 2 | 0.086 | 3.29 | |
| | 3 | | -5 | 0.057 | -4.15 | |
| | 4 | | 5 | 0.025 | 5.38 | |
| | mean | | 2 | 0.064 | 2.71 | Mild |
| | SD | | 5 | 0.029 | 4.74 | |
| | %CV | | 270 | 46.0 | 175.1 | |
| Chloroquinoliny methyl ester carboxylic acid | 1 | 20%/RT | 38 | 0.246 | 41.69 | |
| | 2 | | 39 | 0.325 | 43.88 | |
| | 3 | | 50 | 0.378 | 55.67 | |
| | 4 | | 25 | 0.409 | 31.14 | |
| | mean | | 38 | 0.340 | 43.09 | Moderate |
| | SD | | 10 | 0.071 | 10.06 | |
| | %CV | | 27 | 21.0 | 23.4 | |
| 7-Chloroquinaldine | 1 | 20%/RT | 4 | 0.002 | 4.03 | |
| | 2 | | 8 | 0.000 | 8.00 | |
| | 3 | | 3 | 0.000 | 3.00 | |
| | 4 | | 6 | 0.000 | 6.00 | |
| | mean | | 5 | 0.001 | 5.26 | Mild |
| | SD | | 2 | 0.001 | 2.21 | |
| | %CV | | 42 | 200.0 | 42.1 | |
| | 1 | 20%/32 | 7 | 0.044 | 7.66 | |
| | 2 | | 14 | 0.029 | 14.44 | |
| | 3 | | 8 | 0.057 | 8.86 | |
| | 4 | | 11 | 0.043 | 11.65 | |
| | mean | | 10 | 0.043 | 10.65 | Mild |
| | SD | | 3 | 0.011 | 3.03 | |
| | %CV | | 32 | 26.5 | 28.4 | |
| alpha-Pyranone, 7,7-dioxide | 1 | 20%/RT | 0 | 0.045 | 0.68 | |
| | 2 | | 0 | 0.072 | 1.08 | |
| | 3 | | 6 | 0.136 | 8.04 | |
| | 4 | | 2 | 0.090 | 3.35 | |
| | mean | | 2 | 0.086 | 3.29 | Mild |
| | SD | | 3 | 0.038 | 3.38 | |
| | %CV | | 141 | 44.6 | 102.9 | |
| Methyl boronic acid | 1 | 20%/RT | 10 | 0.144 | 12.16 | |
| | 2 | | 21 | 0.143 | 23.15 | |
| | 3 | | 28 | 0.164 | 30.46 | |
| | 4 | | 19 | 0.114 | 20.71 | |
| | mean | | 20 | 0.141 | 21.62 | Mild |
| | SD | | 7 | 0.021 | 7.55 | |
| | %CV | | 38 | 14.6 | 34.9 | |
| | 1 | 20%/32 | 20 | 0.305 | 24.58 | |
| | 2 | | 14 | 0.164 | 16.46 | |
| | 3 | | 21 | 0.383 | 26.75 | |
| | 4 | | 28 | 0.303 | 32.55 | |
| | mean | | 21 | 0.289 | 25.08 | Moderate |
| | SD | | 6 | 0.091 | 6.66 | |
| | %CV | | 28 | 31.6 | 26.6 | |
| 1,1-Diphenyl prolinol (sulfate salt) | 1 | 20%/RT | 11 | 1.730 | 36.95 | |
| | 2 | | 17 | 0.790 | 28.85 | |
| | 3 | | 7 | 1.144 | 24.16 | |
| | 4 | | 10 | 2.405 | 46.08 | |
| | mean | | 11 | 1.517 | 34.01 | Severe |
| | SD | | 4 | 0.707 | 9.62 | |
| | %CV | | 37 | 46.6 | 28.3 | |
| 4-(2-Quinolylmethoxy)aniline | 1 | 20%/32 | 23 | 0.000 | 23.00 | |
| | 2 | | -3 | 0.000 | -3.00 | |
| | 3 | | -6 | 0.001 | -5.99 | |
| | 4 | | -3 | 0.019 | -2.72 | |
| | mean | | 3 | 0.005 | 2.83 | Mild |
| | SD | | 14 | 0.009 | 13.53 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|--|---------------------------|------------------------------------|---------|--------------|------------------------------------|------------|
| | %CV | | 494 | 186.9 | 479.0 | |
| Sulfone amine | 1 | 20%/RT | 11 | 0.018 | 11.27 | |
| | 2 | | 14 | 0.008 | 14.12 | |
| | 3 | | 8 | 0.015 | 8.23 | |
| | 4 | | 24 | 0.004 | 24.06 | |
| | mean | | 14 | 0.011 | 14.42 | Mild |
| | SD | | 7 | 0.006 | 6.86 | |
| | %CV | | 49 | 56.9 | 47.6 | |
| <i>p</i> -Nitrobenzyl 2-diazo acetoacetate | 1 | 20%/RT | 0 | 0.028 | 0.42 | |
| | 2 | | 15 | 0.012 | 15.18 | |
| | 3 | | 24 | 0.016 | 24.24 | |
| | 4 | | 19 | 0.039 | 19.59 | |
| | mean | | 15 | 0.024 | 14.86 | Mild |
| | SD | | 10 | 0.012 | 10.31 | |
| | %CV | | 71 | 51.5 | 69.4 | |
| alpha-Pyranol, 7,7-dioxide | 1 | 20%/RT | 12 | 0.035 | 12.53 | |
| | 2 | | 11 | 0.033 | 11.50 | |
| | 3 | | 7 | 0.025 | 7.38 | |
| | 4 | | -1 | 0.014 | -0.79 | |
| | mean | | 7 | 0.027 | 7.65 | Mild |
| | SD | | 6 | 0.010 | 6.05 | |
| | %CV | | 82 | 35.6 | 79.1 | |
| | 1 | 20%/32 | 20 | 0.156 | 22.34 | |
| | 2 | | 29 | 0.228 | 32.42 | |
| | 3 | | 38 | 0.115 | 39.73 | |
| | mean | | 29 | 0.166 | 31.50 | Mild |
| | SD | | 9 | 0.057 | 8.73 | |
| | %CV | | 31 | 34.4 | 27.7 | |
| | Triethylamine hydroiodide | 1 | 20%/RT | 29 | 0.021 | 29.32 |
| 2 | | | 32 | 0.059 | 32.89 | |
| 3 | | | 33 | 0.064 | 33.96 | |
| 4 | | | 29 | 0.038 | 29.57 | |
| mean | | | 31 | 0.046 | 31.43 | Moderate |
| SD | | | 2 | 0.020 | 2.34 | |
| %CV | | | 7 | 43.6 | 7.4 | |
| Substituted cephalosporanic acid | 1 | 20%/RT | 11 | 0.006 | 11.09 | |
| | 2 | | 17 | 0.056 | 17.84 | |
| | 3 | | 10 | 0.017 | 10.26 | |
| | 4 | | 12 | 0.001 | 12.02 | |
| | mean | | 13 | 0.020 | 12.80 | Mild |
| | SD | | 3 | 0.025 | 3.44 | |
| | %CV | | 25 | 124.6 | 26.8 | |
| | 1 | 20%/32 | -3 | 0.006 | -2.91 | |
| | 2 | | -6 | 0.000 | -6.00 | |
| | 3 | | -6 | 0.010 | -5.85 | |
| | 4 | | -3 | 0.012 | -2.82 | |
| | mean | | -5 | 0.007 | -4.40 | Mild |
| | SD | | 2 | 0.005 | 1.77 | |
| | %CV | | -38 | 75.6 | -40.2 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|---|---------------|------------------------------------|---------|--------------|------------------------------------|------------|
| 4-Benzoxycarbonicamino-2-hydroxy-butanoic acid | 1 | 20%/RT | 392 | 0.001 | 392.02 | |
| | 2 | | 395 | 0.006 | 395.09 | |
| | 3 | | 397 | 0.008 | 397.12 | |
| | 4 | | 399 | 0.000 | 399.00 | |
| | mean | | 396 | 0.004 | 395.81 | Severe |
| | SD | | 3 | 0.004 | 2.99 | |
| | %CV | | 1 | 103.0 | 0.8 | |
| N-Sulfonamido hydroxyacetophenone | 1 | 20%/RT | 4 | 0.006 | 4.09 | |
| | 2 | | 3 | 0.040 | 3.60 | |
| | 3 | | 12 | 0.026 | 12.39 | |
| | 4 | | -10 | 0.002 | -9.97 | |
| | mean | | 2 | 0.019 | 2.53 | Mild |
| | SD | | 9 | 0.018 | 9.26 | |
| | %CV | | 405 | 96.0 | 366.2 | |
| | 1 | 20%/32 | -8 | 0.021 | -7.69 | |
| | 2 | | -12 | 0.012 | -11.82 | |
| | 3 | | -8 | 0.015 | -7.78 | |
| | 4 | | 4 | 0.001 | 4.02 | |
| | mean | | -6 | 0.012 | -5.82 | Mild |
| | SD | | 7 | 0.008 | 6.83 | |
| | %CV | | -115 | 68.4 | -117.5 | |
| Cyclic peptide | 1 | 20%/32 | 7 | 0.011 | 7.17 | |
| | 2 | | 4 | 0.007 | 4.11 | |
| | 3 | | 10 | 0.013 | 10.20 | |
| | 4 | | 10 | 0.017 | 10.26 | |
| | mean | | 8 | 0.012 | 7.93 | Mild |
| | SD | | 3 | 0.004 | 2.93 | |
| | %CV | | 37 | 34.7 | 36.9 | |
| 4-Bromo-2,5-dimethylphenol | 1 | 20%/32 | 54 | 4.006 | 114.09 | |
| | 2 | | 54 | 4.708 | 124.62 | |
| | 3 | | 61 | 5.000 | 136.00 | |
| | 4 | | 76 | 4.914 | 149.71 | |
| | mean | | 61 | 4.657 | 131.11 | Severe |
| | SD | | 10 | 0.451 | 15.29 | |
| | %CV | | 17 | 9.7 | 11.7 | |
| 2-Amino-3,6-dimethylphenol, hydrobromide salt | 1 | 20%/32 | 162 | 0.252 | 165.78 | |
| | 2 | | 141 | 0.228 | 144.42 | |
| | 3 | | 138 | 0.294 | 142.41 | |
| | 4 | | 145 | 0.272 | 149.08 | |
| | mean | | 147 | 0.262 | 150.42 | Severe |
| | SD | | 11 | 0.028 | 10.61 | |
| | %CV | | 7 | 10.8 | 7.1 | |
| Mixture of 2-chloromethyl-4,7-dimethylbenzoxazole and 2-bromomethyl dimethylbenzoxazole | 1 | 20%/32 | 14 | 0.001 | 14.02 | |
| | 2 | | 17 | 0.000 | 17.00 | |
| | 3 | | 19 | 0.000 | 19.00 | |
| | 4 | | 22 | 0.016 | 22.24 | |
| | mean | | 18 | 0.004 | 18.06 | Mild |
| | SD | | 3 | 0.008 | 3.46 | |
| | %CV | | 19 | 184.6 | 19.1 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|--|---------------------------------|------------------------------------|---------|--------------|------------------------------------|------------|
| R-Hydroxy ester of benzoic acid compound | 1 | 20%/32 | -14 | 0.050 | -13.25 | |
| | 2 | | -10 | 0.009 | -9.87 | |
| | 3 | | -12 | 0.020 | -11.70 | |
| | 4 | | -14 | 0.022 | -13.67 | |
| | mean | | -13 | 0.025 | -12.12 | Mild |
| | SD | | 2 | 0.017 | 1.73 | |
| | %CV | | -15 | 69.2 | -14.2 | |
| <i>t</i> -Butyl-3-oxo-6-methoxyhexanoate | 1 | 100%/32 | 7 | 0.008 | 7.12 | |
| | 2 | | 17 | 0.000 | 17.00 | |
| | 3 | | 19 | 0.191 | 21.87 | |
| | mean | | 14 | 0.066 | 15.33 | Mild |
| | SD | | 6 | 0.108 | 7.51 | |
| | %CV | | 45 | 162.9 | 49.0 | |
| | Methyl 3-oxo-6-methoxyhexanoate | 1 | 100%/32 | 44 | 1.795 | 70.93 |
| 2 | | | 38 | 1.935 | 67.03 | |
| 3 | | | 34 | 0.824 | 46.36 | |
| 4 | | | 34 | 0.863 | 46.95 | |
| mean | | | 38 | 1.354 | 57.81 | Severe |
| SD | | | 5 | 0.593 | 12.99 | |
| %CV | | | 13 | 43.8 | 22.5 | |
| +-Butyl-3R-hydroxy-6-methoxyhepanoate | 1 | 100%/32 | 12 | 1.165 | 29.48 | |
| | 2 | | 8 | 1.160 | 25.40 | |
| | 3 | | 3 | 0.734 | 14.01 | |
| | 4 | | 13 | 0.615 | 22.23 | |
| | mean | | 9 | 0.919 | 22.78 | Mild |
| | SD | | 5 | 0.286 | 6.56 | |
| | %CV | | 51 | 31.1 | 28.8 | |
| Aglycone; natural product | 1 | 20%/32 | 14 | 0.005 | 14.08 | |
| | 2 | | 3 | 0.016 | 3.24 | |
| | 3 | | 11 | 0.000 | 11.00 | |
| | 4 | | 17 | 0.005 | 17.08 | |
| | mean | | 11 | 0.007 | 11.35 | Mild |
| | SD | | 6 | 0.007 | 5.95 | |
| | %CV | | 54 | 104.0 | 52.4 | |
| Carbic anhydride | 1 | 20%/32 | 192 | 0.000 | 192.00 | |
| | 2 | | 185 | 0.000 | 185.00 | |
| | 3 | | 209 | 0.000 | 209.00 | |
| | 4 | | 221 | 0.000 | 221.00 | |
| | mean | | 202 | 0.000 | 201.75 | Severe |
| | SD | | 16 | 0.000 | 16.32 | |
| | %CV | | 8 | 0.0 | 8.1 | |
| 3-Bromo-7-methyl-9-flurenone | 1 | 20%/32 | -2 | 0.019 | -1.72 | |
| | 2 | | 2 | 0.011 | 2.17 | |
| | 3 | | -6 | 0.009 | -5.87 | |
| | 4 | | -5 | 0.007 | -4.90 | |
| | mean | | -3 | 0.012 | -2.58 | Mild |
| | SD | | 4 | 0.005 | 3.62 | |
| | %CV | | -131 | 45.7 | -140.6 | |
| <i>tert</i> -Butyl-6-methoxy-3-S-(2-thiophenethio) hexanoate | 1 | 100%/32 | 5 | 0.000 | 5.00 | |
| | 2 | | -3 | 0.000 | -3.00 | |
| | 3 | | 2 | 0.000 | 2.00 | |
| | 4 | | 2 | 0.000 | 2.00 | |
| | mean | | 2 | 0.000 | 1.50 | Mild |
| | SD | | 3 | 0.000 | 3.32 | |
| | %CV | | 221 | 0.0 | 221.1 | |
| Cyanopyridinone | 1 | 20%/32 | -5 | 0.016 | -4.76 | |
| | 2 | | -8 | 0.018 | -7.73 | |
| | 3 | | -1 | 0.007 | -0.90 | |
| | 4 | | -4 | 0.003 | -3.96 | |
| | mean | | -5 | 0.011 | -4.34 | Mild |
| | SD | | 3 | 0.007 | 2.81 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Joseph Sina**

| Substance | Cornea number | Concentration/ Incubation temp. | Opacity | Permeability | <i>In vitro</i> score ¹ | Prediction |
|---|---------------|------------------------------------|---------|--------------|------------------------------------|------------|
| | %CV | | -64 | 65.1 | -64.8 | |
| S-Hydroxy ester of benzoic acid compound | 1 | 20%/32 | 12 | 0.021 | 12.32 | |
| | 2 | | 18 | 0.000 | 18.00 | |
| | 3 | | 20 | 0.000 | 20.00 | |
| | 4 | | 33 | 0.000 | 33.00 | |
| | mean | | 21 | 0.005 | 20.83 | Mild |
| | SD | | 9 | 0.011 | 8.74 | |
| | %CV | | 43 | 200.0 | 42.0 | |
| Cyano methylpyridine | 1 | 20%/32 | 8 | 0.037 | 8.56 | |
| | 2 | | 17 | 0.025 | 17.38 | |
| | 3 | | 21 | 0.013 | 21.20 | |
| | 4 | | 15 | 0.000 | 15.00 | |
| | mean | | 15 | 0.019 | 15.53 | Mild |
| | SD | | 5 | 0.016 | 5.30 | |
| | %CV | | 36 | 84.7 | 34.2 | |
| Carbonitrile | 1 | 20%/32 | 21 | 0.180 | 23.70 | |
| | 2 | | 22 | 0.200 | 25.00 | |
| | 3 | | 20 | 0.241 | 23.62 | |
| | 4 | | 12 | 0.187 | 14.81 | |
| | mean | | 19 | 0.202 | 21.78 | |
| | SD | | 5 | 0.027 | 4.69 | |
| | %CV | | 24 | 13.5 | 21.5 | Mild |
| Abbreviations: CV = Coefficient of variation; RT = Room temperature; SD = Standard deviation. | | | | | | |
| ¹ <i>In Vitro</i> Score = Opacity + (15 x permeability value) | | | | | | |

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Appendix E3

BCOP Data from Dr. Freddy Van Gothem

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**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|-------------------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| 2-Ethoxyethanol | 100% | 1 | 61.3 | 1.444 | 83 | |
| | | 2 | 64 | 1.498 | 86.5 | |
| | | 3 | 60 | 1.666 | 85 | |
| | | 4 | 64 | 1.304 | 83.6 | |
| | | 5 | 61.3 | 1.534 | 84.3 | |
| | | 6 | 59.7 | 1.646 | 84.3 | |
| | | mean | 61.717 | 1.515 | 84.450 | Severe |
| | | s.d. | 1.886 | 0.134 | 1.214 | |
| | %CV | 3.1% | 8.9% | 1.4% | | |
| Cyclohexanone | 100% | 1 | 80.8 | 3.954 | 140.1 | |
| | | 2 | 76.2 | 5.393 | 157.1 | |
| | | 3 | 70.2 | 4.373 | 135.8 | |
| | | 4 | 75.5 | 3.903 | 134 | |
| | | 5 | 80.5 | 4.081 | 141.7 | |
| | | 6 | 76.5 | 4.341 | 141.6 | |
| | | mean | 76.617 | 4.341 | 141.717 | Severe |
| | | s.d. | 3.878 | 0.551 | 8.171 | |
| | %CV | 5.1% | 12.7% | 5.8% | | |
| Gluconolactone | 20% | 1 | 88.7 | 0.171 | 91.2 | |
| | | 2 | 86.7 | 0.181 | 89.4 | |
| | | 3 | 78 | 0.143 | 80.1 | |
| | | 4 | 78.7 | 0.21 | 81.8 | |
| | | 5 | 88 | 0.1 | 89.5 | |
| | | 6 | 91.3 | 0.118 | 93.1 | |
| | | mean | 85.233 | 0.154 | 87.517 | Severe |
| | | s.d. | 5.543 | 0.041 | 5.290 | |
| | %CV | 6.5% | 26.8% | 6.0% | | |
| 2,4-Pentanedione | 100% | 1 | 44.3 | 0.075 | 45.5 | |
| | | 2 | 47.3 | 0.046 | 48 | |
| | | 3 | 50.7 | 0.133 | 52.7 | |
| | | 4 | 48.3 | 0.123 | 50.2 | |
| | | 5 | 54.3 | 0.055 | 55.2 | |
| | | 6 | 49.3 | 0.074 | 50.4 | |
| | | mean | 49.033 | 0.084 | 50.333 | Moderate |
| | | s.d. | 3.363 | 0.036 | 3.409 | |
| | %CV | 6.9% | 42.4% | 6.8% | | |
| Promethazine hydrochloride | 20% | 1 | 119 | 0.261 | 122.9 | |
| | | 2 | 134.3 | 0.564 | 142.8 | |
| | | 3 | 144 | 0.051 | 144.8 | |
| | | 4 | 140.7 | 0.539 | 148.8 | |
| | | 5 | 143 | 0.179 | 145.7 | |
| | | 6 | 128.7 | 0.128 | 130.6 | |
| | | mean | 134.950 | 0.287 | 139.267 | Severe |
| | | s.d. | 9.733 | 0.216 | 10.182 | |
| | %CV | 7.2% | 75.3% | 7.3% | | |
| Deoxycholic acid, sodium salt | 10% | 1 | 12.2 | 5.181 | 89.9 | |
| | | 2 | 14.8 | 5.49 | 97.2 | |
| | | 3 | 11.8 | 6.097 | 103.3 | |
| | | 4 | 16.8 | 5.204 | 94.9 | |
| | | 5 | 16.5 | 6.444 | 113.2 | |
| | | 6 | 10.8 | 5.895 | 99.3 | |
| | | mean | 13.817 | 5.719 | 99.633 | Severe |
| | | s.d. | 2.563 | 0.511 | 8.008 | |
| | %CV | 18.6% | 8.9% | 8.0% | | |
| Furan | 100% | 1 | 24 | 1.886 | 52.3 | |
| | | 2 | 22.7 | 2.274 | 56.8 | |
| | | 3 | 19.7 | 1.815 | 46.9 | |
| | | 4 | 19.3 | 1.771 | 45.9 | |
| | | 5 | 21 | 1.93 | 49.9 | |
| | | 6 | 17 | 2.143 | 49.1 | |
| | | mean | 20.617 | 1.970 | 50.150 | Moderate |
| | | s.d. | 2.513 | 0.197 | 3.966 | |
| | %CV | 12.2% | 10.0% | 7.9% | | |
| Benzethonium chloride | 10% | 1 | 83.7 | 6.937 | 187.7 | |
| | | 2 | 87.7 | 4.716 | 158.4 | |
| | | 3 | 85.7 | 4.452 | 152.5 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|---------------------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| | | 4 | 83.7 | 5.911 | 172.3 | |
| | | 5 | 79 | 4.769 | 150.5 | |
| | | 6 | 88 | 5.736 | 174 | |
| | | mean | 84.633 | 5.420 | 165.900 | Severe |
| | | s.d. | 3.327 | 0.949 | 14.524 | |
| | | %CV | 3.9% | 17.5% | 8.8% | |
| Hexadecyltrimethylammonium | 10% | 1 | 17.7 | 3.159 | 65.1 | |
| | | 2 | 18.7 | 3.957 | 78 | |
| | | 3 | 24.7 | 2.627 | 64.1 | |
| | | 4 | 13.7 | 3.438 | 65.2 | |
| | | 5 | 18.7 | 3.271 | 67.7 | |
| | | 6 | 16.7 | 4.176 | 79.3 | |
| | | mean | 18.367 | 3.438 | 69.900 | Severe |
| | | s.d. | 3.615 | 0.562 | 6.893 | |
| | | %CV | 19.7% | 16.3% | 9.9% | |
| Quinacrine | 20% | 1 | 52.3 | 0.024 | 52.7 | |
| | | 2 | 58 | 0.041 | 58.6 | |
| | | 3 | 64 | 0.097 | 65.4 | |
| | | 4 | 53.3 | 0.018 | 53.6 | |
| | | 5 | 51.7 | 0.085 | 52.9 | |
| | | 6 | 62.7 | 0.112 | 64.3 | |
| | | mean | 57.000 | 0.063 | 57.917 | Severe |
| | | s.d. | 5.410 | 0.040 | 5.800 | |
| | | %CV | 9.5% | 63.9% | 10.0% | |
| 1-Nitropropane | 100% | 1 | 18.5 | -0.002 | 18.5 | |
| | | 2 | 14.5 | 0.002 | 14.5 | |
| | | 3 | 16.8 | -0.001 | 16.8 | |
| | | 4 | 18.5 | 0.045 | 19.2 | |
| | | 5 | 15.5 | 0.004 | 15.6 | |
| | | 6 | 15.2 | 0 | 15.2 | |
| | | mean | 16.500 | 0.008 | 16.633 | Mild |
| | | s.d. | 1.719 | 0.018 | 1.885 | |
| | | %CV | 10.4% | 228.2% | 11.3% | |
| Octanol | 100% | 1 | 19.2 | 2.582 | 57.9 | |
| | | 2 | 32.5 | 1.946 | 61.7 | |
| | | 3 | 28.2 | 2.265 | 62.1 | |
| | | 4 | 31.2 | 2.685 | 71.4 | |
| | | 5 | 30.5 | 2.091 | 61.9 | |
| | | 6 | 24.8 | 1.7 | 50.3 | |
| | | mean | 27.733 | 2.212 | 60.883 | Severe |
| | | s.d. | 4.981 | 0.377 | 6.851 | |
| | | %CV | 18.0% | 17.1% | 11.3% | |
| N-Lauroylsarcosine, sodium salt | 10% | 1 | 8.7 | 3.117 | 55.4 | |
| | | 2 | 8.7 | 3.764 | 65.1 | |
| | | 3 | 8.3 | 3.981 | 68.1 | |
| | | 4 | 6.7 | 4.415 | 72.9 | |
| | | 5 | 6.7 | 3.227 | 55.1 | |
| | | 6 | 7.7 | 3.411 | 58.8 | |
| | | mean | 7.800 | 3.653 | 62.567 | Severe |
| | | s.d. | 0.927 | 0.496 | 7.282 | |
| | | %CV | 11.9% | 13.6% | 11.6% | |
| Allyl alcohol | 100% | 1 | 116.7 | 1.552 | 139.9 | |
| | | 2 | 112.3 | 1.953 | 141.6 | |
| | | 3 | 90.3 | 1.856 | 118.2 | |
| | | 4 | 97.7 | 1.578 | 121.3 | |
| | | 5 | 80 | 1.945 | 109.2 | |
| | | 6 | 67.3 | 2.804 | 109.4 | |
| | | mean | 94.050 | 1.948 | 123.267 | Severe |
| | | s.d. | 18.902 | 0.455 | 14.370 | |
| | | %CV | 20.1% | 23.4% | 11.7% | |
| Butyrolactone | 100% | 1 | 35 | 0.38 | 40.7 | |
| | | 2 | 33.3 | 0.506 | 40.9 | |
| | | 3 | 31 | 0.291 | 35.4 | |
| | | 4 | 31.7 | 0.747 | 42.9 | |
| | | 5 | 39.7 | 0.721 | 50.5 | |
| | | 6 | 34.7 | 0.326 | 39.6 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|-------------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| | | mean | 34.233 | 0.495 | 41.667 | Moderate |
| | | s.d. | 3.112 | 0.199 | 4.992 | |
| | | %CV | 9.1% | 40.2% | 12.0% | |
| 1-Phenyl-3-pyrazolidone | 20% | 1 | 11.5 | 0.156 | 13.8 | |
| | | 2 | 11.5 | 0.093 | 12.9 | |
| | | 3 | 9.8 | 0.11 | 11.5 | |
| | | 4 | 11.2 | 0.114 | 12.9 | |
| | | 5 | 9.8 | 0.145 | 12 | |
| | | 6 | 12.5 | 0.237 | 16.1 | |
| | | mean | 11.050 | 0.143 | 13.200 | Mild |
| | | s.d. | 1.063 | 0.052 | 1.630 | |
| | | %CV | 9.6% | 36.4% | 12.3% | |
| Methanol | 100% | 1 | 76.8 | 1.552 | 100.1 | |
| | | 2 | 64.5 | 0.917 | 78.3 | |
| | | 3 | 71.2 | 2.088 | 102.5 | |
| | | 4 | 70.8 | 1.795 | 97.8 | |
| | | 5 | 78.2 | 1.333 | 98.2 | |
| | | 6 | 80.8 | 2.5 | 118.3 | |
| | | mean | 73.717 | 1.698 | 99.200 | Severe |
| | | s.d. | 5.993 | 0.560 | 12.777 | |
| | | %CV | 8.1% | 33.0% | 12.9% | |
| Thiourea | 20% | 1 | 86 | 4.373 | 151.6 | |
| | | 2 | 71 | 3.379 | 121.7 | |
| | | 3 | 79 | 4.357 | 144.4 | |
| | | 4 | 94 | 4.342 | 159.1 | |
| | | 5 | 91 | 6.263 | 184.9 | |
| | | 6 | 93.7 | 3.524 | 146.5 | |
| | | mean | 85.783 | 4.373 | 151.367 | Severe |
| | | s.d. | 9.187 | 1.028 | 20.672 | |
| | | %CV | 10.7% | 23.5% | 13.7% | |
| Ethanol | 100% | 1 | 29.8 | 1.627 | 54.2 | |
| | | 2 | 21.2 | 1.907 | 49.8 | |
| | | 3 | 21.5 | 1.686 | 46.8 | |
| | | 4 | 23.8 | 1.394 | 44.7 | |
| | | 5 | 19.5 | 1.011 | 34.7 | |
| | | 6 | 18.2 | 1.73 | 44.1 | |
| | | mean | 22.333 | 1.559 | 45.717 | Moderate |
| | | s.d. | 4.123 | 0.316 | 6.555 | |
| | | %CV | 18.5% | 20.3% | 14.3% | |
| Ethyl acetoacetate | 100% | 1 | 28.3 | 0.215 | 31.6 | |
| | | 2 | 25.3 | 0.043 | 26 | |
| | | 3 | 20.7 | 0.06 | 21.6 | |
| | | 4 | 23.3 | 0.307 | 27.9 | |
| | | 5 | 25.3 | 0.023 | 25.7 | |
| | | 6 | 21 | 0.049 | 21.7 | |
| | | mean | 23.983 | 0.116 | 25.750 | Moderate |
| | | s.d. | 2.907 | 0.117 | 3.809 | |
| | | %CV | 12.1% | 100.3% | 14.8% | |
| Pyridine | 100% | 1 | 47.5 | 5.145 | 124.7 | |
| | | 2 | 43.8 | 3.653 | 98.6 | |
| | | 3 | 40.8 | 3.044 | 86.5 | |
| | | 4 | 42.2 | 3.207 | 90.3 | |
| | | 5 | 42.8 | 4.309 | 107.5 | |
| | | 6 | 49.5 | 4.733 | 120.5 | |
| | | mean | 44.433 | 4.015 | 104.683 | Severe |
| | | s.d. | 3.357 | 0.849 | 15.705 | |
| | | %CV | 7.6% | 21.1% | 15.0% | |
| Dimethyl sulfoxide | 100% | 1 | 6.7 | 0.218 | 9.9 | |
| | | 2 | 5.3 | 0.159 | 7.7 | |
| | | 3 | 8.7 | 0.196 | 11.6 | |
| | | 4 | 4 | 0.291 | 8.4 | |
| | | 5 | 5.7 | 0.23 | 9.1 | |
| | | 6 | 7.7 | 0.134 | 9.7 | |
| | | mean | 6.350 | 0.205 | 9.400 | Mild |
| | | s.d. | 1.704 | 0.056 | 1.354 | |
| | | %CV | 26.8% | 27.1% | 14.4% | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|---------------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| 2-Methoxyethanol | 100% | 1 | 48.7 | 0.879 | 61.8 | |
| | | 2 | 39.7 | 0.685 | 49.9 | |
| | | 3 | 52.7 | 0.751 | 63.9 | |
| | | 4 | 37.7 | 0.732 | 48.6 | |
| | | 5 | 52.7 | 1.044 | 68.3 | |
| | | 6 | 39 | 0.713 | 49.7 | |
| | | mean | 45.083 | 0.801 | 57.033 | Severe |
| | | s.d. | 7.066 | 0.137 | 8.632 | |
| %CV | 15.7% | 17.1% | 15.1% | | | |
| Methylisobutyl ketone | 100% | 1 | 11.5 | 0.504 | 19.1 | |
| | | 2 | 14.5 | 0.395 | 20.4 | |
| | | 3 | 8.5 | 0.359 | 13.9 | |
| | | 4 | 7.5 | 0.94 | 21.6 | |
| | | 5 | 13.5 | 0.335 | 18.5 | |
| | | 6 | 11.5 | 0.74 | 22.6 | |
| | | mean | 11.167 | 0.546 | 19.350 | Mild |
| | | s.d. | 2.733 | 0.244 | 3.073 | |
| %CV | 24.5% | 44.7% | 15.9% | | | |
| Dibenzoyl-L-tartaric acid | 20% | 1 | 90 | 0.523 | 97.9 | |
| | | 2 | 81 | 0.425 | 87.4 | |
| | | 3 | 53.7 | 0.453 | 60.5 | |
| | | 4 | 63.7 | 0.485 | 70.9 | |
| | | 5 | 87.7 | 0.194 | 90.6 | |
| | | 6 | 75.3 | 0.416 | 81.6 | |
| | | mean | 75.233 | 0.416 | 81.483 | Severe |
| | | s.d. | 14.166 | 0.116 | 13.711 | |
| %CV | 18.8% | 27.8% | 16.8% | | | |
| Imidazole | 20% | 1 | 41.7 | 2.096 | 73.1 | |
| | | 2 | 32.7 | 1.416 | 53.9 | |
| | | 3 | 27.7 | 1.412 | 48.9 | |
| | | 4 | 52 | 1.386 | 72.8 | |
| | | 5 | 36.7 | 1.68 | 61.9 | |
| | | 6 | 51.3 | 1.597 | 75.3 | |
| | | mean | 40.350 | 1.598 | 64.317 | Severe |
| | | s.d. | 9.893 | 0.271 | 11.151 | |
| %CV | 24.5% | 17.0% | 17.3% | | | |
| 2-Aminophenol | 20% | 1 | 9.2 | 0.093 | 10.6 | |
| | | 2 | 10.8 | 0.056 | 11.7 | |
| | | 3 | 12.2 | 0.065 | 13.1 | |
| | | 4 | 10.8 | 0.039 | 11.4 | |
| | | 5 | 12.8 | 0.083 | 14.1 | |
| | | 6 | 9.5 | 0.526 | 17.4 | |
| | | mean | 10.883 | 0.144 | 13.050 | Mild |
| | | s.d. | 1.426 | 0.188 | 2.473 | |
| %CV | 13.1% | 131.1% | 18.9% | | | |
| 1,2,4-Trimethylbenzene | 100% | 1 | 12.2 | 0.34 | 17.3 | |
| | | 2 | 13.8 | 0.532 | 21.8 | |
| | | 3 | 12.5 | 0.383 | 18.3 | |
| | | 4 | 12.8 | 0.786 | 24.6 | |
| | | 5 | 9.8 | 1.216 | 28.1 | |
| | | 6 | 13.8 | 0.212 | 17 | |
| | | mean | 12.483 | 0.578 | 21.183 | Mild |
| | | s.d. | 1.473 | 0.369 | 4.490 | |
| %CV | 11.8% | 63.8% | 21.2% | | | |
| 1,2,3-Trichloropropane | 100% | 1 | 6 | 6.151 | 98.3 | |
| | | 2 | 11.3 | 4.191 | 74.2 | |
| | | 3 | 6.3 | 4.491 | 73.7 | |
| | | 4 | 7 | 7.751 | 123.3 | |
| | | 5 | 8.3 | 4.511 | 76 | |
| | | 6 | 7.3 | 6.271 | 101.4 | |
| | | mean | 7.700 | 5.561 | 91.150 | Severe |
| | | s.d. | 1.940 | 1.398 | 20.056 | |
| %CV | 25.2% | 25.1% | 22.0% | | | |
| Aluminum hydroxide | 20% | 1 | 8.7 | 0.012 | 8.9 | |
| | | 2 | 9.7 | 0.004 | 9.7 | |
| | | 3 | 10 | 0.015 | 10.2 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|--------------------------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| | | 4 | 13 | 0.011 | 13.2 | |
| | | 5 | 6 | 0.022 | 6.3 | |
| | | 6 | 11 | 0.006 | 11.1 | |
| | | mean | 9.733 | 0.012 | 9.900 | Mild |
| | | s.d. | 2.339 | 0.006 | 2.299 | |
| | | %CV | 24.0% | 55.5% | 23.2% | |
| Diacetone alcohol | 100% | 1 | 32.5 | 4.507 | 100.1 | |
| | | 2 | 31.2 | 4.119 | 92.9 | |
| | | 3 | 34.8 | 6.509 | 132.5 | |
| | | 4 | 25.5 | 3.775 | 82.1 | |
| | | 5 | 32.8 | 3.064 | 78.8 | |
| | | 6 | 29.8 | 2.74 | 70.9 | |
| | | mean | 31.100 | 4.119 | 92.883 | Severe |
| | | s.d. | 3.212 | 1.341 | 21.997 | |
| | | %CV | 10.3% | 32.6% | 23.7% | |
| Laurylsulfobetaine | 10% | 1 | 14.3 | 6.259 | 108.2 | |
| | | 2 | 19.3 | 4.404 | 85.4 | |
| | | 3 | 19 | 7.4 | 130 | |
| | | 4 | 10 | 3.743 | 66.2 | |
| | | 5 | 13.3 | 5.543 | 96.5 | |
| | | 6 | 21.3 | 7.102 | 127.9 | |
| | | mean | 16.200 | 5.742 | 102.367 | Severe |
| | | s.d. | 4.334 | 1.462 | 24.819 | |
| | | %CV | 26.8% | 25.5% | 24.2% | |
| 2,4-Dichloro-5-sulfamoylbenzoic acid | 20% | 1 | 24 | -0.011 | 23.8 | |
| | | 2 | 21 | -0.014 | 20.8 | |
| | | 3 | 15.3 | -0.011 | 15.2 | |
| | | 4 | 11.7 | -0.003 | 11.6 | |
| | | 5 | 22 | -0.012 | 21.8 | |
| | | 6 | 22 | -0.008 | 21.9 | |
| | | mean | 19.333 | -0.010 | 19.183 | Mild |
| | | s.d. | 4.761 | 0.004 | 4.723 | |
| | | %CV | 24.6% | -39.3% | 24.6% | |
| Propyl-4-hydroxybenzoate | 20% | 1 | 8 | 0.008 | 8.1 | |
| | | 2 | 4 | 0.169 | 6.5 | |
| | | 3 | 6.3 | 0.063 | 7.3 | |
| | | 4 | 4 | 0.014 | 4.2 | |
| | | 5 | 4.7 | 0.089 | 6 | |
| | | 6 | 4 | 0.053 | 4.8 | |
| | | mean | 5.167 | 0.066 | 6.150 | Mild |
| | | s.d. | 1.650 | 0.059 | 1.476 | |
| | | %CV | 31.9% | 89.3% | 24.0% | |
| 3-Glycidoxypropyltrimethoxysilane | 100% | 1 | 19.5 | 0.213 | 22.7 | |
| | | 2 | 21.2 | 0.015 | 21.4 | |
| | | 3 | 20.5 | 0.005 | 20.6 | |
| | | 4 | 12.5 | 0.111 | 14.2 | |
| | | 5 | 10.5 | 0.023 | 10.8 | |
| | | 6 | 15.5 | 0.025 | 15.9 | |
| | | mean | 16.617 | 0.065 | 17.600 | Mild |
| | | s.d. | 4.472 | 0.082 | 4.693 | |
| | | %CV | 26.9% | 125.3% | 26.7% | |
| Triethanolamine | 100% | 1 | 3.2 | 0.029 | 3.6 | |
| | | 2 | 3.2 | 0.03 | 3.6 | |
| | | 3 | 1.8 | 0.016 | 2.1 | |
| | | 4 | 3.5 | 0.043 | 4.1 | |
| | | 5 | 2.8 | 0.018 | 3.1 | |
| | | 6 | 1.2 | 0.016 | 1.4 | |
| | | mean | 2.617 | 0.025 | 2.983 | Mild |
| | | s.d. | 0.913 | 0.011 | 1.030 | |
| | | %CV | 34.9% | 42.3% | 34.5% | |
| Phenylbutazone | 20% | 1 | 0.3 | -0.005 | 0.3 | |
| | | 2 | 0.3 | -0.012 | 0.1 | |
| | | 3 | 0.3 | -0.015 | 0.1 | |
| | | 4 | 1 | -0.007 | 0.9 | |
| | | 5 | 0.7 | 0.005 | 0.7 | |
| | | 6 | 1.3 | -0.013 | 1.1 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|------------------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| | | mean | 0.650 | -0.008 | 0.533 | Mild |
| | | s.d. | 0.428 | 0.007 | 0.427 | |
| | | %CV | 65.8% | -93.6% | 80.1% | |
| Sodium oxalate | 20% | 1 | 0.3 | 0.092 | 1.7 | |
| | | 2 | 1 | 0.028 | 1.4 | |
| | | 3 | 2.3 | 0.108 | 3.9 | |
| | | 4 | 1.7 | 0.128 | 3.6 | |
| | | 5 | 2 | 0.15 | 4.2 | |
| | | 6 | 2.7 | 0.115 | 4.4 | |
| | | mean | 1.667 | 0.104 | 3.200 | Mild |
| | | s.d. | 0.882 | 0.042 | 1.310 | |
| | | %CV | 52.9% | 40.4% | 40.9% | |
| Tetraaminopyrimidine sulfate | 20% | 1 | 2.7 | -0.009 | 2.5 | |
| | | 2 | 3 | 0.002 | 3 | |
| | | 3 | 3 | -0.009 | 2.9 | |
| | | 4 | 1 | 0.007 | 1.1 | |
| | | 5 | 1 | -0.007 | 0.9 | |
| | | 6 | 4.7 | -0.004 | 4.6 | |
| | | mean | 2.567 | -0.003 | 2.500 | Mild |
| | | s.d. | 1.404 | 0.007 | 1.367 | |
| | | %CV | 54.7% | -196.0% | 54.7% | |
| Magnesium carbonate | 20% | 1 | 1 | 0.02 | 1.3 | |
| | | 2 | 0 | 0.015 | 0.2 | |
| | | 3 | 0 | 0.023 | 0.4 | |
| | | 4 | 1 | 0.012 | 1.2 | |
| | | 5 | 0 | 0.015 | 0.2 | |
| | | 6 | 1 | 0.014 | 1.2 | |
| | | mean | 0.500 | 0.017 | 0.750 | Mild |
| | | s.d. | 0.548 | 0.004 | 0.536 | |
| | | %CV | 109.5% | 25.1% | 71.4% | |
| Betaine monohydrate | 20% | 1 | 6.7 | 0.015 | 6.9 | |
| | | 2 | 1 | 0.026 | 1.4 | |
| | | 3 | 1 | 0.027 | 1.4 | |
| | | 4 | 5 | 0.02 | 5.3 | |
| | | 5 | 1.7 | 0.055 | 2.5 | |
| | | 6 | 3 | 0.029 | 3.4 | |
| | | mean | 3.067 | 0.029 | 3.483 | Mild |
| | | s.d. | 2.339 | 0.014 | 2.219 | |
| | | %CV | 76.3% | 48.5% | 63.7% | |
| Triton X-155 | 10% | 1 | 2.7 | 0.003 | 2.7 | |
| | | 2 | 3.7 | -0.006 | 3.6 | |
| | | 3 | 4.7 | 0 | 4.7 | |
| | | 4 | 0.7 | 0.004 | 0.7 | |
| | | 5 | 1.7 | 0.02 | 2 | |
| | | 6 | 4.7 | 0.032 | 5.1 | |
| | | mean | 3.033 | 0.009 | 3.133 | Mild |
| | | s.d. | 1.633 | 0.014 | 1.669 | |
| | | %CV | 53.8% | 161.4% | 53.3% | |
| EDTA, di-potassium salt | 20% | 1 | 0.3 | 0.024 | 0.7 | |
| | | 2 | 1 | 0.02 | 1.3 | |
| | | 3 | 0.3 | -0.004 | 0.3 | |
| | | 4 | 0.3 | -0.004 | 0.3 | |
| | | 5 | 1 | 0.024 | 1.4 | |
| | | 6 | 1.7 | 0 | 1.7 | |
| | | mean | 0.767 | 0.010 | 0.950 | Mild |
| | | s.d. | 0.572 | 0.014 | 0.599 | |
| | | %CV | 74.5% | 140.3% | 63.1% | |
| BRIJ-35 | 10% | 1 | 1.7 | 0.012 | 1.8 | |
| | | 2 | 0.7 | 0.001 | 0.7 | |
| | | 3 | 0.7 | 0 | 0.7 | |
| | | 4 | 2 | -0.006 | 1.9 | |
| | | 5 | 0.7 | -0.008 | 0.6 | |
| | | 6 | 0.7 | -0.009 | 0.5 | |
| | | mean | 1.083 | -0.002 | 1.033 | Mild |
| | | s.d. | 0.601 | 0.008 | 0.638 | |
| | | %CV | 55.5% | -471.9% | 61.7% | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|----------------------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| Petroleum ether | 100% | 1 | 3.2 | 0.006 | 3.3 | |
| | | 2 | 0.5 | 0.02 | 0.8 | |
| | | 3 | 3.8 | 0.035 | 4.4 | |
| | | 4 | 2.2 | 0.008 | 2.3 | |
| | | 5 | 2.8 | 0.006 | 2.9 | |
| | | 6 | -1.2 | 0.012 | -1 | |
| | | mean | 1.883 | 0.015 | 2.117 | Mild |
| s.d. | 1.885 | 0.011 | 1.934 | | | |
| %CV | 100.1% | 78.2% | 91.4% | | | |
| Anthracene | 20% | 1 | 3 | 0.001 | 3 | |
| | | 2 | 0.3 | -0.009 | 0.2 | |
| | | 3 | 1.7 | 0.005 | 1.7 | |
| | | 4 | 0.3 | 0.004 | 0.4 | |
| | | 5 | 2.7 | 0.007 | 2.8 | |
| | | 6 | 0.3 | 0.01 | 0.5 | |
| | | mean | 1.383 | 0.003 | 1.433 | Mild |
| s.d. | 1.262 | 0.007 | 1.253 | | | |
| %CV | 91.3% | 220.1% | 87.4% | | | |
| Dimethylbiguanide | 20% | 1 | 0 | 0.016 | 0.2 | |
| | | 2 | 2 | 0.014 | 2.2 | |
| | | 3 | 1 | 0.036 | 1.5 | |
| | | 4 | -1.7 | 0.034 | -1.2 | |
| | | 5 | -0.7 | 0.457 | 6.2 | |
| | | 6 | 3.3 | 0.026 | 3.7 | |
| | | mean | 0.650 | 0.097 | 2.100 | Mild |
| s.d. | 1.829 | 0.177 | 2.617 | | | |
| %CV | 281.5% | 181.7% | 124.6% | | | |
| MYRJ-45 | 10% | 1 | 2.8 | 0.012 | 3 | |
| | | 2 | -1.2 | 0.001 | -1.1 | |
| | | 3 | 0.2 | 0.005 | 0.2 | |
| | | 4 | -0.5 | 0.002 | -0.5 | |
| | | 5 | 0.5 | 0.001 | 0.5 | |
| | | 6 | 0.5 | 0.009 | 0.6 | |
| | | mean | 0.383 | 0.005 | 0.450 | Mild |
| s.d. | 1.356 | 0.005 | 1.407 | | | |
| %CV | 353.6% | 92.1% | 312.6% | | | |
| Hexane | 100% | 1 | 0.7 | 0.002 | 0.7 | |
| | | 2 | 4.3 | 0.002 | 4.4 | |
| | | 3 | 2.3 | 0 | 2.3 | |
| | | 4 | -0.3 | 0.007 | -0.2 | |
| | | 5 | -0.3 | 0.003 | -0.3 | |
| | | 6 | 1.3 | 0.002 | 1.4 | |
| | | mean | 1.333 | 0.003 | 1.383 | Mild |
| s.d. | 1.759 | 0.002 | 1.775 | | | |
| %CV | 131.9% | 87.7% | 128.3% | | | |
| 2-Mercaptopyrimidine | 20% | 1 | 0 | -0.005 | -0.1 | |
| | | 2 | 0 | -0.004 | -0.1 | |
| | | 3 | 0 | -0.006 | -0.1 | |
| | | 4 | 0 | 0.001 | 0 | |
| | | 5 | 0 | -0.005 | -0.1 | |
| | | 6 | -1 | -0.004 | -1.1 | |
| | | mean | -0.167 | -0.004 | -0.250 | Mild |
| s.d. | 0.408 | 0.002 | 0.418 | | | |
| %CV | -244.9% | -64.8% | -167.3% | | | |
| Iminodibenzyl | 20% | 1 | 0 | 0.002 | 0 | |
| | | 2 | 0 | 0.002 | 0 | |
| | | 3 | 0 | -0.002 | 0 | |
| | | 4 | 0 | -0.003 | 0 | |
| | | 5 | 1 | 0.001 | 1 | |
| | | 6 | 0 | -0.004 | -0.1 | |
| | | mean | 0.167 | -0.001 | 0.150 | Mild |
| s.d. | 0.408 | 0.003 | 0.418 | | | |
| %CV | 244.9% | -398.7% | 278.9% | | | |
| DL-Glutamic acid | 20% | 1 | 0.3 | -0.004 | 0.3 | |
| | | 2 | -0.7 | 0.003 | -0.6 | |
| | | 3 | 0.3 | -0.012 | 0.2 | |

**Intralaboratory CV Analysis of BCOP -
Data from Dr. Freddy Van Goethem**

| Substance | Concentration | Cornea number | Opacity | Permeability | <i>In Vitro</i> Score ¹ | <i>In Vitro</i> Classification |
|-----------|---------------|---------------|---------|--------------|------------------------------------|--------------------------------|
| | | 4 | -0.7 | -0.005 | -0.7 | |
| | | 5 | 0.3 | -0.006 | 0.2 | |
| | | 6 | -0.7 | -0.008 | -0.8 | |
| | | mean | -0.200 | -0.005 | -0.233 | Mild |
| | | s.d. | 0.548 | 0.005 | 0.516 | |
| | | %CV | -273.9% | -93.1% | -221.3% | |

Abbreviations: CV = Coefficient of variation; SD = Standard deviation

¹*In Vitro* Score = Opacity + (15 x permeability value)

Appendix F

Interlaboratory Correlation Coefficients from the EC/HO Validation Study (Balls et al., 1995)

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**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|--------|--------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| A | BCOPP9 | 60 | a | 1.000 | | | | |
| A | BCOPP10 | 60 | b | 0.777 | 1.000 | | | |
| A | BCOPP11 | 60 | c | 0.886 | 0.862 | 1.000 | | |
| A | BCOPP12 | 60 | d | 0.797 | 0.683 | 0.859 | 1.000 | |
| A | BCOPP13 | 60 | e | 0.856 | 0.788 | 0.906 | 0.892 | 1.000 |
| A | BCOPO9 | 60 | a | 1.000 | | | | |
| A | BCOPO10 | 60 | b | 0.924 | 1.000 | | | |
| A | BCOPO11 | 60 | c | 0.934 | 0.898 | 1.000 | | |
| A | BCOPO12 | 60 | d | 0.946 | 0.905 | 0.978 | 1.000 | |
| A | BCOPO13 | 60 | e | 0.970 | 0.936 | 0.953 | 0.955 | 1.000 |
| A | BCOPI9 | 60 | a | 1.000 | | | | |
| A | BCOPI10 | 60 | b | 0.894 | 1.000 | | | |
| A | BCOPI11 | 60 | c | 0.922 | 0.896 | 1.000 | | |
| A | BCOPI12 | 60 | d | 0.924 | 0.867 | 0.957 | 1.000 | |
| A | BCOPI13 | 60 | e | 0.955 | 0.901 | 0.947 | 0.958 | 1.000 |
| A | BCOPI9b | 60 | a | 1.000 | | | | |
| A | BCOPI10b | 60 | b | 0.898 | 1.000 | | | |
| A | BCOPI11b | 60 | c | 0.913 | 0.913 | 1.000 | | |
| A | BCOPI12b | 60 | d | 0.908 | 0.848 | 0.916 | 1.000 | |
| A | BCOPP13b | 60 | e | 0.939 | 0.885 | 0.938 | 0.938 | 1.000 |
| A | HETQ14 | 49 | a | 1.000 | | | | |
| A | HETQ15 | 40 | b | 0.790 | 1.000 | | | |
| A | HETQ16 | 47 | c | 0.473 | 0.521 | 1.000 | | |
| A | HETQ17 | 41 | d | 0.550 | 0.734 | 0.664 | 1.000 | |
| A | HETS14 | 11 | a | 1.000 | | | | |
| A | HETS15 | 13 | b | 0.174 | 1.000 | | | |
| A | HETS16 | 13 | c | -0.171 | -0.171 | 1.000 | | |
| A | HETS17 | 17 | d | -0.103 | 0.808 | 0.031 | 1.000 | |
| A | HETQ14b | 49 | a | 1.000 | | | | |
| A | HETQ15b | 40 | b | 0.627 | 1.000 | | | |
| A | HETQ16b | 47 | c | 0.709 | 0.638 | 1.000 | | |
| A | HETQ17b | 41 | d | 0.449 | 0.814 | 0.528 | 1.000 | |
| A | HETS14b | 11 | a | 1.000 | | | | |
| A | HETS15b | 13 | b | * | 1.000 | | | |
| A | HETS16b | 13 | c | -0.043 | -0.316 | 1.000 | | |
| A | HETS17b | 41 | d | * | * | * | * | |
| A | ICES 22 | 60 | a | 1.000 | | | | |
| A | ICES 27 | 60 | b | 0.721 | 1.000 | | | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|-------------------|--------------------------|------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| A | ICES 24 | 59 | c | 0.750 | 0.715 | 1.000 | | |
| A | ICES 25 | 58 | d | 0.627 | 0.668 | 0.734 | 1.000 | |
| A | ICEO 22 | 60 | a | 1.000 | | | | |
| A | ICEO 27 | 60 | b | 0.700 | 1.000 | | | |
| A | ICEO 24 | 60 | c | 0.759 | 0.716 | 1.000 | | |
| A | ICEO 25 | 60 | d | 0.752 | 0.679 | 0.732 | 1.000 | |
| A | ICEF 22 | 60 | a | 1.000 | | | | |
| A | ICEF 27 | 60 | b | 0.693 | 1.000 | | | |
| A | ICEF 24 | 59 | c | 0.768 | 0.525 | 1.000 | | |
| A | ICEF 25 | 60 | d | 0.719 | 0.654 | 0.690 | 1.000 | |
| A | ICEC 22 | 60 | a | 1.000 | | | | |
| A | ICEC 27 | 60 | b | 0.829 | 1.000 | | | |
| A | ICEC 24 | 60 | c | 0.849 | 0.759 | 1.000 | | |
| A | ICEC 25 | 60 | d | 0.844 | 0.801 | 0.853 | 1.000 | |
| A | IREA 26 | 60 | a | 1.000 | | | | |
| A | IREA 23 | 60 | b | 0.441 | 1.000 | | | |
| A | IREA 28 | 60 | c | 0.585 | 0.695 | 1.000 | | |
| A | IREA 29 | 60 | d | 0.619 | 0.587 | 0.677 | 1.000 | |
| A | IREB 26 | 60 | a | 1.000 | | | | |
| A | IREB 23 | 60 | b | 0.728 | 1.000 | | | |
| A | IREB 28 | 60 | c | 0.714 | 0.688 | 1.000 | | |
| A | IREB 29 | 60 | d | 0.688 | 0.617 | 0.808 | 1.000 | |
| A | IREC 26 | 58 | a | 1.000 | | | | |
| A | IREC 23 | 60 | b | 0.524 | 1.000 | | | |
| A | IREC 28 | 58 | c | 0.485 | 0.414 | 1.000 | | |
| A | IREC 29 | 60 | d | 0.625 | 0.681 | 0.819 | 1.000 | |
| A | IRED 26 | 58 | a | 1.000 | | | | |
| A | IRED 23 | 60 | b | 0.623 | 1.000 | | | |
| A | IRED 28 | 58 | c | 0.707 | 0.618 | 1.000 | | |
| A | IRED 29 | 60 | d | 0.813 | 0.698 | 0.882 | 1.000 | |
| A | IRESUM 26 | 60 | a | 1.000 | | | | |
| A | IRESUM 23 | 59 | b | 0.502 | 1.000 | | | |
| A | IRESUM 28 | 60 | c | 0.574 | 0.834 | 1.000 | | |
| A | IRESUM 29 | 54 | d | 0.689 | 0.709 | 0.798 | 1.000 | |
| B | BCOPP9 | 30 | a | 1.000 | | | | |
| B | BCOPP10 | 30 | b | 0.733 | 1.000 | | | |
| B | BCOPP11 | 30 | c | 0.864 | 0.818 | 1.000 | | |
| B | BCOPP12 | 30 | d | 0.760 | 0.521 | 0.807 | 1.000 | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|-------------------|--------------------------|------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| B | BCOPP13 | 30 | e | 0.880 | 0.666 | 0.870 | 0.840 | 1.000 |
| B | BCOPO9 | 30 | a | 1.000 | | | | |
| B | BCOPO10 | 30 | b | 0.945 | 1.000 | | | |
| B | BCOPO11 | 30 | c | 0.971 | 0.932 | 1.000 | | |
| B | BCOPO12 | 30 | d | 0.962 | 0.927 | 0.964 | 1.000 | |
| B | BCOPO13 | 30 | e | 0.959 | 0.938 | 0.946 | 0.928 | 1.000 |
| B | BCOPI9 | 30 | a | 1.000 | | | | |
| B | BCOPI10 | 30 | b | 0.906 | 1.000 | | | |
| B | BCOPI11 | 30 | c | 0.952 | 0.936 | 1.000 | | |
| B | BCOPI12 | 30 | d | 0.929 | 0.855 | 0.944 | 1.000 | |
| B | BCOPI13 | 30 | e | 0.950 | 0.864 | 0.949 | 0.948 | 1.000 |
| B | BCOPI9b | 30 | a | 1.000 | | | | |
| B | BCOPI10b | 30 | b | 0.888 | 1.000 | | | |
| B | BCOPI11b | 30 | c | 0.936 | 0.938 | 1.000 | | |
| B | BCOPI12b | 30 | d | 0.892 | 0.823 | 0.916 | 1.000 | |
| B | BCOPP13b | 30 | e | 0.930 | 0.850 | 0.952 | 0.926 | 1.000 |
| B | HETQ14 | 25 | a | 1.000 | | | | |
| B | HETQ15 | 17 | b | 0.711 | 1.000 | | | |
| B | HETQ16 | 23 | c | 0.355 | 0.387 | 1.000 | | |
| B | HETQ17 | 18 | d | 0.456 | 0.760 | 0.679 | 1.000 | |
| B | HETS14 | 5 | a | * | | | | |
| B | HETSd15 | 9 | b | * | 1.000 | | | |
| B | HETS16 | 7 | c | * | 0.949 | 1.000 | | |
| B | HETS17 | 11 | d | * | 0.831 | 0.420 | 1.000 | |
| B | HETQ14b | 25 | a | 1.000 | | | | |
| B | HETQ15b | 17 | b | 0.727 | 1.000 | | | |
| B | HETQ16b | 23 | c | 0.645 | 0.594 | 1.000 | | |
| B | HETQ17b | 18 | d | 0.927 | 0.470 | 0.535 | 1.000 | |
| B | ICES 22 | 30 | a | 1.000 | | | | |
| B | ICES 27 | 30 | b | 0.808 | 1.000 | | | |
| B | ICES 24 | 29 | c | 0.722 | 0.789 | 1.000 | | |
| B | ICES 25 | 29 | d | 0.691 | 0.795 | 0.789 | 1.000 | |
| B | ICEO 22 | 30 | a | 1.000 | | | | |
| B | ICEO 27 | 30 | b | 0.775 | 1.000 | | | |
| B | ICEO 24 | 30 | c | 0.775 | 0.821 | 1.000 | | |
| B | ICEO 25 | 30 | d | 0.847 | 0.812 | 0.771 | 1.000 | |
| B | ICEF 22 | 30 | a | 1.000 | | | | |
| B | ICEF 27 | 30 | b | 0.803 | 1.000 | | | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| B | ICEF 24 | 29 | c | 0.846 | 0.692 | 1.000 | | |
| B | ICEF 25 | 30 | d | 0.676 | 0.727 | 0.704 | 1.000 | |
| B | ICEC 22 | 30 | a | 1.000 | | | | |
| B | ICEC 27 | 30 | b | 0.892 | 1.000 | | | |
| B | ICEC 24 | 30 | c | 0.881 | 0.860 | 1.000 | | |
| B | ICEC 25 | 30 | d | 0.881 | 0.896 | 0.858 | 1.000 | |
| B | IREA 26 | 30 | a | 1.000 | | | | |
| B | IREA 23 | 30 | b | 0.503 | 1.000 | | | |
| B | IREA 28 | 30 | c | 0.624 | 0.814 | 1.000 | | |
| B | IREA 29 | 30 | d | 0.608 | 0.706 | 0.701 | 1.000 | |
| B | IREB 26 | 30 | a | 1.000 | | | | |
| B | IREB 23 | 30 | b | 0.754 | 1.000 | | | |
| B | IREB 28 | 30 | c | 0.699 | 0.746 | 1.000 | | |
| B | IREB 29 | 30 | d | 0.690 | 0.674 | 0.912 | 1.000 | |
| B | IREC 26 | 29 | a | 1.000 | | | | |
| B | IREC 23 | 30 | b | 0.606 | 1.000 | | | |
| B | IREC 28 | 28 | c | 0.655 | 0.439 | 1.000 | | |
| B | IREC 29 | 30 | d | 0.777 | 0.733 | 0.855 | 1.000 | |
| B | IRED 26 | 29 | a | 1.000 | | | | |
| B | IRED 23 | 30 | b | 0.663 | 1.000 | | | |
| B | IRED 28 | 28 | c | 0.799 | 0.598 | 1.000 | | |
| B | IRED 29 | 30 | d | 0.855 | 0.747 | 0.939 | 1.000 | |
| B | IRESUM 26 | 30 | a | 1.000 | | | | |
| B | IRESUM 23 | 29 | b | 0.568 | 1.000 | | | |
| B | IRESUM 28 | 30 | c | 0.595 | 0.955 | 1.000 | | |
| B | IRESUM 29 | 25 | d | 0.835 | 0.749 | 0.799 | 1.000 | |
| C | BCOPP9 | 18 | a | 1.000 | | | | |
| C | BCOPP10 | 18 | b | 0.915 | 1.000 | | | |
| C | BCOPP11 | 18 | c | 0.932 | 0.893 | 1.000 | | |
| C | BCOPP12 | 18 | d | 0.785 | 0.688 | 0.894 | 1.000 | |
| C | BCOPP13 | 18 | e | 0.901 | 0.889 | 0.963 | 0.922 | 1.000 |
| C | BCOPO9 | 18 | a | 1.000 | | | | |
| C | BCOPO10 | 18 | b | 0.959 | 1.000 | | | |
| C | BCOPO11 | 18 | c | 0.913 | 0.896 | 1.000 | | |
| C | BCOPO12 | 18 | d | 0.942 | 0.928 | 0.991 | 1.000 | |
| C | BCOPO13 | 18 | e | 0.982 | 0.972 | 0.961 | 0.978 | 1.000 |
| C | BCOPI9 | 18 | a | 1.000 | | | | |
| C | BCOPI10 | 18 | b | 0.946 | 1.000 | | | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|--------|--------|--------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| C | BCOPI11 | 18 | c | 0.898 | 0.879 | 1.000 | | |
| C | BCOPI12 | 18 | d | 0.937 | 0.915 | 0.980 | 1.000 | |
| C | BCOPI13 | 18 | e | 0.981 | 0.964 | 0.947 | 0.978 | 1.000 |
| C | BCOPI9b | 18 | a | 1.000 | | | | |
| C | BCOPI10b | 18 | b | 0.943 | 1.000 | | | |
| C | BCOPI11b | 18 | c | 0.864 | 0.877 | 1.000 | | |
| C | BCOPI12b | 18 | d | 0.949 | 0.916 | 0.923 | 1.000 | |
| C | BCOPI13b | 18 | e | 0.971 | 0.954 | 0.905 | 0.968 | 1.000 |
| C | HETQ14 | 12 | a | 1.000 | | | | |
| C | HETQ15 | 11 | b | 0.944 | 1.000 | | | |
| C | HETQ16 | 12 | c | 0.809 | 0.745 | 1.000 | | |
| C | HETQ17 | 11 | d | 0.621 | 0.580 | 0.782 | 1.000 | |
| C | HETS14 | 6 | a | 1.000 | | | | |
| C | HETS15 | 4 | b | 0.096 | 1.000 | | | |
| C | HETS16 | 6 | c | -0.159 | -0.910 | 1.000 | | |
| C | HETS17 | 4 | d | -0.288 | 0.852 | -0.094 | 1.000 | |
| C | HETQ14b | 12 | a | 1.000 | | | | |
| C | HETQ15b | 11 | b | 0.692 | 1.000 | | | |
| C | HETQ16b | 12 | c | 0.816 | 0.642 | 1.000 | | |
| C | HETQ17b | 11 | d | 0.626 | 0.830 | 0.562 | 1.000 | |
| C | ICES 22 | 18 | a | 1.000 | | | | |
| C | ICES 27 | 18 | b | 0.671 | 1.000 | | | |
| C | ICES 24 | 18 | c | 0.757 | 0.599 | 1.000 | | |
| C | ICES 25 | 17 | d | 0.514 | 0.210 | 0.732 | 1.000 | |
| C | ICEO 22 | 18 | a | 1.000 | | | | |
| C | ICEO 27 | 18 | b | 0.498 | 1.000 | | | |
| C | ICEO 24 | 18 | c | 0.704 | 0.414 | 1.000 | | |
| C | ICEO 25 | 18 | d | 0.786 | 0.442 | 0.851 | 1.000 | |
| C | ICEF 22 | 18 | a | 1.000 | | | | |
| C | ICEF 27 | 18 | b | 0.433 | 1.000 | | | |
| C | ICEF 24 | 18 | c | 0.847 | 0.371 | 1.000 | | |
| C | ICEF 25 | 18 | d | 0.745 | 0.517 | 0.763 | 1.000 | |
| C | ICEC 22 | 18 | a | 1.000 | | | | |
| C | ICEC 27 | 18 | b | 0.705 | 1.000 | | | |
| C | ICEC 24 | 18 | c | 0.844 | 0.569 | 1.000 | | |
| C | ICEC 25 | 18 | d | 0.763 | 0.595 | 0.905 | 1.000 | |
| C | IREA 26 | 18 | a | 1.000 | | | | |
| C | IREA 23 | 18 | b | 0.413 | 1.000 | | | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| C | IREA 28 | 18 | c | 0.599 | 0.722 | 1.000 | | |
| C | IREA 29 | 18 | d | 0.656 | 0.480 | 0.634 | 1.000 | |
| C | IREB 26 | 18 | a | 1.000 | | | | |
| C | IREB 23 | 18 | b | 0.629 | 1.000 | | | |
| C | IREB 28 | 18 | c | 0.683 | 0.552 | 1.000 | | |
| C | IREB 29 | 18 | d | 0.607 | 0.409 | 0.575 | 1.000 | |
| C | IREC 26 | 17 | a | 1.000 | | | | |
| C | IREC 23 | 18 | b | 0.169 | 1.000 | | | |
| C | IREC 28 | 18 | c | 0.276 | 0.456 | 1.000 | | |
| C | IREC 29 | 18 | d | 0.210 | 0.392 | 0.748 | 1.000 | |
| C | IRED 26 | 17 | a | 1.000 | | | | |
| C | IRED 23 | 18 | b | 0.490 | 1.000 | | | |
| C | IRED 28 | 18 | c | 0.704 | 0.689 | 1.000 | | |
| C | IRED 29 | 18 | d | 0.790 | 0.615 | 0.874 | 1.000 | |
| C | IRESUM 26 | 18 | a | 1.000 | | | | |
| C | IRESUM 23 | 18 | b | 0.481 | 1.000 | | | |
| C | IRESUM 28 | 18 | c | 0.555 | 0.861 | 1.000 | | |
| C | IRESUM 29 | 18 | d | 0.628 | 0.964 | 0.896 | 1.000 | |
| D | BCOPP9 | 12 | a | 1.000 | | | | |
| D | BCOPP10 | 12 | b | 0.835 | 1.000 | | | |
| D | BCOPP11 | 12 | c | 0.932 | 0.912 | 1.000 | | |
| D | BCOPP12 | 12 | d | 0.843 | 0.966 | 0.922 | 1.000 | |
| D | BCOPP13 | 12 | e | 0.766 | 0.924 | 0.921 | 0.958 | 1.000 |
| D | BCOPO9 | 12 | a | 1.000 | | | | |
| D | BCOPO10 | 12 | b | 0.957 | 1.000 | | | |
| D | BCOPO11 | 12 | c | 0.971 | 0.981 | 1.000 | | |
| D | BCOPO12 | 12 | d | 0.947 | 0.972 | 0.957 | 1.000 | |
| D | BCOPO13 | 12 | e | 0.967 | 0.995 | 0.985 | 0.973 | 1.000 |
| D | BCOPI9 | 12 | a | 1.000 | | | | |
| D | BCOPI10 | 12 | b | 0.914 | 1.000 | | | |
| D | BCOPI11 | 12 | c | 0.951 | 0.952 | 1.000 | | |
| D | BCOPI12 | 12 | d | 0.915 | 0.989 | 0.936 | 1.000 | |
| D | BCOPI13 | 12 | e | 0.915 | 0.959 | 0.947 | 0.966 | 1.000 |
| D | BCOPI9b | 12 | a | 1.000 | | | | |
| D | BCOPI10b | 12 | b | 0.914 | 1.000 | | | |
| D | BCOPI11b | 12 | c | 0.951 | 0.952 | 1.000 | | |
| D | BCOPI12b | 12 | d | 0.915 | 0.989 | 0.936 | 1.000 | |
| D | BCOPI13b | 12 | e | 0.915 | 0.959 | 0.947 | 0.966 | 1.000 |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|-------------------|--------------------------|------------------------------------|---|--------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| D | HETQ14 | 12 | a | 1.000 | | | | |
| D | HETQ15 | 12 | b | 0.793 | 1.000 | | | |
| D | HETQ16 | 12 | c | 0.438 | 0.779 | 1.000 | | |
| D | HETQ17 | 12 | d | 0.816 | 0.876 | 0.579 | 1.000 | |
| D | HETQ14b | 12 | a | 1.000 | | | | |
| D | HETQ15b | 12 | b | 0.721 | 1.000 | | | |
| D | HETQ16b | 12 | c | 0.670 | 0.768 | 1.000 | | |
| D | HETQ17b | 12 | d | 0.420 | 0.966 | 0.721 | 1.000 | |
| D | ICES 22 | 12 | a | 1.000 | | | | |
| D | ICES 27 | 12 | b | 0.741 | 1.000 | | | |
| D | ICES 24 | 12 | c | 0.920 | 0.696 | 1.000 | | |
| D | ICES 25 | 12 | d | 0.641 | 0.392 | 0.543 | 1.000 | |
| D | ICEO 22 | 12 | a | 1.000 | | | | |
| D | ICEO 27 | 12 | b | 0.618 | 1.000 | | | |
| D | ICEO 24 | 12 | c | 0.719 | 0.759 | 1.000 | | |
| D | ICEO 25 | 12 | d | 0.438 | 0.834 | 0.483 | 1.000 | |
| D | ICEF 22 | 12 | a | 1.000 | | | | |
| D | ICEF 27 | 12 | b | 0.663 | 1.000 | | | |
| D | ICEF 24 | 12 | c | 0.636 | 0.546 | 1.000 | | |
| D | ICEF 25 | 12 | d | 0.950 | 0.748 | 0.664 | 1.000 | |
| D | ICEC 22 | 12 | a | 1.000 | | | | |
| D | ICEC 27 | 12 | b | 0.827 | 1.000 | | | |
| D | ICEC 24 | 12 | c | 0.854 | 0.805 | 1.000 | | |
| D | ICEC 25 | 12 | d | 0.870 | 0.759 | 0.724 | 1.000 | |
| D | IREA 26 | 12 | a | 1.000 | | | | |
| D | IREA 23 | 12 | b | 0.433 | 1.000 | | | |
| D | IREA 28 | 12 | c | 0.317 | 0.567 | 1.000 | | |
| D | IREA 29 | 12 | d | 0.678 | 0.462 | 0.480 | 1.000 | |
| D | IREB 26 | 12 | a | 1.000 | | | | |
| D | IREB 23 | 12 | b | 0.786 | 1.000 | | | |
| D | IREB 28 | 12 | c | 0.894 | 0.789 | 1.000 | | |
| D | IREB 29 | 12 | d | 0.814 | 0.736 | 0.845 | 1.000 | |
| D | IREC 26 | 12 | a | 1.000 | | | | |
| D | IREC 23 | 12 | b | 0.091 | 1.000 | | | |
| D | IREC 28 | 12 | c | -0.148 | 0.269 | 1.000 | | |
| D | IREC 29 | 12 | d | -0.010 | 0.527 | 0.835 | 1.000 | |
| D | IRED 26 | 12 | a | 1.000 | | | | |
| D | IRED 23 | 12 | b | 0.647 | 1.000 | | | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|--------|--------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| D | IREQ 28 | 12 | c | 0.405 | 0.635 | 1.000 | | |
| D | IREQ 29 | 12 | d | 0.686 | 0.589 | 0.758 | 1.000 | |
| D | IRESUM 26 | 12 | a | 1.000 | | | | |
| D | IRESUM 23 | 12 | b | 0.363 | 1.000 | | | |
| D | IRESUM 28 | 12 | c | 0.769 | 0.498 | 1.000 | | |
| D | IRESUM 29 | 11 | d | 0.665 | 0.614 | 0.872 | 1.000 | |
| E | BCOPP9 | 20 | a | 1.000 | | | | |
| E | BCOPP10 | 20 | b | 0.773 | 1.000 | | | |
| E | BCOPP11 | 20 | c | 0.926 | 0.843 | 1.000 | | |
| E | BCOPP12 | 20 | d | 0.878 | 0.563 | 0.889 | 1.000 | |
| E | BCOPP13 | 20 | e | 0.932 | 0.670 | 0.934 | 0.886 | 1.000 |
| E | BCOPO9 | 20 | a | 1.000 | | | | |
| E | BCOPO10 | 20 | b | 0.941 | 1.000 | | | |
| E | BCOPO11 | 20 | c | 0.908 | 0.887 | 1.000 | | |
| E | BCOPO12 | 20 | d | 0.912 | 0.903 | 0.977 | 1.000 | |
| E | BCOPO13 | 20 | e | 0.966 | 0.930 | 0.952 | 0.942 | 1.000 |
| E | BCOPI9 | 20 | a | 1.000 | | | | |
| E | BCOPI10 | 20 | b | 0.902 | 1.000 | | | |
| E | BCOPI11 | 20 | c | 0.897 | 0.872 | 1.000 | | |
| E | BCOPI12 | 20 | d | 0.880 | 0.852 | 0.960 | 1.000 | |
| E | BCOPI13 | 20 | e | 0.945 | 0.884 | 0.943 | 0.942 | 1.000 |
| E | BCOPI9b | 20 | a | 1.000 | | | | |
| E | BCOPI10b | 20 | b | 0.881 | 1.000 | | | |
| E | BCOPI11b | 20 | c | 0.887 | 0.869 | 1.000 | | |
| E | BCOPI12b | 20 | d | 0.870 | 0.776 | 0.889 | 1.000 | |
| E | BCOPP13b | 20 | e | 0.921 | 0.824 | 0.925 | 0.930 | 1.000 |
| E | HETQ14 | 9 | a | 1.000 | | | | |
| E | HETQ15 | 0 | b | * | * | | | |
| E | HETQ16 | 7 | c | 0.500 | * | 1.000 | | |
| E | HETQ17 | 1 | d | * | * | * | * | |
| E | HETS14 | 11 | a | 1.000 | | | | |
| E | HETS15 | 13 | b | 0.174 | 1.000 | | | |
| E | HETS16 | 13 | c | -0.171 | -0.171 | 1.000 | | |
| E | HETS17 | 17 | d | -0.103 | 0.808 | 0.031 | 1.000 | |
| E | HETQ14b | 9 | a | 1.000 | | | | |
| E | HETQ15b | 0 | b | * | * | | | |
| E | HETQ16b | 7 | c | 0.985 | * | 1.000 | | |
| E | HETQ17b | 1 | d | * | * | * | * | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| E | ICES 22 | 20 | a | 1.000 | | | | |
| E | ICES 27 | 20 | b | 0.869 | 1.000 | | | |
| E | ICES 24 | 20 | c | 0.847 | 0.734 | 1.000 | | |
| E | ICES 25 | 19 | d | 0.778 | 0.722 | 0.811 | 1.000 | |
| E | ICEO 22 | 20 | a | 1.000 | | | | |
| E | ICEO 27 | 20 | b | 0.595 | 1.000 | | | |
| E | ICEO 24 | 20 | c | 0.752 | 0.602 | 1.000 | | |
| E | ICEO 25 | 20 | d | 0.868 | 0.649 | 0.752 | 1.000 | |
| E | ICEF 22 | 20 | a | 1.000 | | | | |
| E | ICEF 27 | 20 | b | 0.729 | 1.000 | | | |
| E | ICEF 24 | 20 | c | 0.864 | 0.678 | 1.000 | | |
| E | ICEF 25 | 20 | d | 0.739 | 0.869 | 0.674 | 1.000 | |
| E | ICEC 22 | 20 | a | 1.000 | | | | |
| E | ICEC 27 | 20 | b | 0.806 | 1.000 | | | |
| E | ICEC 24 | 20 | c | 0.874 | 0.752 | 1.000 | | |
| E | ICEC 25 | 20 | d | 0.883 | 0.816 | 0.880 | 1.000 | |
| E | IREA 26 | 20 | a | 1.000 | | | | |
| E | IREA 23 | 20 | b | 0.195 | 1.000 | | | |
| E | IREA 28 | 20 | c | 0.394 | 0.908 | 1.000 | | |
| E | IREA 29 | 20 | d | 0.405 | 0.543 | 0.468 | 1.000 | |
| E | IREB 26 | 20 | a | 1.000 | | | | |
| E | IREB 23 | 20 | b | 0.782 | 1.000 | | | |
| E | IREB 28 | 20 | c | 0.629 | 0.649 | 1.000 | | |
| E | IREB 29 | 20 | d | 0.569 | 0.524 | 0.672 | 1.000 | |
| E | IREC 26 | 19 | a | 1.000 | | | | |
| E | IREC 23 | 20 | b | 0.335 | 1.000 | | | |
| E | IREC 28 | 20 | c | 0.670 | 0.404 | 1.000 | | |
| E | IREC 29 | 20 | d | 0.559 | 0.628 | 0.829 | 1.000 | |
| E | IRED 26 | 19 | a | 1.000 | | | | |
| E | IRED 23 | 20 | b | 0.540 | 1.000 | | | |
| E | IRED 28 | 20 | c | 0.791 | 0.685 | 1.000 | | |
| E | IRED 29 | 20 | d | 0.798 | 0.689 | 0.949 | 1.000 | |
| E | IRESUM 26 | 20 | a | 1.000 | | | | |
| E | IRESUM 23 | 19 | b | 0.199 | 1.000 | | | |
| E | IRESUM 28 | 20 | c | 0.191 | 0.991 | 1.000 | | |
| E | IRESUM 29 | 15 | d | 0.432 | 0.606 | 0.635 | 1.000 | |
| F | BCOPP9 | 14 | a | 1.000 | | | | |
| F | BCOPP10 | 14 | b | 0.731 | 1.000 | | | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| F | BCOPP11 | 14 | c | 0.901 | 0.864 | 1.000 | | |
| F | BCOPP12 | 14 | d | 0.795 | 0.903 | 0.896 | 1.000 | |
| F | BCOPP13 | 14 | e | 0.699 | 0.846 | 0.875 | 0.933 | 1.000 |
| F | BCOPO9 | 14 | a | 1.000 | | | | |
| F | BCOPO10 | 14 | b | 0.984 | 1.000 | | | |
| F | BCOPO11 | 14 | c | 0.985 | 0.959 | 1.000 | | |
| F | BCOPO12 | 14 | d | 0.989 | 0.968 | 0.987 | 1.000 | |
| F | BCOPO13 | 14 | e | 0.984 | 0.988 | 0.955 | 0.976 | 1.000 |
| F | BCOPI9 | 14 | a | 1.000 | | | | |
| F | BCOPI10 | 14 | b | 0.917 | 1.000 | | | |
| F | BCOPI11 | 14 | c | 0.975 | 0.920 | 1.000 | | |
| F | BCOPI12 | 14 | d | 0.974 | 0.914 | 0.974 | 1.000 | |
| F | BCOPI13 | 14 | e | 0.969 | 0.926 | 0.954 | 0.980 | 1.000 |
| F | BCOPI9b | 14 | a | 1.000 | | | | |
| F | BCOPI10b | 14 | b | 0.899 | 1.000 | | | |
| F | BCOPI11b | 14 | c | 0.970 | 0.928 | 1.000 | | |
| F | BCOPI12b | 14 | d | 0.955 | 0.921 | 0.962 | 1.000 | |
| F | BCOPP13b | 14 | e | 0.946 | 0.918 | 0.976 | 0.972 | 1.000 |
| F | HETQ14 | 14 | a | 1.000 | | | | |
| F | HETQ15 | 14 | b | 0.880 | 1.000 | | | |
| F | HETQ16 | 14 | c | 0.776 | 0.730 | 1.000 | | |
| F | HETQ17 | 14 | d | 0.712 | 0.842 | 0.765 | 1.000 | |
| F | HETQ14b | 14 | a | * | | | | |
| F | HETQ15b | 14 | b | * | 1.000 | | | |
| F | HETQ16b | 14 | c | * | 0.591 | 1.000 | | |
| F | HETQ17b | 14 | d | * | 0.974 | 0.590 | 1.000 | |
| F | ICES 22 | 14 | a | 1.000 | | | | |
| F | ICES 27 | 14 | b | 0.617 | 1.000 | | | |
| F | ICES 24 | 13 | c | 0.757 | 0.856 | 1.000 | | |
| F | ICES 25 | 13 | d | 0.539 | 0.889 | 0.821 | 1.000 | |
| F | ICEO 22 | 14 | a | 1.000 | | | | |
| F | ICEO 27 | 14 | b | 0.797 | 1.000 | | | |
| F | ICEO 24 | 14 | c | 0.796 | 0.907 | 1.000 | | |
| F | ICEO 25 | 14 | d | 0.794 | 0.868 | 0.717 | 1.000 | |
| F | ICEF 22 | 14 | a | 1.000 | | | | |
| F | ICEF 27 | 14 | b | 0.781 | 1.000 | | | |
| F | ICEF 24 | 13 | c | 0.604 | 0.543 | 1.000 | | |
| F | ICEF 25 | 14 | d | 0.901 | 0.689 | 0.772 | 1.000 | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|-------------------|--------------------------|------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| F | ICEC 22 | 14 | a | 1.000 | | | | |
| F | ICEC 27 | 14 | b | 0.873 | 1.000 | | | |
| F | ICEC 24 | 14 | c | 0.877 | 0.905 | 1.000 | | |
| F | ICEC 25 | 14 | d | 0.907 | 0.913 | 0.868 | 1.000 | |
| F | IREA 26 | 14 | a | 1.000 | | | | |
| F | IREA 23 | 14 | b | 0.648 | 1.000 | | | |
| F | IREA 28 | 14 | c | 0.733 | 0.712 | 1.000 | | |
| F | IREA 29 | 14 | d | 0.789 | 0.596 | 0.817 | 1.000 | |
| F | IREB 26 | 14 | a | 1.000 | | | | |
| F | IREB 23 | 14 | b | 0.808 | 1.000 | | | |
| F | IREB 28 | 14 | c | 0.862 | 0.812 | 1.000 | | |
| F | IREB 29 | 14 | d | 0.789 | 0.746 | 0.906 | 1.000 | |
| F | IREC 26 | 13 | a | 1.000 | | | | |
| F | IREC 23 | 14 | b | 0.914 | 1.000 | | | |
| F | IREC 28 | 12 | c | 0.464 | 0.682 | 1.000 | | |
| F | IREC 29 | 14 | d | 0.805 | 0.815 | 0.845 | 1.000 | |
| F | IRED 26 | 13 | a | 1.000 | | | | |
| F | IRED 23 | 14 | b | 0.776 | 1.000 | | | |
| F | IRED 28 | 12 | c | 0.613 | 0.575 | 1.000 | | |
| F | IRED 29 | 14 | d | 0.868 | 0.696 | 0.781 | 1.000 | |
| F | IRESUM 26 | 14 | a | 1.000 | | | | |
| F | IRESUM 23 | 14 | b | 0.770 | 1.000 | | | |
| F | IRESUM 28 | 14 | c | 0.863 | 0.811 | 1.000 | | |
| F | IRESUM 29 | 14 | d | 0.884 | 0.800 | 0.957 | 1.000 | |
| G | BCOPP9 | 26 | a | 1.000 | | | | |
| G | BCOPP10 | 26 | b | 0.733 | 1.000 | | | |
| G | BCOPP11 | 26 | c | 0.801 | 0.856 | 1.000 | | |
| G | BCOPP12 | 26 | d | 0.781 | 0.612 | 0.801 | 1.000 | |
| G | BCOPP13 | 26 | e | 0.893 | 0.794 | 0.858 | 0.845 | 1.000 |
| G | BCOPO9 | 26 | a | 1.000 | | | | |
| G | BCOPO10 | 26 | b | 0.961 | 1.000 | | | |
| G | BCOPO11 | 26 | c | 0.935 | 0.955 | 1.000 | | |
| G | BCOPO12 | 26 | d | 0.949 | 0.961 | 0.967 | 1.000 | |
| G | BCOPO13 | 26 | e | 0.961 | 0.964 | 0.913 | 0.940 | 1.000 |
| G | BCOPI9 | 26 | a | 1.000 | | | | |
| G | BCOPI10 | 26 | b | 0.873 | 1.000 | | | |
| G | BCOPI11 | 26 | c | 0.875 | 0.939 | 1.000 | | |
| G | BCOPI12 | 26 | d | 0.897 | 0.851 | 0.902 | 1.000 | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|-------------------|--------------------------|------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| G | BCOPI13 | 26 | e | 0.953 | 0.891 | 0.898 | 0.956 | 1.000 |
| G | BCOPI9b | 26 | a | 1.000 | | | | |
| G | BCOPI10b | 26 | b | 0.873 | 1.000 | | | |
| G | BCOPI11b | 26 | c | 0.875 | 0.939 | 1.000 | | |
| G | BCOPI12b | 26 | d | 0.897 | 0.851 | 0.902 | 1.000 | |
| G | BCOPP13b | 26 | e | 0.953 | 0.891 | 0.898 | 0.956 | 1.000 |
| G | HETQ14 | 26 | a | 1.000 | | | | |
| G | HETQ15 | 26 | b | 0.755 | 1.000 | | | |
| G | HETQ16 | 26 | c | 0.221 | 0.450 | 1.000 | | |
| G | HETQ17 | 26 | d | 0.492 | 0.692 | 0.704 | 1.000 | |
| G | HETQ14b | 26 | a | 1.000 | | | | |
| G | HETQ15b | 26 | b | 0.721 | 1.000 | | | |
| G | HETQ16b | 26 | c | 0.771 | 0.638 | 1.000 | | |
| G | HETQ17b | 26 | d | 0.675 | 0.765 | 0.591 | 1.000 | |
| G | ICES 22 | 26 | a | 1.000 | | | | |
| G | ICES 27 | 26 | b | 0.779 | 1.000 | | | |
| G | ICES 24 | 26 | c | 0.690 | 0.736 | 1.000 | | |
| G | ICES 25 | 26 | d | 0.626 | 0.461 | 0.560 | 1.000 | |
| G | ICEO 22 | 26 | a | 1.000 | | | | |
| G | ICEO 27 | 26 | b | 0.757 | 1.000 | | | |
| G | ICEO 24 | 26 | c | 0.770 | 0.695 | 1.000 | | |
| G | ICEO 25 | 26 | d | 0.719 | 0.692 | 0.764 | 1.000 | |
| G | ICEF 22 | 26 | a | 1.000 | | | | |
| G | ICEF 27 | 26 | b | 0.607 | 1.000 | | | |
| G | ICEF 24 | 26 | c | 0.748 | 0.394 | 1.000 | | |
| G | ICEF 25 | 26 | d | 0.594 | 0.494 | 0.654 | 1.000 | |
| G | ICEC 22 | 26 | a | 1.000 | | | | |
| G | ICEC 27 | 26 | b | 0.856 | 1.000 | | | |
| G | ICEC 24 | 26 | c | 0.830 | 0.745 | 1.000 | | |
| G | ICEC 25 | 26 | d | 0.778 | 0.751 | 0.803 | 1.000 | |
| G | IREA 26 | 26 | a | 1.000 | | | | |
| G | IREA 23 | 26 | b | 0.496 | 1.000 | | | |
| G | IREA 28 | 26 | c | 0.685 | 0.518 | 1.000 | | |
| G | IREA 29 | 26 | d | 0.709 | 0.625 | 0.704 | 1.000 | |
| G | IREB 26 | 26 | a | 1.000 | | | | |
| G | IREB 23 | 26 | b | 0.525 | 1.000 | | | |
| G | IREB 28 | 26 | c | 0.628 | 0.526 | 1.000 | | |
| G | IREB 29 | 26 | d | 0.664 | 0.470 | 0.824 | 1.000 | |

**Interlaboratory Correlation Coefficients from the
EC/HO Validation Study (Balls et al. 1995)**

| Chemical Category | <i>In Vitro</i> Endpoint | No. Samples Tested <i>In Vitro</i> | Interlaboratory Correlation of <i>In Vitro</i> Data | | | | | |
|----------------------|-----------------------------|---------------------------------------|---|-------|-------|-------|-------|-------|
| | | | Lab | Lab a | Lab b | Lab c | Lab d | Lab e |
| G | IREC 26 | 26 | a | 1.000 | | | | |
| G | IREC 23 | 26 | b | 0.137 | 1.000 | | | |
| G | IREC 28 | 26 | c | 0.245 | 0.214 | 1.000 | | |
| G | IREC 29 | 26 | d | 0.342 | 0.101 | 0.808 | 1.000 | |
| G | IREC 26 | 26 | a | 1.000 | | | | |
| G | IREC 23 | 26 | b | 0.539 | 1.000 | | | |
| G | IREC 28 | 26 | c | 0.712 | 0.507 | 1.000 | | |
| G | IREC 29 | 26 | d | 0.790 | 0.613 | 0.906 | 1.000 | |
| G | IRESUM 26 | 26 | a | 1.000 | | | | |
| G | IRESUM 23 | 26 | b | 0.527 | 1.000 | | | |
| G | IRESUM 28 | 26 | c | 0.693 | 0.793 | 1.000 | | |
| G | IRESUM 29 | 25 | d | 0.626 | 0.696 | 0.716 | 1.000 | |

A = Full set of chemicals; B= Water soluble; C = Water insoluble; D = Surfactants; E = Solids; F = Solutions; G = Liquids

The numbers 1-38 against each endpoint in the Table refer to the laboratories which conducted each particular test. Laboratory 36 left the study without submitting any results

* = No data

BCOPP = Permeability; BCOPO = Opacity; BCOPI = Index; BCOPIb = Index, cut-off at 200

HETQ = Q Score; HETS = S Score; HETQB = Q Score; cutoff at 2; HETSB = S Score, cutoff at 2

ICES = Swelling; ICEO = Opacity; ICEF = Fluorescein retention; ICEC = Irritation Index

IREA = Opacity (1 hr); IREB = Opacity (4 hr); IREC = Swelling (1 hr); IRED = Swelling (4 hr); IRESUM = Summary score

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Appendix G

**Additional BCOP Studies Received in Response to
Federal Register Notices (Vol. 69, No. 57, pp. 13859-13861) and
(Vol. 70, No. 38, pp. 9661-9662)**

- G1 Dataset Received from S.C. Johnson & Son, Inc. in Support of Cuellar et al. (2004) Poster Presentation..... G-3**
- G2 Dataset Received from S.C. Johnson & Son, Inc. in Support of Cuellar et al. (2002) Poster Presentation..... G-43**
- G3 Dataset Received from S.C. Johnson & Son, Inc. in Support of Gran et al. (2003) Poster Presentation G-61**
- G4 Dataset Received from L'OREAL Advanced Research for an In-house Porcine Corneal Opacity and Permeability Assay G-91**
- G5 Supporting Analyses Received from IIVS for Gettings et al. (1996) Study G-101**
- G6 Dataset Received from Johnson & Johnson Pharmaceutical Research and Development – A Division of Janssen Pharmaceutica N.V. (Laboratory No. 9 in Gautheron et al. 1994) G-191**
- G7 Dataset Received from Johnson & Johnson Pharmaceutical Research and Development – A Division of Janssen Pharmaceutica N.V. (BCOP Tests With Young vs. Old Corneas) G-251**

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Appendix G1

**Dataset Received from S.C. Johnson & Son, Inc. in Support of
Cuellar et al. (2004) Poster Presentation**

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A FAMILY COMPANY

S.C. Johnson & Son, Inc.
Worldwide Consumer Products, RD & E
Global Safety Assessment and Regulatory Affairs, Product Toxicology
MS 139 1525 Howe Street, Racine WI 53403

August 27, 2004

Christina Inhof, MSPH
Senior Project Coordinator/Technical Writer ILS, Inc.
NICEATM
P.O. Box 12233
NIEHS MD EC-17
Research Triangle Park, NC 27709

Christina,

Hi! How are you? I am happy to be submitting data on solvents and simple fragrance formulations, which were discussed in the poster citation listed below:

Cuellar, N., Lloyd, P.H., Swanson J.E., Merrill, J.C., Mun, G., Harbell, J.W. and Bonnette, K.L. (2004) Phase Two: Evaluating the eye irritancy of solvents in a simple fragrance mixture with the bovine corneal opacity and permeability (BCOP) assay. *The Toxicologist* 78(S-1): Abstract No. 1306.

Included with this submission are the following documents:

1. Cover letter
2. Poster text
3. Poster graphs
4. Histology slides
5. Coded formula spreadsheet

Study Protocols:

Modified Draize protocol was used for the in-vivo studies. Four animals were treated per sample (3 for histopathology and 1 animal for recovery). Each animal received a 0.1 ml dose of the formula in the conjunctival sac of the right eye. The left eye served as the untreated control. All animals were scored at 1, 4, and 24 hours after dosing. Histology was conducted on 3 of the 4 animals.

Standard BCOP protocol was used for the in-vitro work at IIVS. The first BCOP study required exposure times of 1 and 3 minutes with a post exposure of 20 hours to compliment the timing in the animal. The second BCOP study utilized a 3-minute exposure time with

post exposures of 2 to 4 hours to understand effects using standard post exposure times. Histology was conducted on all corneas. Since the 1-minute exposure did not produce extensive lesions, only the 3-minute exposure was evaluated in the second study. Only the 3-minute exposure data are reported in this poster.

Formula Spreadsheet:

The formulas listed in this spreadsheet are coded similarly to formulas listed in the poster. Test material number is the unique sample number and the group name denotes formula description. Raw materials are listed followed by their percentages in each formula.

Poster:

Fragrance poster not included. John Harbell previously sent it to you.

Poster Text:

A word document consisting of poster text and tables is included in this submission for ease of reading. The poster contained a wealth of information, thus limited visibility. This document highlights where the graphs and histology slides should be inserted for ease of understanding. Please note: Table one has improved coloring/formatting on the poster.

Poster Graphs:

Poster graphs should be referenced on page 10.

Histology Slides:

Histology slides should be referenced on page 12.

Data Worksheet:

The data worksheet is not included for this submission. GHS and EPA classification of results was not possible due to lack of animals. Only 1 of the 4 animals was carried out for recovery purposes. The remaining 3 animals were used for histopathology.

Summary:

Solvents have a major impact on the ocular irritation potential of fragrance mixtures. Both the degree and the time-course of the irritation can be impacted by the solvent. Over the three harvest times, the BCOP assay was able to identify histological changes that characterize the treatment groups into severe (ethanol alone), moderate (2-stages), and mild categories. One treatment group (fragrance + DPG) was over predicted by the BCOP compared to the in vivo assay. The time course of the tissue scores in vivo was similar to

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the time course of the histological changes in BCOP. The BCOP model was more consistent in its response to a given treatment than the in vivo model.

If you have any questions or comments on this data set, please feel free to contact either Judith Swanson or myself at the following:

Nicole Cuellar
(262) 260-6916
ncuellar@scj.com

Judith Swanson
(262) 260-2688
jeswanso@scj.com

Sincere regards,

A handwritten signature in cursive script that reads "Nicole Cuellar". The signature is written in black ink and is positioned above the typed name and title.

Nicole Cuellar
Sr. Research Toxicologist

POSTER TEXT FOR S.C. JOHNSON SUBMISSION DATED AUGUST 27, 2004

TITLE:

PHASE TWO: EVALUATING THE EYE IRRITANCY OF SOLVENTS IN A SIMPLE FRAGRANCE MIXTURE WITH THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY

N Cuellar¹, P H Lloyd², J E Swanson¹, J C Merrill³, G Mun³, J W Harbell³, and K L Bonnette⁴. ¹S.C. Johnson & Son, Inc. Racine, WI, USA; ²SCJ EURAFNE Ltd. Egham, Surrey, England; ³Institute for In Vitro Sciences, Inc. Gaithersburg, MD, USA; ⁴Charles River Laboratories, Inc. Spencerville, Ohio, USA.

ABSTRACT:

Fragrances are complex mixtures used in many consumer products. Organic solvents, such as ethanol, are major components of fragrance formulations functioning mainly as solubilizers and fragrance delivery mechanisms. In Phase One (Cuellar et al, 2003), the BCOP assay and primary eye irritation study (EPA-OPPTS 870.2400) were conducted using simple fragrance mixtures containing six commonly used solvents. The corneal depth of injury was assessed histologically both in vitro and in vivo. In the BCOP assay, corneas were exposed for 1 and 3 minutes, rinsed and incubated for 20 hours before the opacity and permeability endpoints were assessed. In vivo, animals were scored at 1, 4, and 24 hours. Individual solvents impacted the level of irritation of these formulations. Phase Two evaluated the time course of lesion development after exposure in the BCOP assay and determined those early lesion that would be predictive of damage observed after 20+ hours in vitro and in vivo. Bovine corneas were exposed for 3 minutes, rinsed, and incubated for 2 or 4 hours before the endpoints were assessed and tissue taken for histology. In vivo, certain solvents increased the rate of lesion development but not the overall intensity or duration compared to the fragrance alone. Other solvents decreased the overall intensity and duration. The BCOP assay showed a generally similar pattern of lesion development. Those combinations that showed opacity at 4 hours in vivo, showed epithelial and stromal lesion in the BCOP by 4 hours post-exposure. Fragrance alone was slower to develop opacity in vivo and required the 20 hour post-exposure to produce appreciable lesions in vitro. These data suggest that our standard post exposure (2 hour) can be predictive of irritation potential of fragrance/solvent mixtures.

INTRODUCTION:

The Bovine Corneal Opacity and Permeability (BCOP) Assay is routinely used by S.C. Johnson and Son as a tool for evaluating air fresheners for potential ocular irritation. Depending on the type of air freshener, other components may be added to solubilize a fragrance or to facilitate fragrance delivery mechanisms. In Phase I of this study (Cuellar et al., 2003), the BCOP assay and the primary eye irritation assay (EPA OPPTS 870.2400) were conducted using simple fragrance mixtures containing six commonly used solvents. As with Cuellar et al. (2002), Cuellar et al. (2003) found that solvents had an impact on the ocular irritation potential of fragrance mixtures. Based on this information, we examined the use of the BCOP at our standard post exposure times (2 and 4 hour) in comparison with Phase I post exposure times both in vitro (20 hour) and in vivo (24 hour) for rate, degree and intensity of irritation potential of the same fragrance mixtures.

Histological examination is necessary to understand the degree and depth of injury associated with the permeability and opacity measurements with diverse chemical classes or mixtures (Curren et al., 2000). Depth of injury has been shown to be a predictor of the degree and duration (reversibility) of ocular injury by Maurer et al. (2002) and Jester et al. (1998). Histological evaluation was used in Cuellar et al. (2002) to define the degree of injury to a reference sample and also to set the upper bound limit for other formulations of that type. Cuellar et al. (2003), demonstrated that permeability and opacity scores in the BCOP assay and the MAS scores in vivo paralleled the depth of injury and cellular changes seen histologically from both BCOP and in vivo samples. In Phase II of this study, we evaluated the progression of lesion development after exposure in the BCOP assay. Additionally, we determined specific early lesions that would be predictive of damage observed after 20+ hours in vitro and in vivo in the same fragrance mixtures.

MATERIALS AND METHODS:

| Phase | In – vitro (BCOP) | In-vivo |
|-------|---|------------------------|
| One | 3 & 10 minute exposure, 20 hour post-exposure | 1, 4, & 24 hour scored |
| Two | 3 minute exposure, 2 & 4 hour post-exposure | Not repeated |

IN VITRO - BCOP:

Bovine Eyes

The BCOP assay was performed following the methods of Sina et al. (1995). Bovine eyes were obtained from a local abattoir as a by-product from freshly slaughtered animals. The eyes were grossly examined for damage and those exhibiting defects were discarded. The corneas were excised such that a 2 to 3 mm rim of sclera was present around the cornea. The corneas were mounted in the holders and the two chambers filled with Minimum Essential Medium Eagle (MEM) without phenol red, supplemented with 1% fetal bovine serum (complete MEM). The corneal holders were incubated at $32 \pm 1^\circ\text{C}$ for a minimum of 1 hour.

Bovine Corneal Opacity and Permeability Assay

After a minimum of 1 hour of incubation, the medium replaced in both chambers and the opacity was determined for each cornea using a Spectro Designs OP-KIT opacimeter. Three corneas, whose opacity readings were close to the median opacity for all the corneas, were selected as the negative control corneas. The medium was then removed from the anterior chamber and replaced with either the test article, positive control, or negative control.

Testing Procedure

Each test article was administered neat to the BCOP test system. An aliquot of 750 μl of either the test article, positive control (100% ethanol), or negative control (deionized water) was introduced into the anterior chamber while slightly rotating the holder to ensure uniform distribution over the cornea. Six corneas were used for each test article (three corneas per each post-exposure incubation period of 2 or 4 hours) were exposed for three minutes at $32 \pm 1^\circ\text{C}$. Six corneas were treated with the negative control (three corneas per each post-exposure incubation period of 2 and 4 hours) were exposed for ten minutes at $32 \pm 1^\circ\text{C}$. Three corneas were treated with the positive control for 10 minutes $32 \pm 1^\circ\text{C}$. After the exposure periods, the test or control article treatments were removed. The corneal surface was washed at least three times to ensure total removal of the test or control articles. The corneas exposed were returned to the incubator for approximately 2 hours (test articles, positive and negative controls) and 4 hours (test articles and negative controls). After this incubation (2 or 4 hours), the final measure of opacity was obtained. Corneas cultured for 4 hours were refeed immediately prior to the final measure of opacity. The values obtained at this second opacity measurement are presented in the report and were used in calculating the corneal opacity.

After the second opacity measurement was performed, the medium was removed from both chambers of the holder. The posterior chamber was refilled with complete MEM, and 1 ml of a 4 mg/ml fluorescein solution was added to the anterior chamber. The corneas were then incubated in a horizontal position (anterior side up) for approximately 90 minutes at $32 \pm 1^\circ\text{C}$. After the incubation, an aliquot of 360 μl from each chamber was placed into the designated well on a 96-well plate. The optical density at 490 nm (OD_{490}) was determined using a Molecular Devices *V*max kinetic microplate reader.

Opacity Measurement: The change in opacity for each cornea was calculated by subtracting the pre-treatment opacity readings from the final opacity readings. The corrected opacity value of each cornea was calculated by subtracting the average change in opacity of the negative control corneas from that of each treated cornea. The mean opacity values of each treatment group were then calculated.

Permeability Measurement: The corrected OD₄₉₀ was calculated by subtracting the mean OD₄₉₀ of the negative control corneas from the OD₄₉₀ value of each treated cornea. The mean OD₄₉₀ values of each treatment group were then calculated.

Histology

The corneas were placed in individual, prelabelled cassettes and fixed for at least 24 hours in 10% buffered formalin. The fixed corneas were transferred to Pathology Associates - A Charles River Company (Frederick, MD) for embedding, sectioning and staining. Each slide was then stained with hematoxylin and eosin. Slides were returned to the Institute for In Vitro Sciences, Inc. for evaluation. Photomicrographs and thickness measurements were prepared using a Spot Insight (Spot Diagnostic Instruments) digital camera and associated software.

IN VIVO:

The acute eye irritation study was conducted in accordance with the US EPA, Health Effects Test Guidelines (OPPTS 870.2400). Four New Zealand White rabbits were treated per sample (three animals for histopathology and one animal for recovery). Each animal received a 0.1mL dose of the appropriate test article in the conjunctival sac of the right eye. The left eye of each animal remained untreated and served as the control. Eyes were macroscopically scored at 1, 4, and 24 hours after dosing for both histopathology and recovery animals according to the Ocular Grading System based on Draize (1959). The group mean irritation score was then calculated for each scoring interval based on the number of animals initially dosed in each group. The calculated group mean ocular irritation scores for each interval were used to classify the test article according to the Ocular Evaluation Criteria of Kay and Calandra (1962).

Histology:

The test and control eyes were collected, identified, and placed in 10% neutral buffered formalin for fixation. The sections were processed histologically (embedded in paraffin, cut, and stained with hematoxylin and eosin). The histology was conducted by HistoTechniques (Powell, Ohio). The resulting slides were examined by a board certified pathologist (Dr. J. Dale Thurman, Senior Director of Pathology). No tissues were retained or examined for the recovery animals. Subsequently, slides were scored for cellular changes (paralleling those scored for bovine corneas) and photographed by one of us (JHW). These observations are reported in Table 1.

RESULTS:

The histological results of the BCOP and acute eye irritation assay for thirteen treatment groups are presented in Tables 1-3. The numerical scores of the BCOP and acute eye irritation assay for the thirteen treatment groups are graphically presented in Figures 1-6. The thirteen treatment groups include fragrance only, six solvents only, and six solvent/fragrance mixtures. The simple fragrance alone consists of 25% of each of the following fragrance components: benzyl acetate, linalool, dihydroxymyrcenol, and Verdox. The solvents consist of 100% of each of the following solvents: ethanol (ETOH), Dowanol DPM (DPM), Isopar M, dipropylene glycol (DPG), carbitol, and benzyl benzoate (BB). The solvent/fragrance mixtures (solvent + F, e.g. ETOH+F) consist of 80% fragrance mixture (20% of each fragrance component) and 20% of each solvent. Fragrance components and solvents were chosen because they are more frequently used in fragrance formulations.

Table 1 shows the depth of injury, cellular change and opacity score x area score for each animal for the thirteen treatment groups. Characteristic lesions are grouped together by severity of injury and cellular change from Group I (least irritating) to Group IV (most irritating). Days to clear for the recovery animal is listed below.

Table 1. In-Vivo Histological Summary

| Group | Characteristic Lesions | Opacity Score x Area Score for each animal | | | | | |
|-------|---|--|-------------------------|--|--|-----------------------|--|
| | | 2x4 | 2x3 | 2x2 | 2x1 | 1x1 | 0x0 |
| IV | 1) Complete or nearly complete loss of epithelium over the cornea 2) Marked inflammatory infiltrate extending well into the corneal stroma 3) Loss of keratocytes in the upper stroma 4) Increased frequency of enlarged keratocytes in the mid stroma | ETOH ETOH ETOH | | | | | |
| III | 1) Focal, full thickness loss of epithelium 2) Marked inflammatory infiltrate restricted to the edge of the cornea 3) Increased frequency of enlarged keratocytes in the upper stroma under the epithelial lesion | Frag- rance ETOH+F DPM+F | DPG+F Carbitol +F | Frag- rance Carbitol+ F BB+F | Frag- rance Carbitol+F DPM DPM | | |
| II | 1) Small focus of epithelial loss or thinning 2) Limited inflammatory infiltrate 3) Slight increase in enlarged keratocytes | | DPM Carbitol | Carbitol | ETOH+F DPM+F Carbitol | Isopar M+F BB+F | DPG+F DPG |
| I | 1) Epithelium was intact or just slightly thinned 2) Little or no inflammatory infiltrate 3) No enlarged keratocytes | | | | | | Isopar M Isopar M DPG DPG BB BB BB ETOH+F DPM+F Isopar M+F Isopar M+F DPG+F BB+F ETOH Isopar M |

Days to clear (for the remaining animal in the treatment group)

>28 days - ETOH

7 Days - Fragrance, ETOH+F, DPM+F, Carbitol +F

3 Days – DPG+F, DPM, DPG, Carbitol

2 Days – Isopar+F, BB+F

1 Day – Isopar M, BB

Table 2 demonstrates the description of the characteristic lesions seen in the epithelial layer of the corneas of the 13 treatment samples in the BCOP assay at three different post-exposure times (2, 4, and 20 hours). Corneas are grouped by severity of the depth of injury and cellular changes from Group E (most irritating) to Group A (least irritating).

Table 2. Summary of the epithelial layer changes in the BCOP

| In Vitro | Characteristic Lesions | 2-hour post-exposure | 4-hour post-exposure | 20-hour post-exposure |
|----------|--|---------------------------------------|--|---|
| Group E | Full thickness loss or separation on >50% of the corneal surface | ETOH | ETOH | ETOH DPM + F (2) Carbitol + F |
| Group D | Full thickness loss/separation on <50% of the corneal surface but substantial damage to wing and basal cell layers | ETOH+F(2) DPG+F Carbitol+F | ETOH+F Carbitol+F(2)) | Fragrance ETOH+F DPG+F (2) DPM+F (1) |
| Group C | Little or no full thickness loss but damage well into the wing and basal cell layers (may include nuclear changes and cytoplasmic vacuolization) | ETOH+F(1) DPM+F DPM Carbitol | DPM+F DPG+F Carbitol+ F(1) DPM Carbitol | DPG+F(1) BB+F DPM Carbitol |
| Group B | Loss of the full squamous cell layer with occasional damage into the wing cell layer. No full thickness loss | Fragrance Isopar M+F | Fragrance | Isopar M+F |
| Group A | Similar to the time-matched negative control epithelium or with some loss/loosening of the surface squamous epithelial layers | BB+F Isopar M DPG BB | Isopar M+F BB+F Isopar M DPG BB | Isopar M DPG BB |

Table 3 demonstrates the description of the characteristic lesions seen in the stroma of the corneas of the 13 treatment samples in the BCOP assay at three different post-exposure times (2, 4, and 20 hours). Corneas are grouped by severity of the depth of injury and cellular changes from Group E (most irritating) to Group A (least irritating).

Table 3. Summary of the Stromal Lesions in the BCOP.

| In Vitro | Characteristic Lesions | 2-hour post-exposure | 4-hour post-exposure | 20-hour post-exposure |
|----------|--|---|---|--|
| Group E | <ol style="list-style-type: none"> 1) Thickness: Appreciably thicker than the time-matched controls 2) Stromal matrix vacuolization: Marked to 50% depth 3) Keratocytes: <ol style="list-style-type: none"> a. Upper stroma: Marked cell loss and/or increase in nuclear changes (degeneration, pyknosis, vacuolization or abnormal chromatin condensation) to \leq 50% depth b. Nuclear enlargement/ cytoplasmic eosinophilia: Marked or Moderate to \geq 50% depth | | ETOH | ETOH |
| Group D | <ol style="list-style-type: none"> 1) Thickness: Thicker than the time-matched controls 2) Stromal matrix vacuolization: Some marked but moderate to 50% depth 3) Keratocytes: <ol style="list-style-type: none"> a. Upper stroma: Moderate cell loss and/or increase in nuclear changes (degeneration, pyknosis, vacuolization or abnormal chromatin condensation) to \leq 25% depth b. Nuclear enlargement/ cytoplasmic eosinophilia: Moderate/Marked to 50% depth | | ETOH+F DPG+F Carbitol+F(2) | Fragrance ETOH+F DPM+F Carbitol+F |
| Group C | <ol style="list-style-type: none"> 1) Thickness: Thicker than the time-matched controls 2) Stromal matrix vacuolization: Moderate to \leq 50% depth 3) Keratocytes: <ol style="list-style-type: none"> a. Upper stroma: Slight cell loss and/or increase in nuclear changes (degeneration, pyknosis, vacuolization or abnormal chromatin condensation) to \leq 25% depth b. Nuclear enlargement/ cytoplasmic eosinophilia: Moderate to \leq 50% depth | Carbitol+F DPM Carbitol | DPM+F DPM Carbitol | DPG+F Carbitol DPM |
| Group B | <ol style="list-style-type: none"> 1) Thickness: Slightly thicker than the time-matched controls 2) Stromal matrix vacuolization: Moderate to \leq 30% depth 3) Keratocytes: <ol style="list-style-type: none"> a. Upper stroma: Normal (no cell loss or nuclear degeneration) b. Nuclear changes (enlargement)/ cytoplasmic eosinophilia: Moderate increase to \leq 30% depth | ETOH+F ETOH | | BB+F |
| Group A | <ol style="list-style-type: none"> 1) Thickness: Similar to the time-matched controls 2) Stromal matrix vacuolization: Slight or less increase to \leq 30% depth 3) Keratocytes: | Fragrance DPM+F Isopar M+F DPG+F | Fragrance Isopar M+F DPG+F Carbitol+F(1) | Isopar M + F Isopar M DPG BB |

| In Vitro | Characteristic Lesions | 2-hour post-exposure | 4-hour post-exposure | 20-hour post-exposure |
|----------|--|-------------------------------|-------------------------------|-----------------------|
| | a. Upper stroma: Normal (no cell loss or nuclear degeneration) b. Nuclear changes (enlargement)/ cytoplasmic eosinophilia: Slight or less increase to $\leq 20\%$ depth | BB+F Isopar M DPG BB | BB+F Isopar M DPG BB | |

GRAPHICAL RESULTS: Appended Below

Figure 1. In-vivo Results – Opacity

Figure 2. In-vivo Results – Opacity X Area

Figure 3. In-vivo Results - MAS scores

Figure 4. BCOP Opacity Scores

Figure 5. BCOP Permeability Scores

Figure 6. BCOP In vitro Scores

RESULTS:

- Alone, the fragrance induced only slight corneal changes until 24 hours after treatment in vivo. In the BCOP assay, the similar time course was observed.
- Impact of Solvent:
 1. The addition of ethanol or DPM to the fragrance increased the in-vivo corneal scores (opacity and area) at 4 hours compared to the fragrance alone.
 2. The addition of ethanol, DPM, DPG, or carbitol to the fragrance increased the BCOP opacity and permeability scores (and histological changes) at 2 and 4 hours compared to fragrance alone.
 3. The addition of IsoPar M to the fragrance showed a strong mitigating effect on the overall irritancy of the fragrance in-vivo and BCOP assays.
 4. The addition of BB to the fragrance slowed the onset and reduced the overall irritation (in vivo) and BCOP opacity and permeability scores (and histological changes).
- The rapid onset of irritancy to the cornea (in-vivo) of ethanol, DPM, and carbitol was correctly predicted by the BCOP at 2 hours based on both the scores (opacity and permeability) and histological changes in the epithelium. The full expression of stromal changes took 4 hours in the BCOP (e.g., ethanol).
- Irritation Levels:
 1. Severe irritation was defined by sustained high Draize scores, high in-vitro scores, significant tissue damage (Group IV and E) and no recovery.
 2. Moderate irritation was defined at two levels with moderate tissue damage (Group III, II & D-B):
 - one level defined by moderate Draize and in-vitro scores, and seven days to clear and
 - second level defined by moderate Draize and in-vitro scores and three days to clear.
 3. Mild irritation was defined by mild Draize and in-vitro scores, minimal tissue damage (Group I & A) and rapid recovery (<3 days).
- Based on the histological changes over the three harvest times, the BCOP was able to distinguish a) the severe irritation potential of ethanol, b) the moderate irritation potentials of fragrance alone, fragrance + ethanol, fragrance + DPM, and fragrance + carbitol, c) the moderate but more rapidly clearing irritation of DPM and carbitol alone, d) the mild irritation of fragrance + Isopar M and fragrance + BB, and e) the very mild Isopar M, DPG, and BB alone. The exception is fragrance + DPG where the in vitro response was much more pronounced than the in vivo response.

In Vivo Histology : Appended below

Figures 7-8 show animal corneas treated with test substance.

Figure 7. In Vivo Group 1: BB & Isopar M

- (A) Center of the cornea, no changes observed (magnification 230x)
- (B) Area, away from limbus, showing separation of squamous epithelium (magnification 430x)

Figure 8. In Vivo Group 4: ETOH.

- (A) Central cornea showing loss of epithelium, inflammation, and marked increase in larger dark staining keratocyte nuclei in area of inflammatory infiltrate. Note - the cells were not in the upper 20% of the stroma (magnification 170x)
- (B) Area in denuded area showing keratocyte changes and swelling (magnification 430x)

BCOP Histology

Figures 9-12 show corneas treated for 3 minutes, at varying post exposure times with test substance in the BCOP.

Figure 9. BCOP Fragrance alone: 3-minute exposure, 2-hour post-exposure

- (A) Epithelium – Loss of surface squamous epithelium and some necrotic cells within the wing and basal layers (magnification 230x)(Epithelial Group B)
- (B) Stroma – Very similar to the time-matched negative control-treated corneas (magnification 430x)(Stromal Group A)

Figure 10. BCOP Fragrance alone: 3-minute exposure, 20-hour post-exposure

- (A) Epithelium – Loss of the squamous epithelium and marked nuclear pyknosis and cytoplasmic eosinophilia in the wing cell layer (magnification 230x) (Epithelial Group D)
- (B) Stroma – Marked collagen matrix vacuolization to 20% depth and keratocyte nuclear swelling and cytoplasmic eosinophilia (magnification 430x) (Stromal Group D)

Figure 11. BCOP ETOH alone: 3-minute exposure, 2-hour post-exposure

- (A) Epithelium – Marked cellular damage and separation between the basal cells and basal lamina (magnification 230x) (Epithelial Group E)
- (B) Stroma – Moderate collagen matrix vacuolization to mid depth and moderate increase in keratinocytes with nuclear pyknosis in the upper 25% of the stroma (magnification 430x) (Stromal Group B)

Figure 12. BCOP ETOH alone: 3-minute exposure, 4-hour post-exposure

- (A) Epithelium - Marked cellular damage and separation between the basal cells and basal lamina (magnification 230x) (Epithelial Group E)
- (B) Stroma – Marked collagen matrix vacuolization and a decrease in viable keratocytes extended to 30% depth. Marked keratocyte nuclear enlargement cytoplasmic eosinophilia was present at mid depth but is not shown in this micrograph (magnification 430x) (Stromal Group E)

CONCLUSIONS:

- Over the three harvest times, the BCOP assay was able to identify histological changes that characterize the treatment groups into severe (ethanol alone), moderate (2-stages), and mild categories. One treatment group (fragrance + DPG) was over predicted by the BCOP compared to the in vivo assay.
- Solvents have a major impact on the ocular irritation potential of fragrance mixtures. Both the degree and the time-course of the irritation can be impacted by the solvent.
- The time course of the tissue scores in vivo was similar to the time course of the histological changes in BCOP.
- When injury was significant enough, morphological changes in the keratocytes, specifically keratocyte nuclear enlargement (activation), were detectable in both the BCOP and in-vivo-treated corneas. Fini (1999) and collaborators have reported that certain morphological changes in keratocytes are associated with phenotypic changes (activation) and subsequent undesirable fibrotic scarring.
- BCOP model was more consistent in its response to a given treatment than the in vivo model (Table 1-3).

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ACKNOWLEDGEMENTS

The authors wish to thank the general staffs at both the Institute for In Vitro Sciences, Inc. and the Charles River Laboratories, Inc. for their assistance on this project.

Figure 1. In Vivo Opacity Scores

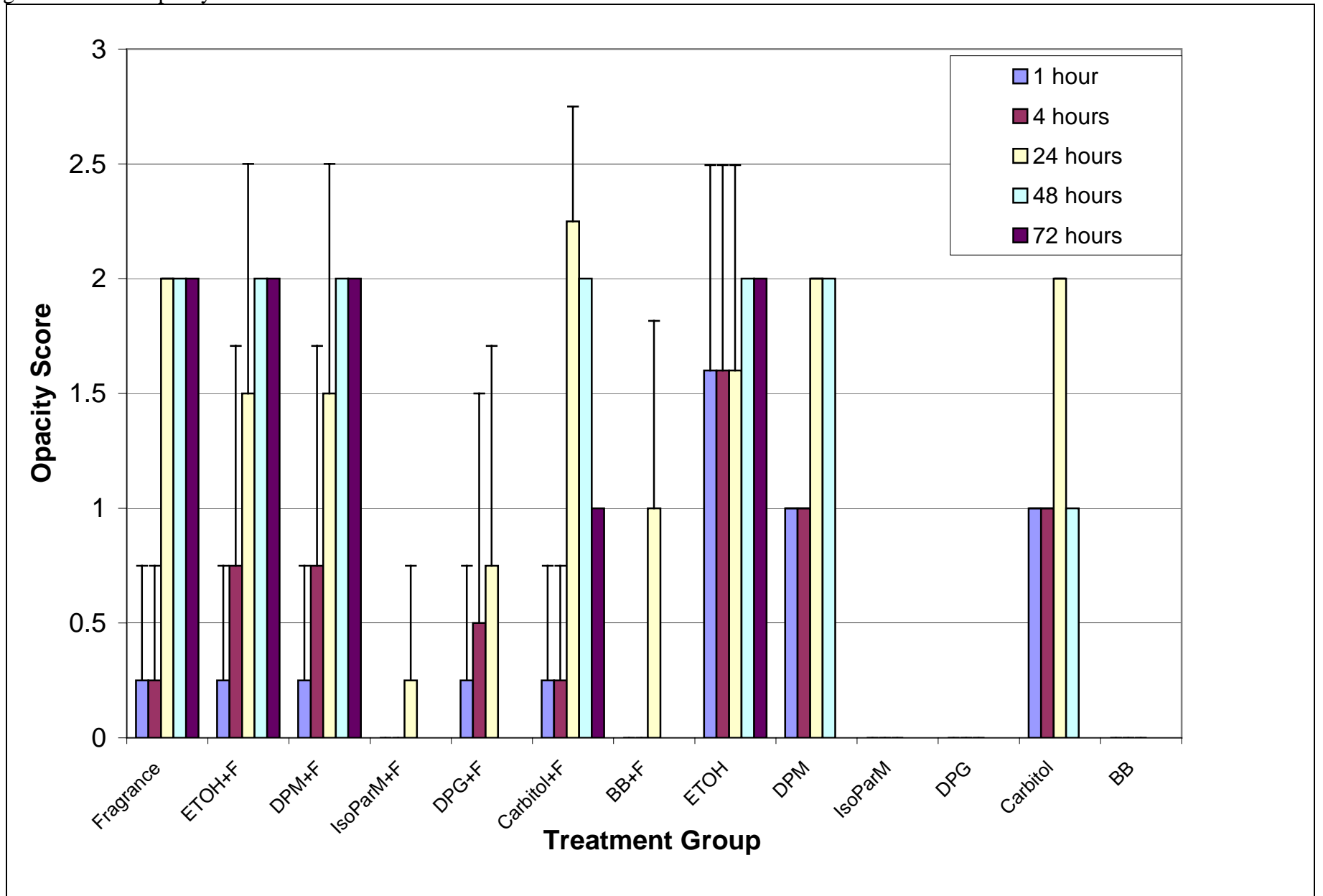


Figure 2. In Vivo Corneal Scores (Opacity x Area)

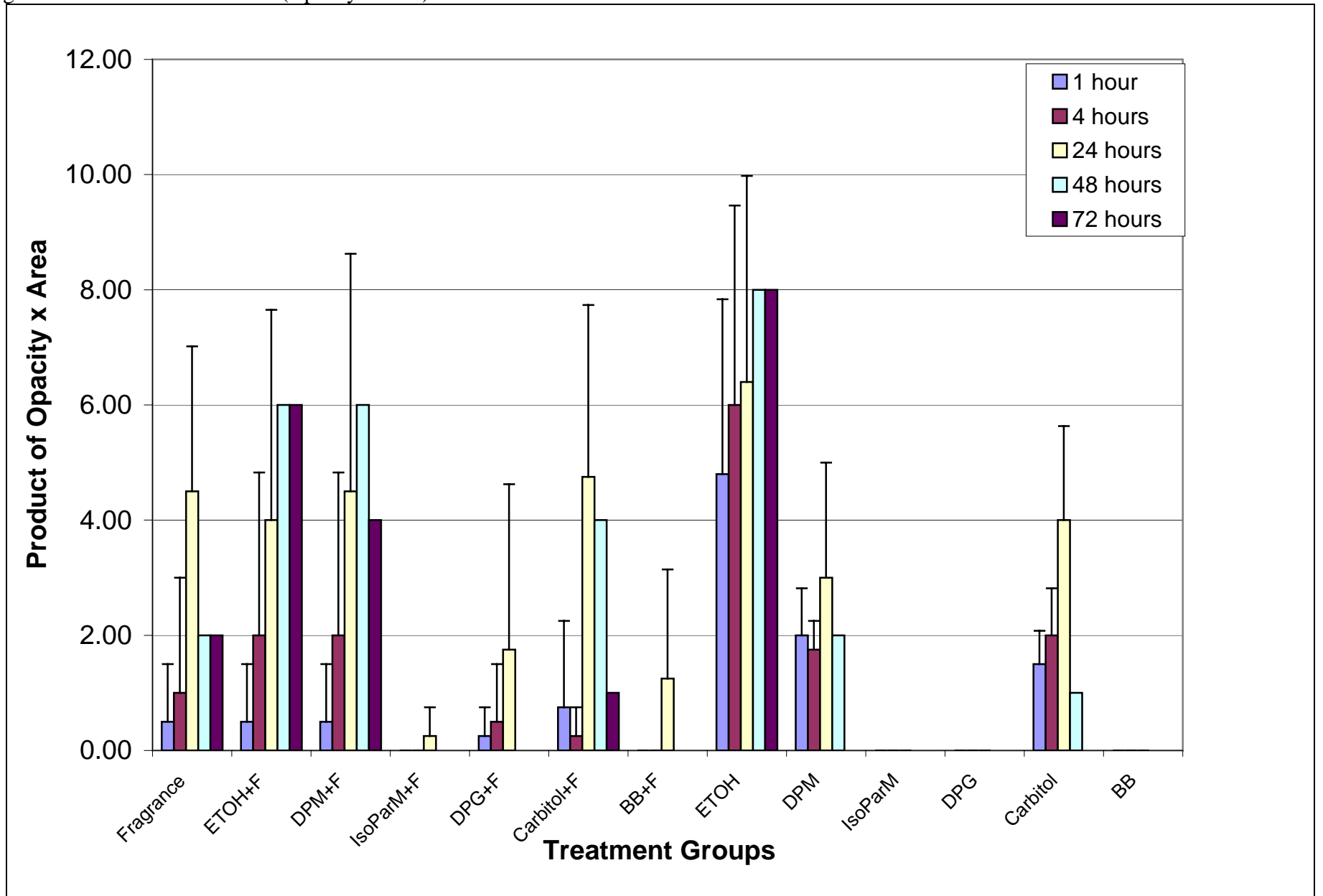


Figure 3. In Vivo MAS Scores

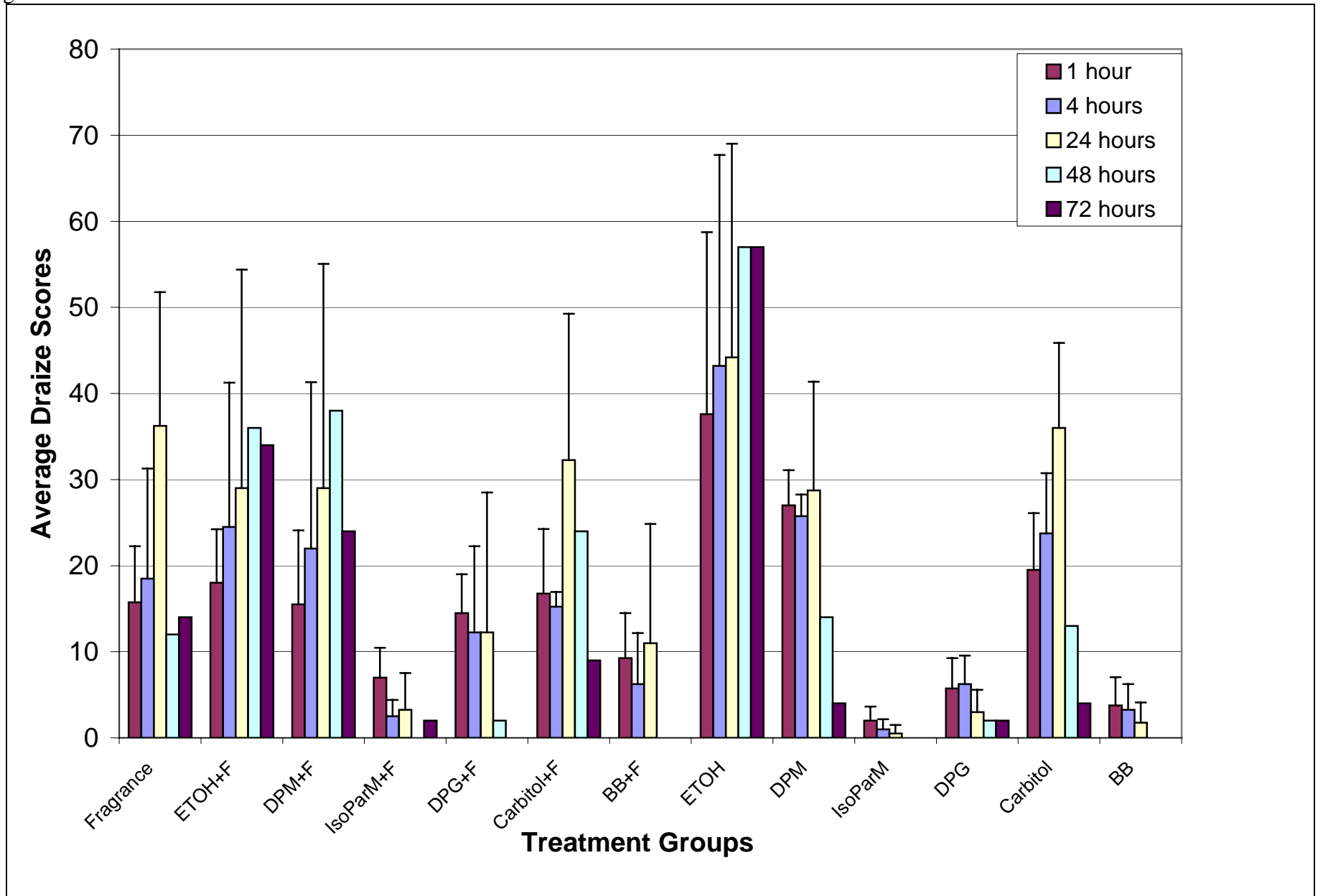


Figure 4. BCOP Opacity Scores

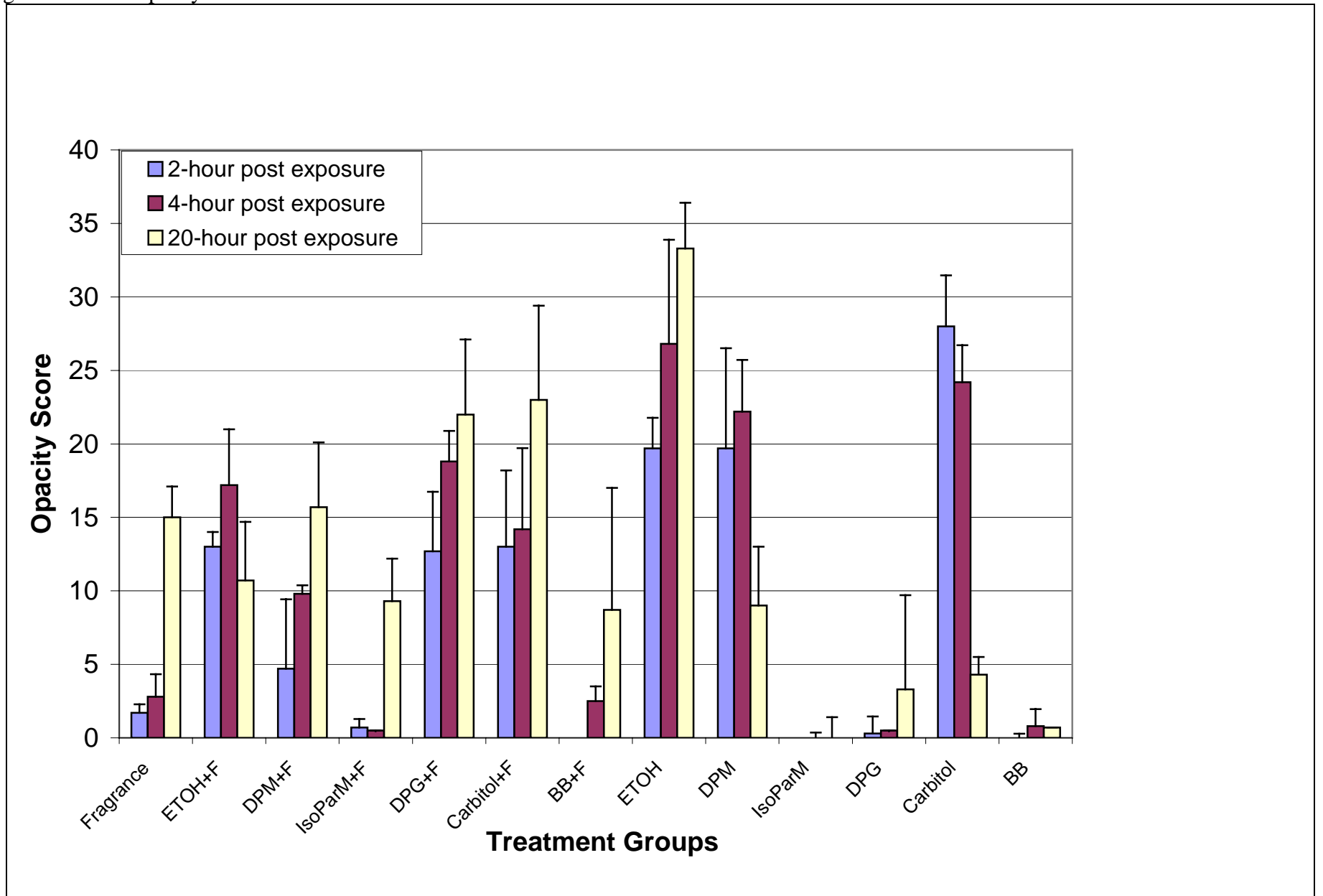


Figure 5. BCOP Permeability Scores

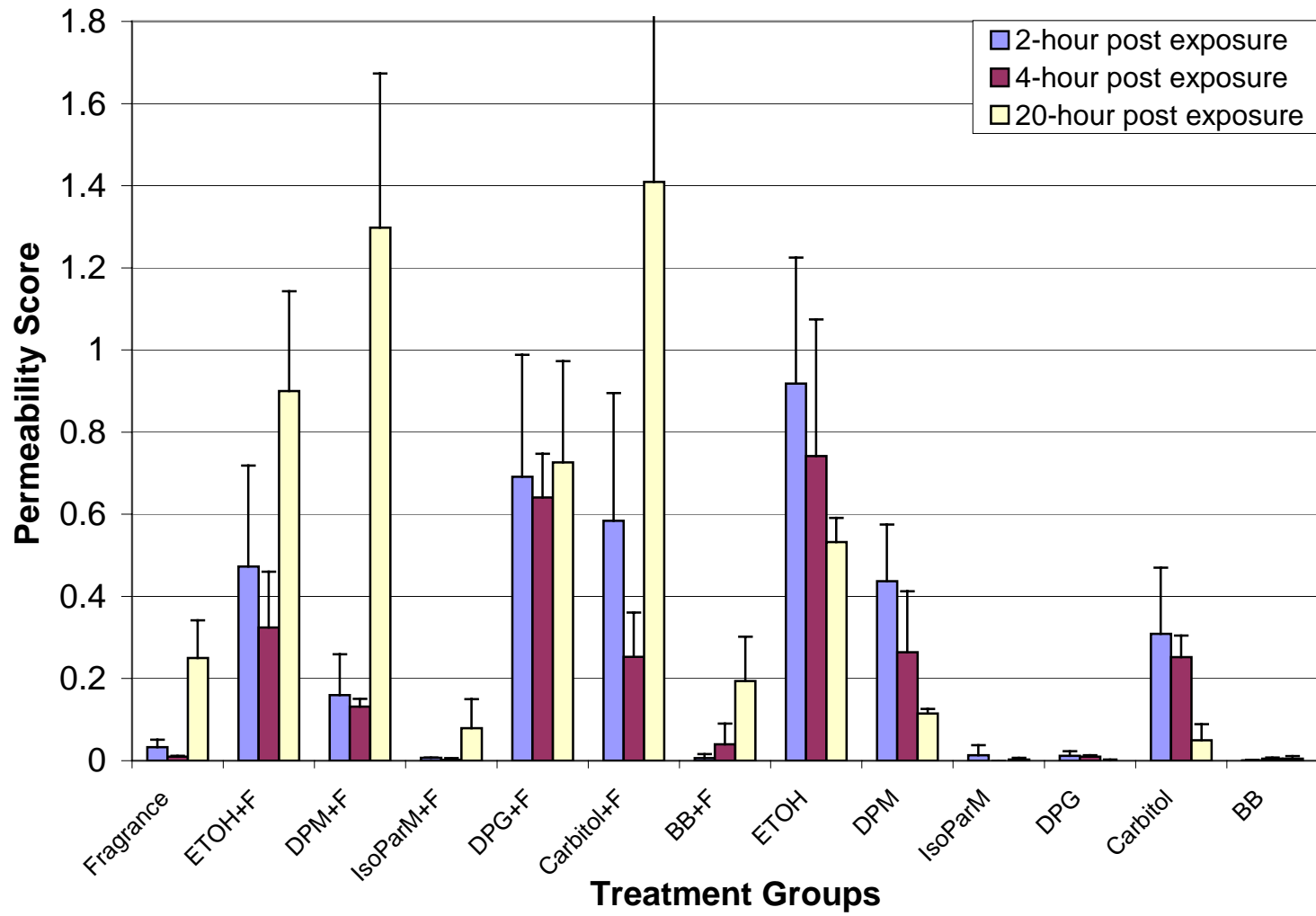


Figure 6. BCOP In Vitro Scores

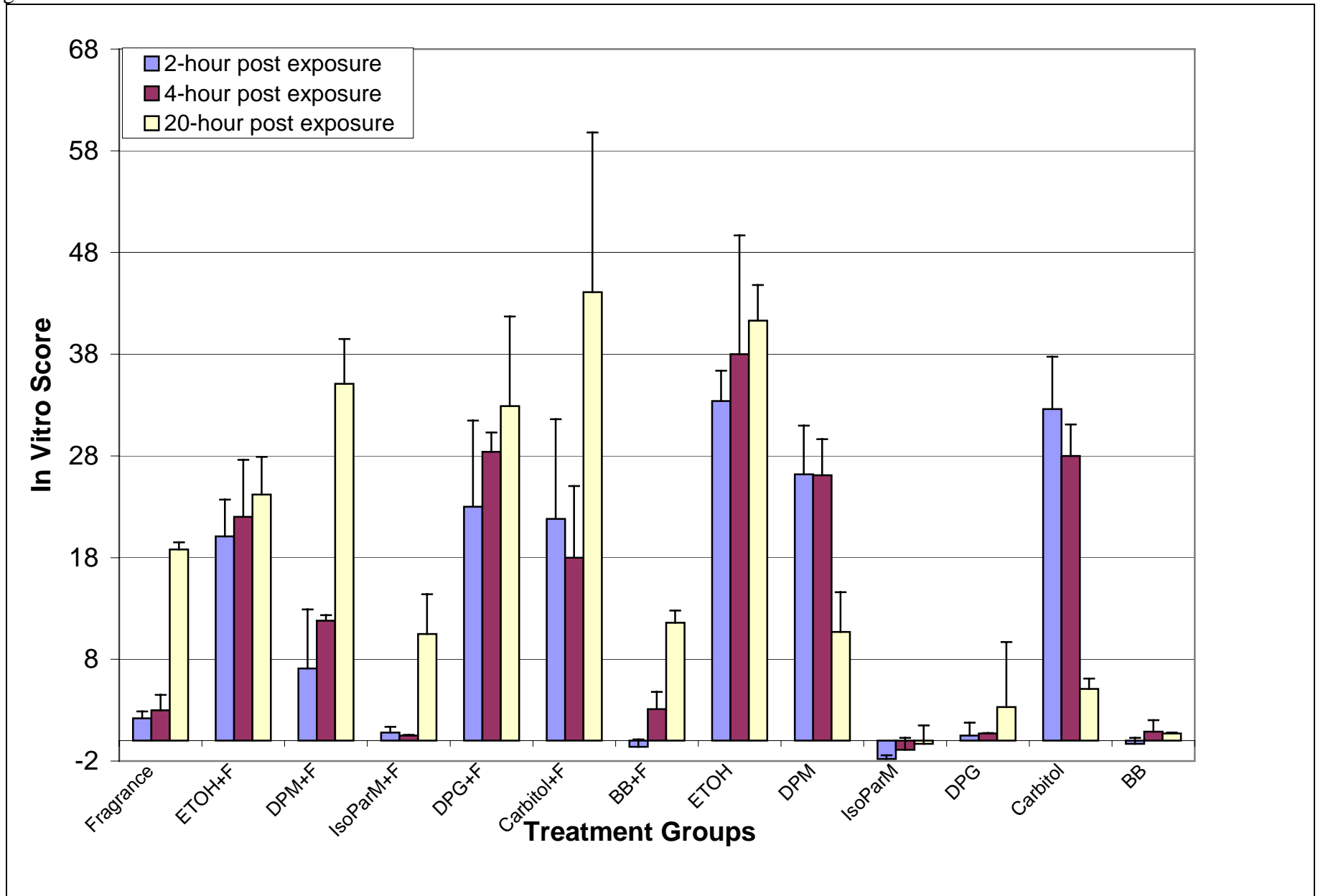
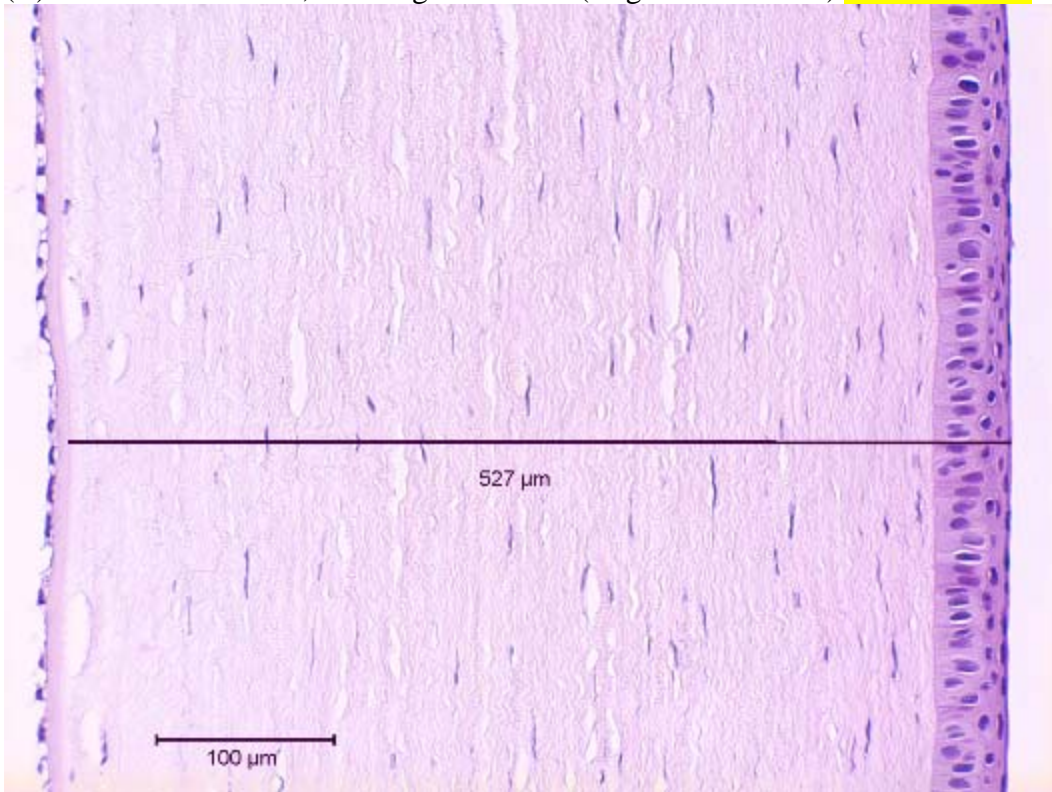


Figure 7. In Vivo Group 1: BB & Isopar M

(A) Center of the cornea, no changes observed (magnification 230x) [File 100902-77](#)

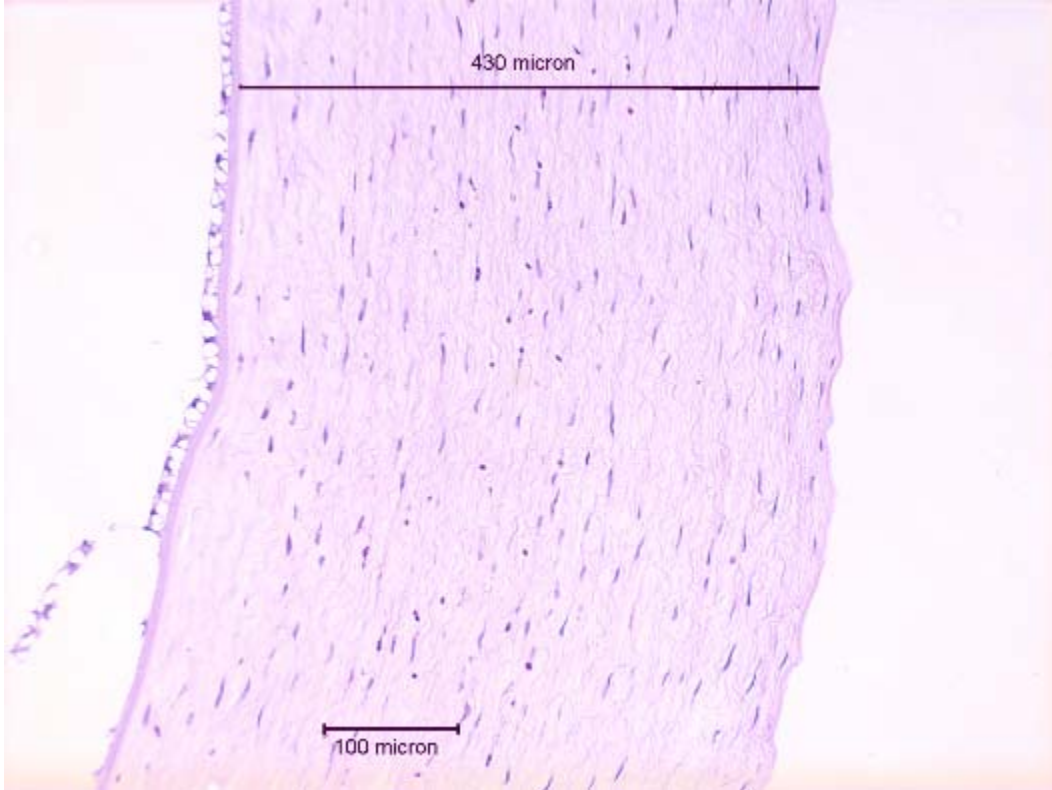


(B) Area, away from limbus, showing separation of squamous epithelium (magnification 430x) **File 100902-61**



Figure 8. In Vivo Group 4: ETOH.

(A) Central cornea showing loss of epithelium, inflammation, and marked increase in larger dark staining keratocyte nuclei in area of inflammatory infiltrate. Note - the cells were not in the upper 20% of the stroma (magnification 170x) [File 100902-41](#)



(B) Area in denuded area showing keratocyte changes and swelling (magnification 430x) File 100902-42

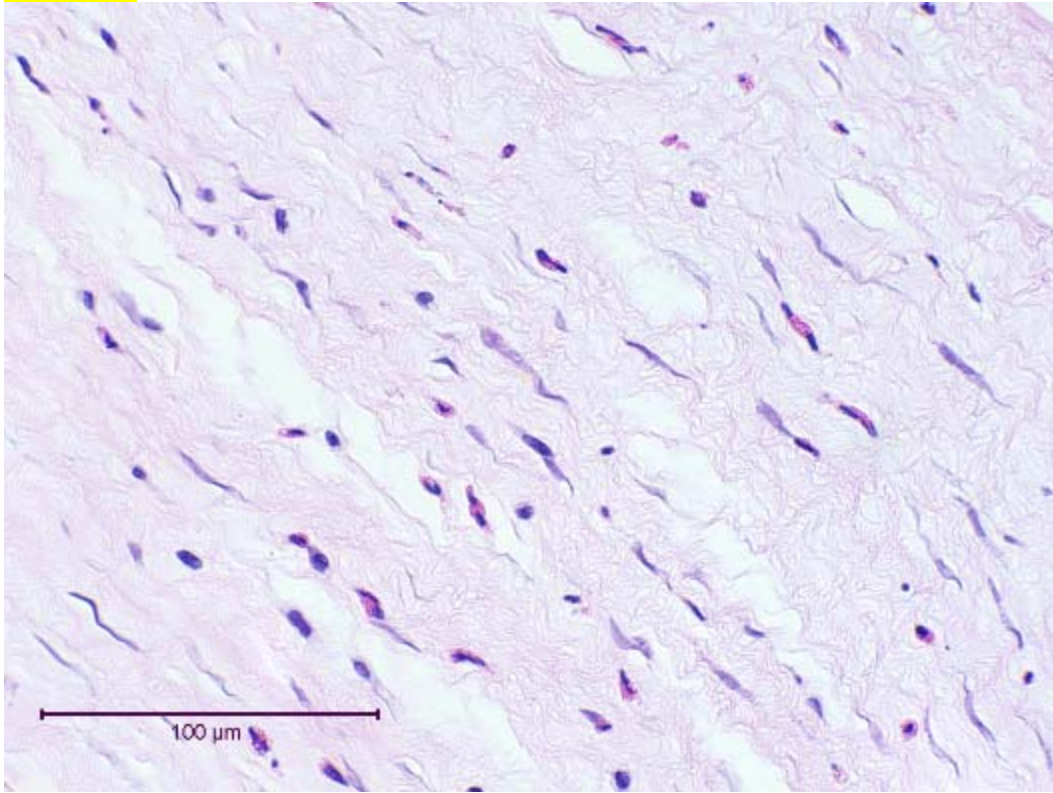
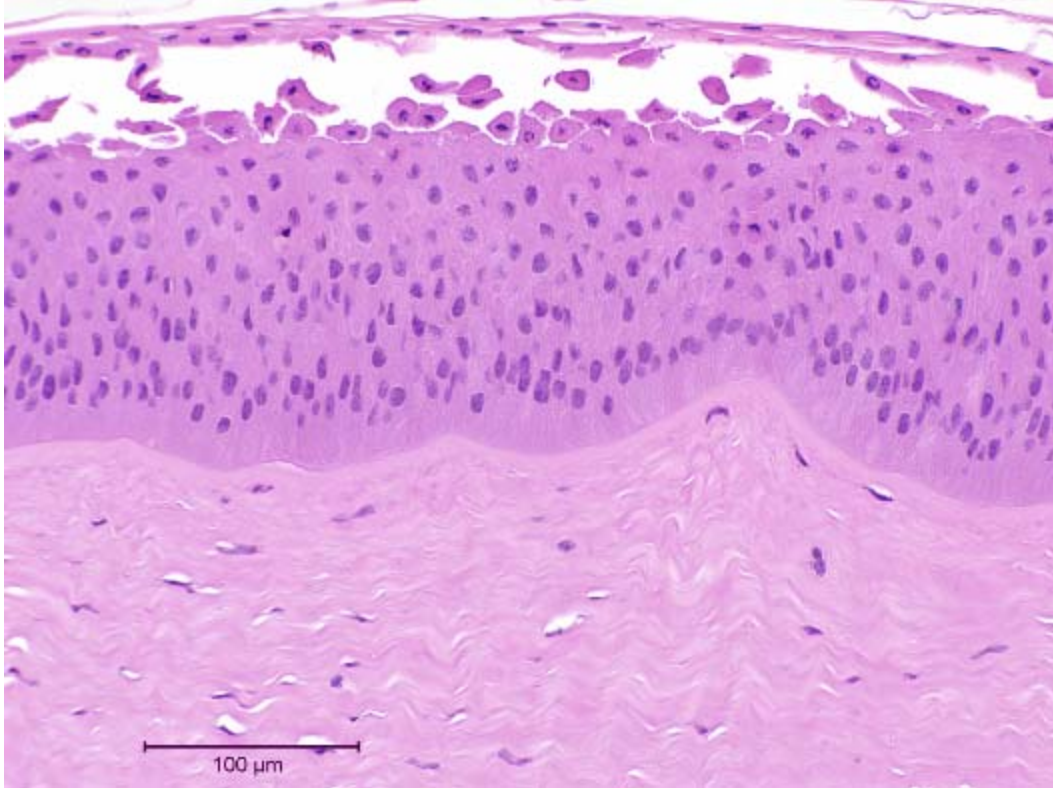


Figure 9. BCOP Fragrance alone: 3-minute exposure, 2-hour post-exposure

(A) Epithelium – Loss of surface squamous epithelium and some necrotic cells within the wing and basal layers (magnification 230x)(Epithelial Group B) [File 082903-08](#)



(B) Stroma – Very similar to the time-matched negative control-treated corneas (magnification 430x)(Stromal Group A) [File 082903-10](#)

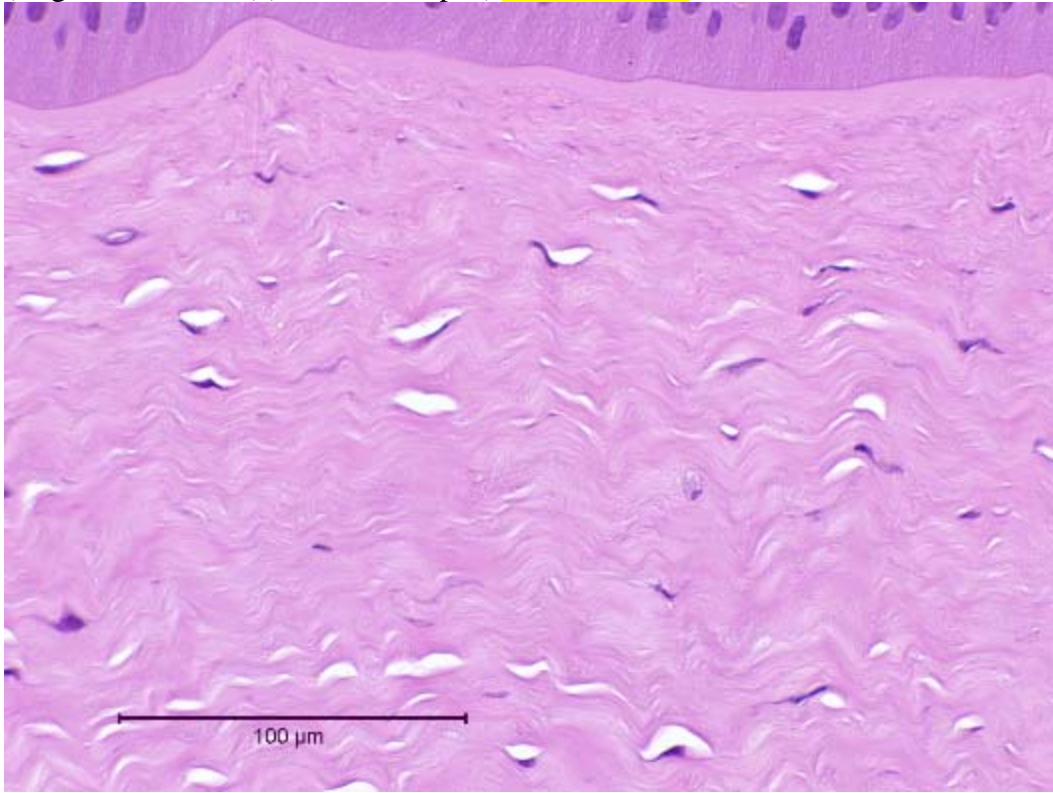
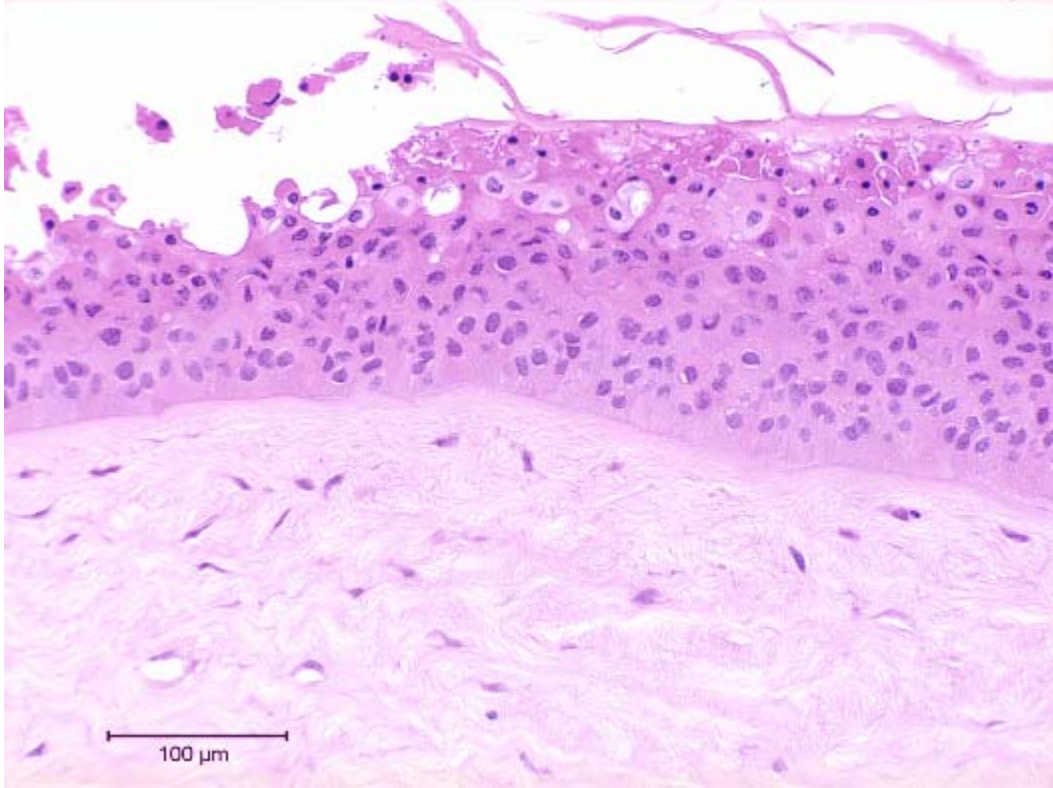


Figure 10. BCOP Fragrance alone: 3-minute exposure, 20-hour post-exposure

(A) Epithelium – Loss of the squamous epithelium and marked nuclear pyknosis and cytoplasmic eosinophilia in the wing cell layer (magnification 230x) (Epithelial Group D) [File 111702-12](#)



(B) Stroma – Marked collagen matrix vacuolization to 20% depth and keratocyte nuclear swelling and cytoplasmic eosinophilia (magnification 430x) (Stromal Group D) **File 111702-14**

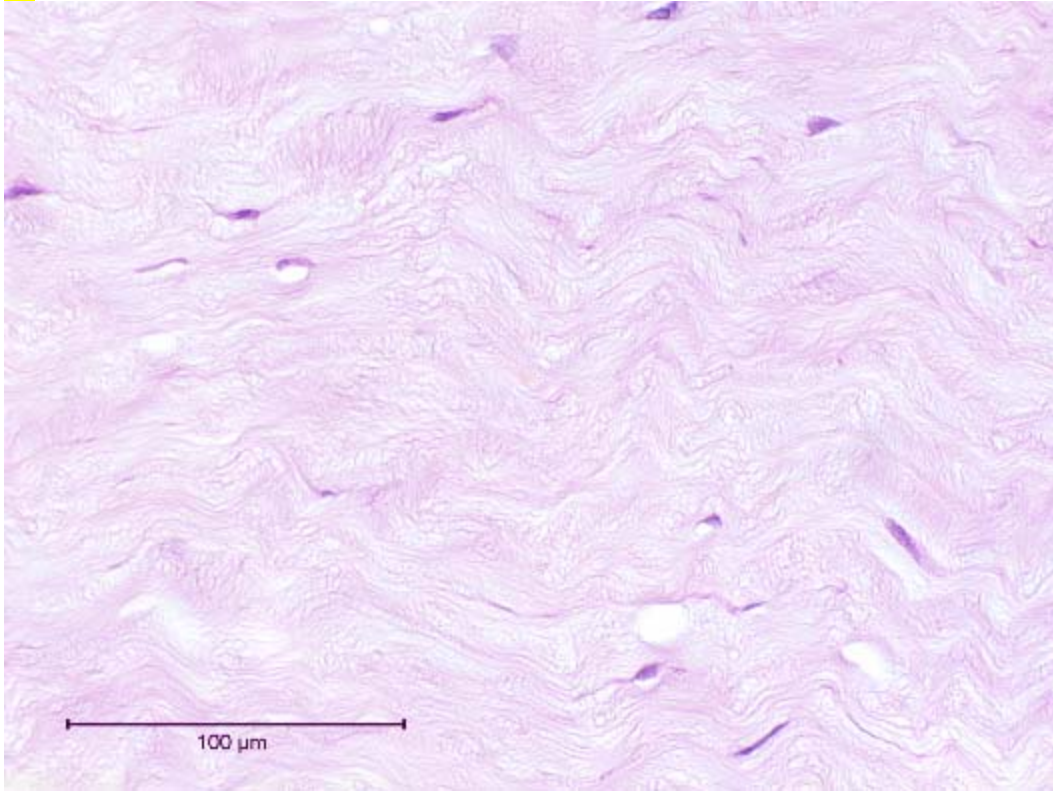
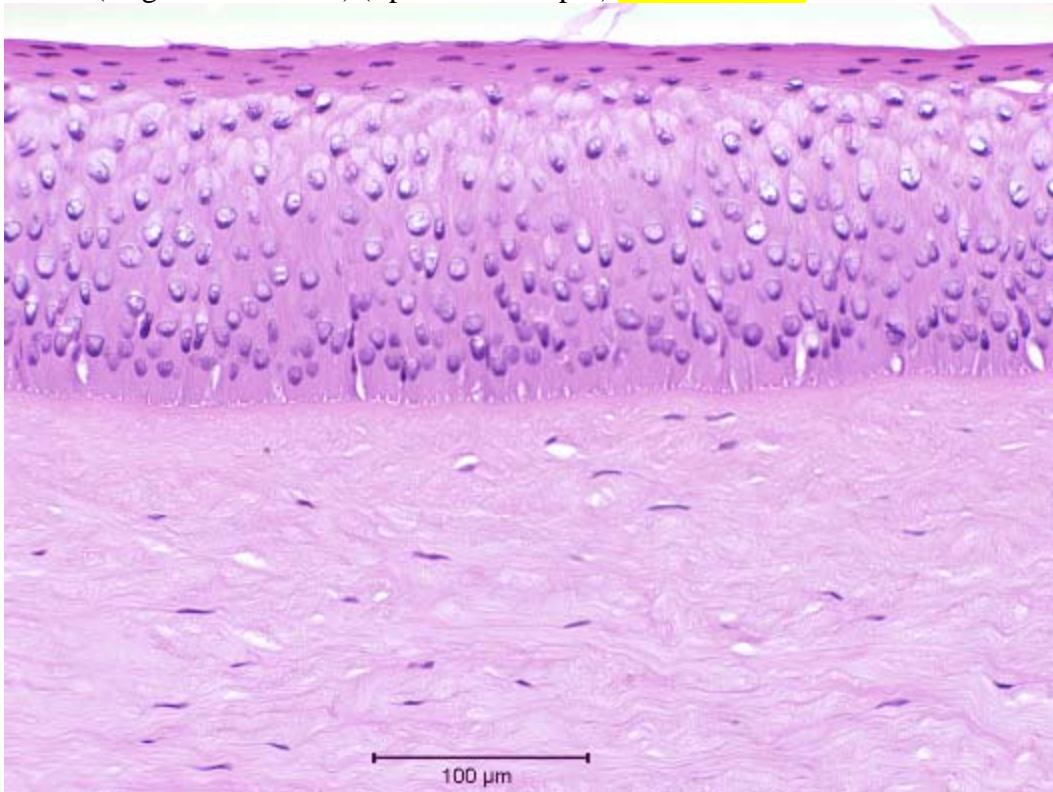


Figure 11. BCOP ETOH alone: 3-minute exposure, 2-hour post-exposure

(A) Epithelium – Marked cellular damage and separation between the basal cells and basal lamina (magnification 230x) (Epithelial Group E) [File 082903-35](#)



(B) Stroma – Moderate collagen matrix vacuolization to mid depth and moderate increase in keratinocytes with nuclear pyknosis in the upper 25% of the stroma (magnification 430x)
(Stromal Group B) [File 082903-37](#)

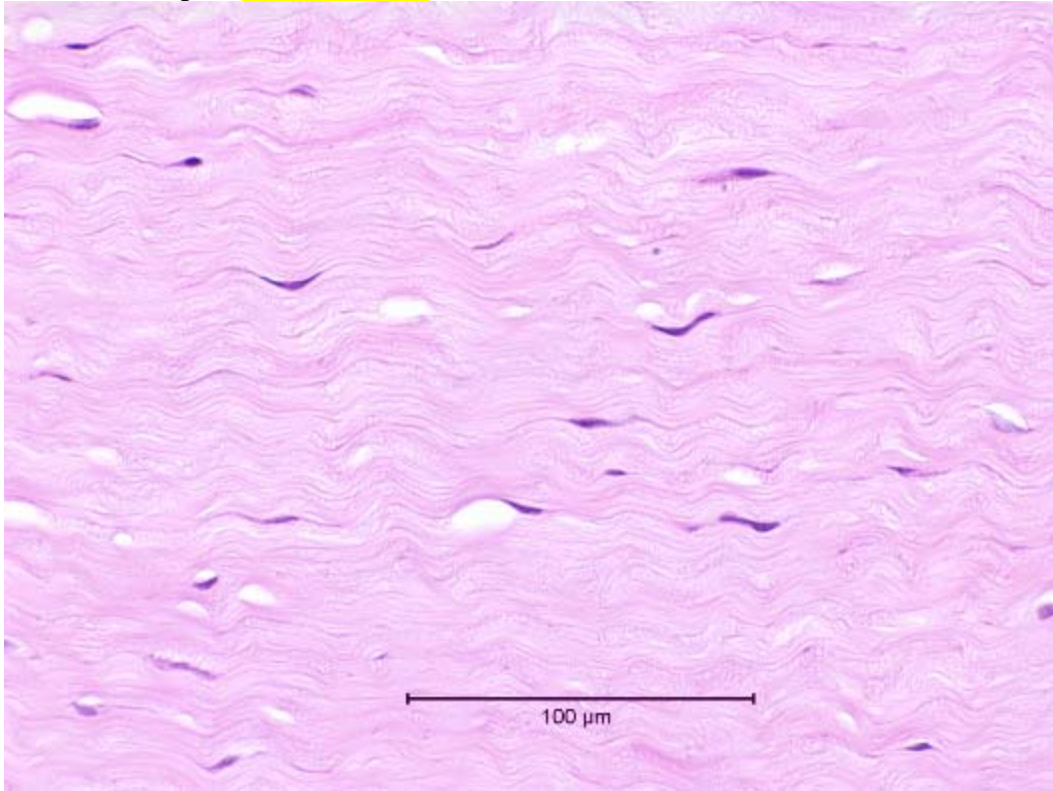
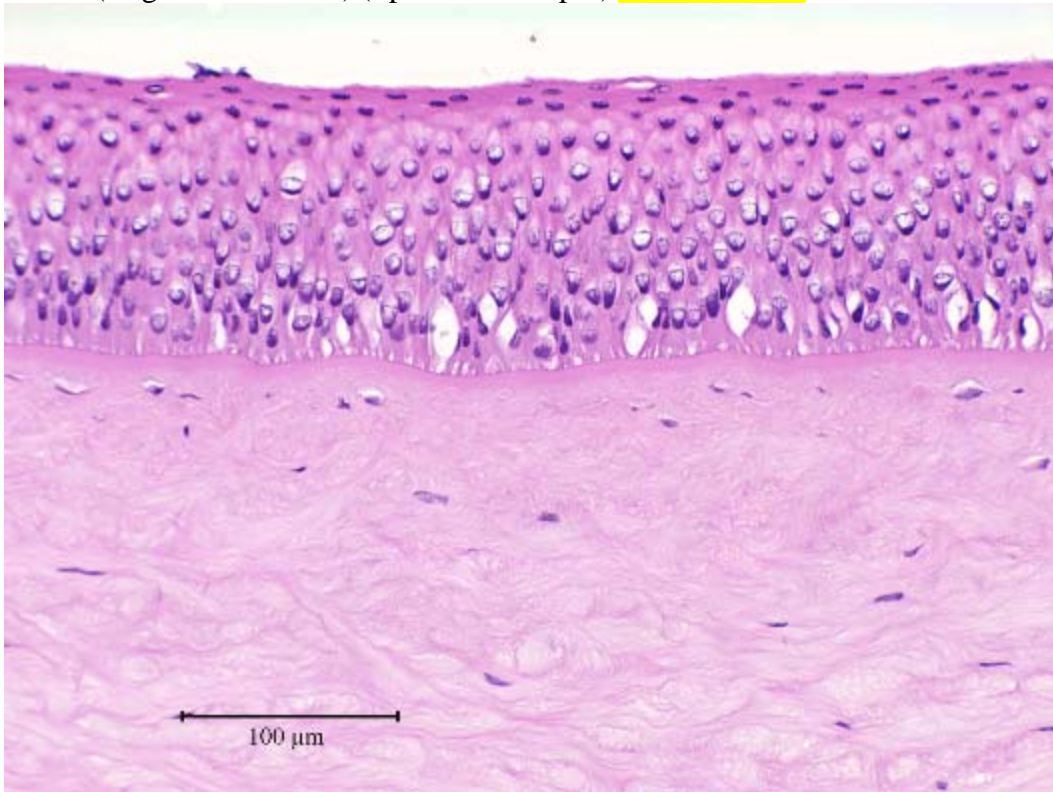
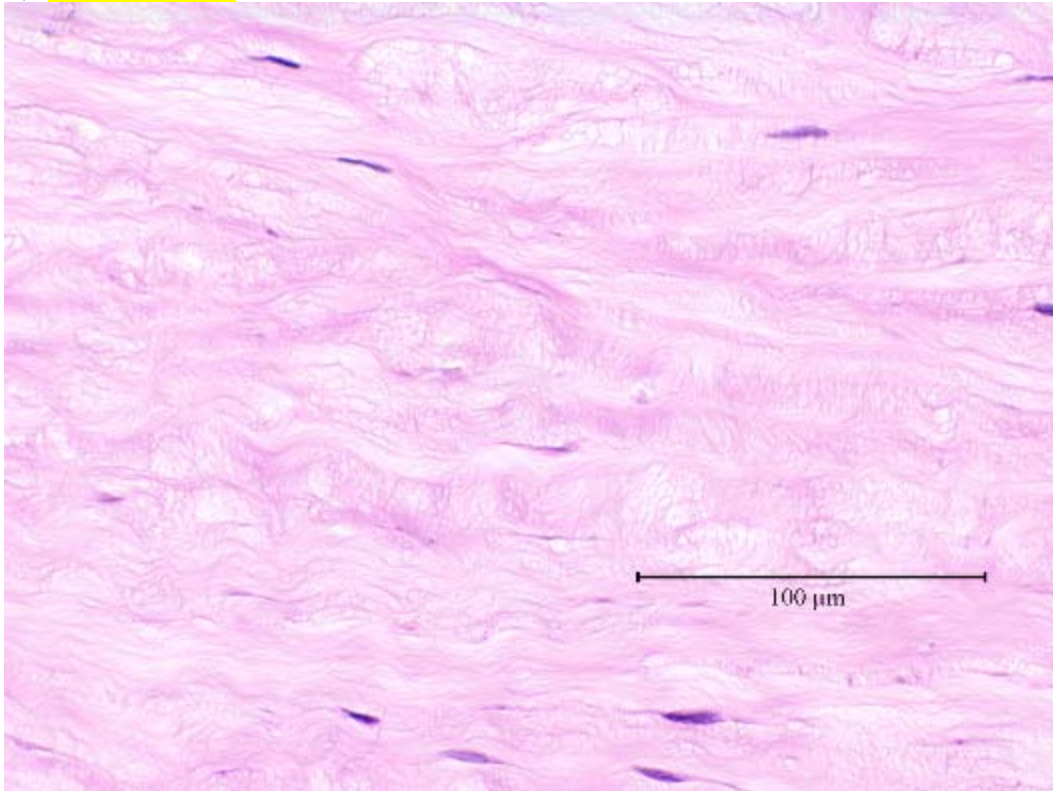


Figure 12. BCOP ETOH alone: 3-minute exposure, 4-hour post-exposure

(A) Epithelium - Marked cellular damage and separation between the basal cells and basal lamina (magnification 230x) (Epithelial Group E) [File 091503-43](#)



(B) Stroma – Marked collagen matrix vacuolization and a decrease in viable keratocytes extended to 30% depth. Marked keratocyte nuclear enlargement cytoplasmic eosinophilia was present at mid depth but is not shown in this micrograph (magnification 430x) (Stromal Group E) [File 091503-45](#)



FORMULAS

| Test Material # | Group | Raw Material | Percentage |
|-----------------|--------------------------------|--------------------|------------|
| 1 | Fragrance | Benzyl acetate | 25 |
| | | linalool | 25 |
| | | Dihydroxymyrcenol | 25 |
| | | Verdox | 25 |
| 2 | Ethanol | Ethanol | 100 |
| 3 | Dowanol DPM | Dowanol DPM | 100 |
| 4 | Isopar M | Isopar M | 100 |
| 5 | Dipropylene glycol | Dipropylene glycol | 100 |
| 6 | Carbitol | Carbitol | 100 |
| 7 | Benzyl benzoate | Benzyl benzoate | 100 |
| 8 | Ethanol + Fragrance | Ethanol | 20 |
| | | Benzyl acetate | 20 |
| | | linalool | 20 |
| | | Dihydroxymyrcenol | 20 |
| | | Verdox | 20 |
| 9 | Dowanol DPM + Fragrance | Dowanol DPM | 20 |
| | | Benzyl acetate | 20 |
| | | linalool | 20 |
| | | Dihydroxymyrcenol | 20 |
| | | Verdox | 20 |
| 10 | Isopar M + Fragrance | Isopar M | 20 |
| | | Benzyl acetate | 20 |
| | | linalool | 20 |
| | | Dihydroxymyrcenol | 20 |
| | | Verdox | 20 |
| 11 | Dipropylene glycol + Fragrance | Dipropylene glycol | 20 |
| | | Benzyl acetate | 20 |
| | | linalool | 20 |
| | | Dihydroxymyrcenol | 20 |
| | | Verdox | 20 |
| 12 | Carbitol + Fragrance | Carbitol | 20 |
| | | Benzyl acetate | 20 |
| | | linalool | 20 |
| | | Dihydroxymyrcenol | 20 |
| | | Verdox | 20 |

FORMULAS

| Test Material # | Group | Raw Material | Percentage |
|------------------------|--------------------------------|---------------------|-------------------|
| 13 | Benzyl benzoate + Fragrance | Benzyl benzoate | 20 |
| | | Benzyl acetate | 20 |
| | | linalool | 20 |
| | | Dihydroxymyrcenol | 20 |
| | | Verdox | 20 |

Appendix G2

**Dataset Received from S.C. Johnson & Son, Inc. in Support of
Cuellar et al. (2002) Poster Presentation**

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A FAMILY COMPANY

S.C. Johnson & Son, Inc.
Worldwide Consumer Products, RD & E
Global Safety Assessment and Regulatory Affairs, Product Toxicology
MS 139 1525 Howe Street, Racine WI 53403

September 3, 2004

Christina Inhof, MSPH
Senior Project Coordinator/Technical Writer ILS, Inc.
NICEATM
P.O. Box 12233
NIEHS MD EC-17
Research Triangle Park, NC 27709

Christina,

Hi! How are you? I am happy to be submitting the data on benchmark and fragrance formulations, which were partially discussed in the poster citation listed below:

Cuellar, N., Merrill, J.C., Clear, M.L., Mun G., and Harbell J.W. 2002. The application of benchmarks for the evaluation of the potential ocular irritancy of aerosol fragrances. *The Toxicologist* 66(1-S): 243-244.

Included with this submission are the following documents:

1. Cover letter
2. Data spreadsheet
3. Fragrance graphs
4. Coded formula spreadsheet

Study Protocols:

Standard Draize protocol was used for 4 of the in-vivo studies. The EPA aerosol protocol was used for test material #3. Standard BCOP protocol was used for the in-vitro work at IIVS. BCOP exposure times were 3 and 10 minutes with post exposure of 2 hours.

Formula Spreadsheet:

The formulas listed in this spreadsheet are coded similarly to past submissions. For benchmarks, test material number is the unique sample number whereas the group description is referenced in the poster as type of benchmark. Test material #3 and #4 (Alcohol-based benchmark) is not listed in the poster. For fragrance formulas, test material denotes the category (formula) whereas the group describes the formula form (i.e aerosol vs membrane (gel)). Fragrances formulas are referenced in the poster. For both benchmarks and formulations, raw materials are listed followed by their percentages.

Poster:

Benchmark poster not included. John Harbell previously sent it to you.

Graphs:

Graphs plot the BCOP total score per each unique fragrance formulation. Graphs include reference benchmarks (see formula spreadsheet) and the ethanol control. The bars show one standard deviation from the mean value for each benchmark and the ethanol. Please note that the ethanol values displayed on the 3-minute exposure graphs are for a 3-minute exposure to ethanol (not the 10-minute exposure ethanol that was performed as the positive control). There are 9 tabs in this spreadsheet. Graphs are labeled per form ((2 for aerosol and 2 for membrane (gel)) and exposure time (3 or 10 minutes) in tabs 1-8. The first two graphs refer to the aerosol formulas and the second two graphs refer to the membrane. Each graph includes the corresponding raw data in the next tab. There are 44 aerosol formulas depicted in the aerosol graphs and 36 membrane formulas depicted in the membrane graphs. The final tab describes the basic statistics on the ethanol control and each benchmark by exposure time.

Data Worksheet:

The data worksheet consists of 4 tabs at the bottom of the page. We are including all tabs to clearly demonstrate how we analyzed the data into the GHS and EPA categories in the summary spreadsheet shown in tab #4.

Summary spreadsheet:

The summary spreadsheet is sorted by test material. The test material number refers to the benchmark formula or ethanol listed in the formula spreadsheet. GHS and EPA categories are in the next 8 columns in yellow. The last 2 columns consist of the mean BCOP total scores (3 and 10 minute) in blue. EPA and GHS criteria are summarized in this spreadsheet.

Data was analyzed per formula. Raw data scores from the first three days and days to clear per each of 6 rabbits were randomly put into combinations of three and categorized accordingly based on EPA or GHS criteria. This analysis resulted in a total of 20 combinations per formula. Each combination was listed in the appropriate GHS or EPA category. Scoring assumptions are also listed in this spreadsheet based on protocol differences.

Protocol used for the BCOP assay was the same for all benchmarks and ethanol formulas. In-vivo studies were conducted using the standard Draize protocol with the exception of the ethanol/fragrance benchmark. The ethanol/fragrance benchmark utilized the EPA aerosol dosing Draize protocol.

The ethanol/fragrance benchmark is used to evaluate specific aerosol formulations. This benchmark shows that even though the formulation would be irritating in the standard Draize Assay, the product is provided in a form that restricts exposure to the aerosol route by limiting exposure via a metered dose. The metered dosing approach demonstrates that new formulations would not exceed the irritation potential of the benchmark.

As shown in the graphs and the summary table, the BCOP is able to rank irritation of a variety of formulations in comparison to the benchmarks. Severe irritants can be identified using this methodology. The fragrance level in the formula does impact the irritation potential of the formula.

September 2, 2004

These data demonstrate the importance of assessing all new formulations relative to an appropriate fixed benchmark.

If you have any questions or comments on this data set, please feel free to contact either Judith Swanson or myself at the following:

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Judith Swanson
(262) 260-2688
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Sincere regards,

A handwritten signature in cursive script that reads "Nicole Cuellar".

Nicole Cuellar
Sr. Research Toxicologist

In Vivo Data - S.C. Johnson Submission Dated September 3, 2004

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
|--|-----------|-----------|---------|---------|------|------|---------|--------------|-----------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | F38948 | #1 | 24 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 14 |
| | | | 72 | 1 | 1 | 0 | 0 | 1 | 0 | 7 | GHS |
| | | | 7 days | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 14 |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 21 days | | | | | | | 0 | |
| GHS Tissue | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DIC EPA | DIC GHS |
| | F38948 | #1 | 27 | 1.0 | 1.3 | 0.3 | 1.3 | 1.3 | 0.7 | 14 | 14 |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | |
| | 1 | #1 | 27 | 1.0 | 1.3 | 0.3 | 1.3 | 1.3 | 0.7 | 14 | 14 |
| | 2 | #1 | 34 | 0.7 | 1.3 | 0.3 | 2.3 | 1.3 | 0.7 | 14 | 14 |
| | 3 | #1 | 37 | 0.7 | 2.0 | 0.3 | 2.0 | 1.3 | 0.7 | 7 | 14 |
| | 4 | #1 | 35 | 1.0 | 2.3 | 1.0 | 2.0 | 1.3 | 0.3 | 7 | 14 |
| | 5 | #1 | 39 | 1.0 | 2.7 | 1.0 | 2.7 | 1.3 | 2.0 | 14 | 14 |
| 6 | #1 | 30 | 1.0 | 1.7 | 1.0 | 2.7 | 1.3 | 0.3 | 14 | 14 | |
| | Dose Vol | 0.1 | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
|--|-----------|-----------|---------|---------|------|------|---------|--------------|-----------|---------|---------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | R2266 | #2 | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DIC EPA | DIC GHS | |
| | R2266 | #2 | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | | |
| | 1 | #2 | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| | 2 | #2 | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| | 3 | #2 | 4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.3 | 0.0 | 0 | 3 | |
| | 4 | #2 | 2 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0 | 3 | |
| | 5 | #2 | 2 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0 | 3 | |
| 6 | #2 | 4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.0 | 0 | 3 | | |
| | Dose Vol | 0.1 | | | | | | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
|------------------------------|--------------|-----------|----------|----------|----------|----------|-------------|------------------------|--------------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | F38949 | #1 | 24 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 14 |
| | | | 72 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | GHS |
| | | | 7 days | 1 | 1 | 0 | 1 | 0 | 0 | 7 | 14 |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 21 days | | | | | | | 0 | 0 |
| | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | F38949 | #1 | 34 | 0.666667 | 1.333333 | 0.333333 | 2.333333333 | 1.333333333 | 0.666666667 | 14 | 14 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combin- ation block #1 | 1,2,3 | 0.833333 | 0.333333 | 2.166667 | 1.333333 | 14 | 14 | Combin- ation block | 1,3,4 | 1 | 0.666667 |
| | GHS Rating | 4 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 4 | |
| | 1,2,4 | 1 | 0.666667 | 2.166667 | 1.333333 | 14 | 14 | #2 | 1,3,5 | 1 | 0.666667 |
| | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 4 | |
| | 1,2,5 | 1 | 0.666667 | 2.5 | 1.333333 | 14 | 14 | GHS Rating | 1,3,6 | 1 | 0.666667 |
| | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 4 | |
| | 1,2,6 | 1 | 0.666667 | 2.5 | 1.333333 | 14 | 14 | GHS Rating | 1,4,5 | 1 | 1 |
| GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 4 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | R2317 | #2 | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | R2317 | #2 | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combin- ation block #1 | 1,2,3 | 0 | 0 | 0.583333 | 0.166667 | 0 | 3 | Combin- ation block | 1,3,4 | 0 | 0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0 | 0 | 0.583333 | 0 | 0 | 3 | #2 | 1,3,5 | 0 | 0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0 | 0 | 0.583333 | 0 | 0 | 3 | GHS Rating | 1,3,6 | 0 | 0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0 | 0 | 0.583333 | 0.333333 | 0 | 3 | GHS Rating | 1,4,5 | 0 | 0 |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | 4 | 4 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
|----------|-----------|-----------|-----------|------------|------------|----------|------------|--------------|-----------|------------|-------------|---------------|---------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | F38950 | #1 | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | EPA | |
| | | | 48 | 1 | 2 | 0 | 2 | 1 | 0 | 16 | 7 | | |
| | | | 72 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | GHS | | |
| | | | 7 days | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 14 | | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | | 21 days | | | | | | | 0 | | | |
| | | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | | | F38950 | #1 | 37 | 0.666667 | 2 | 0.333333 | 2 | 1.33333333 | 0.666666667 | 7 | 14 |
| | | | Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS |
| | | | 2 | 1.333333 | 14 | 14 | Combina- | 1,4,6 | 1.0 | 1.0 | 2.3 | 1.3 | 14 |
| 2 | 4 | 14 | 14 | tion block | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | | |
| 2.333333 | 1.333333 | 14 | 14 | #3 | 1,5,6 | 1.0 | 1.0 | 2.7 | 1.3 | 14 | 14 | | |
| 2 | 4 | 14 | 14 | | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | | |
| 2.333333 | 1.333333 | 14 | 14 | | 2,3,4 | 0.8 | 0.7 | 2.2 | 1.3 | 14 | 14 | | |
| 2 | 4 | 14 | 14 | | GHS Rating | 4 | 4 | 2 | 4 | 14 | 14 | | |
| 2.333333 | 1.333333 | 14 | 14 | | 2,3,5 | 0.8 | 0.7 | 2.5 | 1.3 | 14 | 14 | | |
| 2 | 4 | 14 | 14 | | GHS Rating | 4 | 4 | 2 | 4 | 14 | 14 | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
|----------|-----------|-----------|-----------|------------|------------|---------|------------|--------------|-------------|------------|-----------|---------------|---------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | R2314 | #2 | 24 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 4 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 | |
| | | | 14 days | | | | | | | | 0 | | |
| | | | 21 days | | | | | | | | 0 | | |
| | | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | | | R2314 | #2 | 4 | 0 | 0 | 0 | 0.666666667 | 0.33333333 | 0 | 0 | 3 |
| | | | Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS |
| | | | 0.666667 | 0.166667 | 0 | 3 | Combina- | 1,4,6 | 0.0 | 0.0 | 0.7 | 0.3 | 0 |
| 4 | 4 | 0 | 3 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | |
| 0.666667 | 0.166667 | 0 | 3 | #3 | 1,5,6 | 0.0 | 0.0 | 0.7 | 0.3 | 0 | 3 | | |
| 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | |
| 0.666667 | 0.5 | 0 | 3 | | 2,3,4 | 0.0 | 0.0 | 0.7 | 0.2 | 0 | 3 | | |
| 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | |
| 0.666667 | 0 | 0 | 3 | | 2,3,5 | 0.0 | 0.0 | 0.7 | 0.2 | 0 | 3 | | |
| 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
|------------------------------|--------------------|--------------|---------|---------|----------|----------|------------|------------------------------|--------------|---------|---------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F38951 | #1 | 24 | 1 | 4 | 1 | 2 | 2 | 1 | 35 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 1 | 0 | 21 | 7 | |
| | | | 72 | 1 | 1 | 1 | 2 | 1 | 0 | 16 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DIC EPA | DIC GHS | |
| | F38951 | #1 | 35 | 1 | 2.333333 | 1 | 2 | 1.333333333 | 0.333333333 | 7 | 14 | |
| | Combinatio Opacity | | | Iris | Redness | Chemosis | DIC EPA | DIC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.8 | 0.7 | 2.5 | 1.3 | 14 | 14 | Combina- tion block #5 | 3,4,5 | 1.0 | 1.0 | |
| | GHS Rating | 4 | 4 | 2 | 4 | 14 | 14 | GHS Rating | | 2 | 4 | |
| | 2,4,5 | 1.0 | 1.0 | 2.5 | 1.3 | 14 | 14 | 3,4,6 | | 1.0 | 1.0 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | | 2 | 4 | |
| | 2,4,6 | 1.0 | 1.0 | 2.5 | 1.3 | 14 | 14 | 3,5,6 | | 1.0 | 1.0 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | | 2 | 4 | |
| | 2,5,6 | 1.0 | 1.0 | 2.7 | 1.3 | 14 | 14 | 4,5,6 | | 1.0 | 1.0 | |
| GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | | 2 | 2 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | R2299 | #2 | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DIC EPA | DIC GHS | |
| | R2299 | #2 | 2 | 0 | 0 | 0 | 0.66666667 | 0 | 0 | 0 | 3 | |
| | Combinatio Opacity | | | Iris | Redness | Chemosis | DIC EPA | DIC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.0 | 0.0 | 0.7 | 0.5 | 0 | 3 | Combina- tion block #5 | 3,4,5 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | | 4 | 4 | |
| | 2,4,5 | 0.0 | 0.0 | 0.7 | 0.0 | 0 | 3 | 3,4,6 | | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | | 4 | 4 | |
| | 2,4,6 | 0.0 | 0.0 | 0.7 | 0.3 | 0 | 3 | 3,5,6 | | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | | 4 | 4 | |
| | 2,5,6 | 0.0 | 0.0 | 0.7 | 0.3 | 0 | 3 | 4,5,6 | | 0.0 | 0.0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | GHS Rating | | 4 | 4 | | |

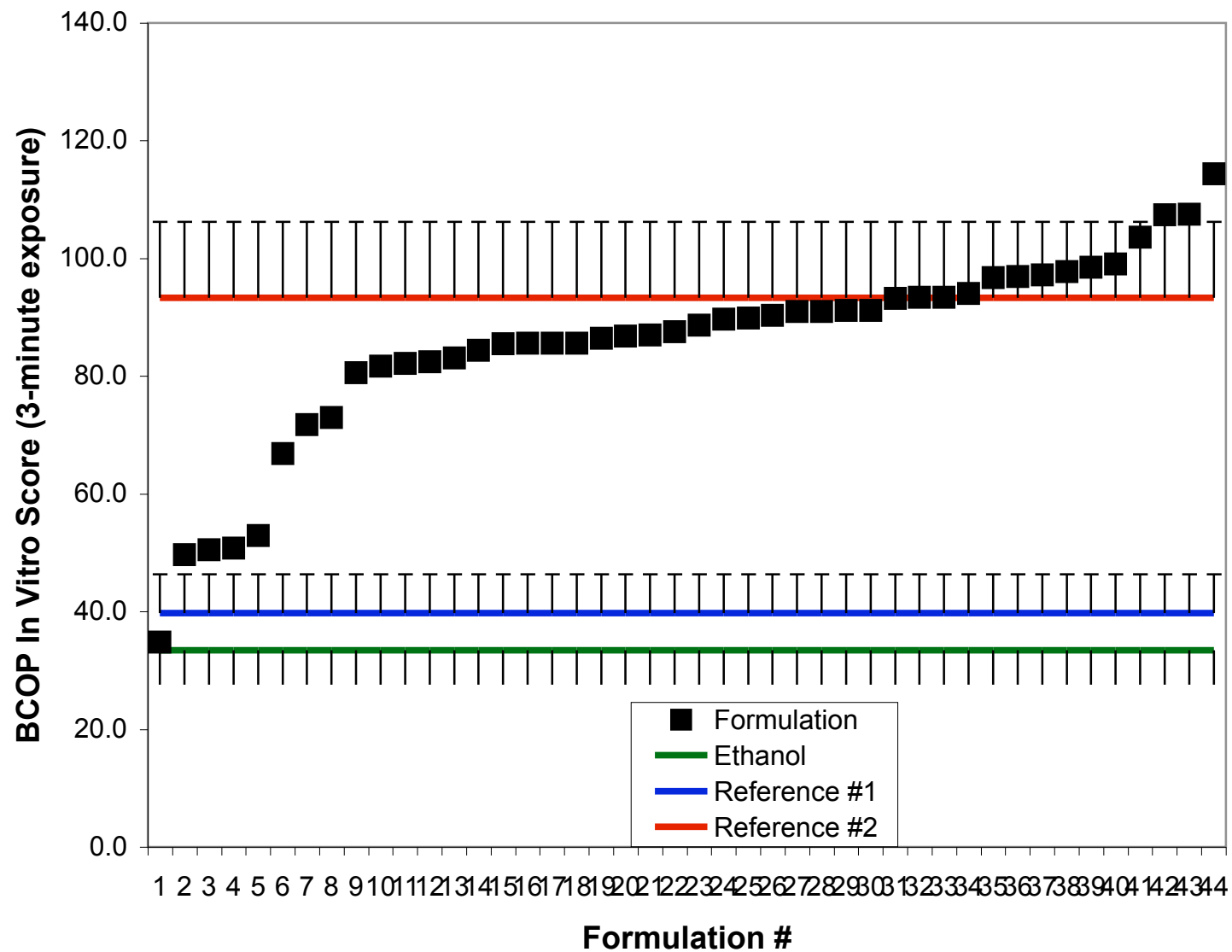
In Vivo Data - S.C. Johnson Submission Dated September 3, 2004

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|---------|----------|------|----------------|--------------|-----------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F38952 | #1 | 24 | 1 | 4 | 1 | 2 | 2 | 3 | 39 | EPA | |
| | | | 48 | 1 | 3 | 1 | 3 | 1 | 2 | 32 | 14 | |
| | | | 72 | 1 | 1 | 1 | 3 | 1 | 1 | 20 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DIC EPA | DIC GHS | |
| | F38952 | #1 | 39 | 1 | 2.666667 | 1 | 2.6666667 | 1.333333333 | 2 | 14 | 14 | |
| Redness | Chemosis | DIC EPA | DIC GHS | | | | | | | | | |
| 2.3 | 1.3 | 14 | 14 | | | | Summary | 1,2,3 | 2 | 14 | | |
| 2 | 4 | 14 | 14 | | | | #1 | 1,2,4 | 2 | 14 | | |
| 2.3 | 1.3 | 14 | 14 | | | | | 1,2,5 | 2 | 14 | | |
| 2 | 4 | 14 | 14 | | | | | 1,2,6 | 2 | 14 | | |
| 2.7 | 1.3 | 14 | 14 | | | | | 1,3,4 | 2 | 14 | | |
| 2 | 4 | 14 | 14 | | | | | 1,3,5 | 2 | 14 | | |
| 2.7 | 1.3 | 14 | 14 | | | | | 1,3,6 | 2 | 14 | | |
| 2 | 4 | 14 | 14 | | | | | 1,4,5 | 2 | 14 | | |
| 2.7 | 1.3 | 14 | 14 | | | | | 1,4,6 | 2 | 14 | | |
| 2 | 4 | 14 | 14 | | | | | 1,5,6 | 2 | 14 | | |
| | | | | | | | | | 2 | 14 | | |
| | | | | | | | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | R2275 | #2 | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DIC EPA | DIC GHS | |
| | R2275 | #2 | 2 | 0 | 0 | 0 | 0.6666667 | 0 | 0 | 0 | 3 | |
| Redness | Chemosis | DIC EPA | DIC GHS | | | | | | | | | |
| 0.7 | 0.2 | 0 | 3 | | | | Summary | 1,2,3 | 4 | 3 | | |
| 4 | 4 | 0 | 3 | | | | #2 | 1,2,4 | 4 | 3 | | |
| 0.7 | 0.5 | 0 | 3 | | | | | 1,2,5 | 4 | 3 | | |
| 4 | 4 | 0 | 3 | | | | | 1,2,6 | 4 | 3 | | |
| 0.7 | 0.5 | 0 | 3 | | | | | 1,3,4 | 4 | 3 | | |
| 4 | 4 | 0 | 3 | | | | | 1,3,5 | 4 | 3 | | |
| 0.7 | 0.3 | 0 | 3 | | | | | 1,3,6 | 4 | 3 | | |
| 4 | 4 | 0 | 3 | | | | | 1,4,5 | 4 | 3 | | |
| | | | | | | | | 1,4,6 | 4 | 3 | | |
| | | | | | | | | 1,5,6 | 4 | 3 | | |

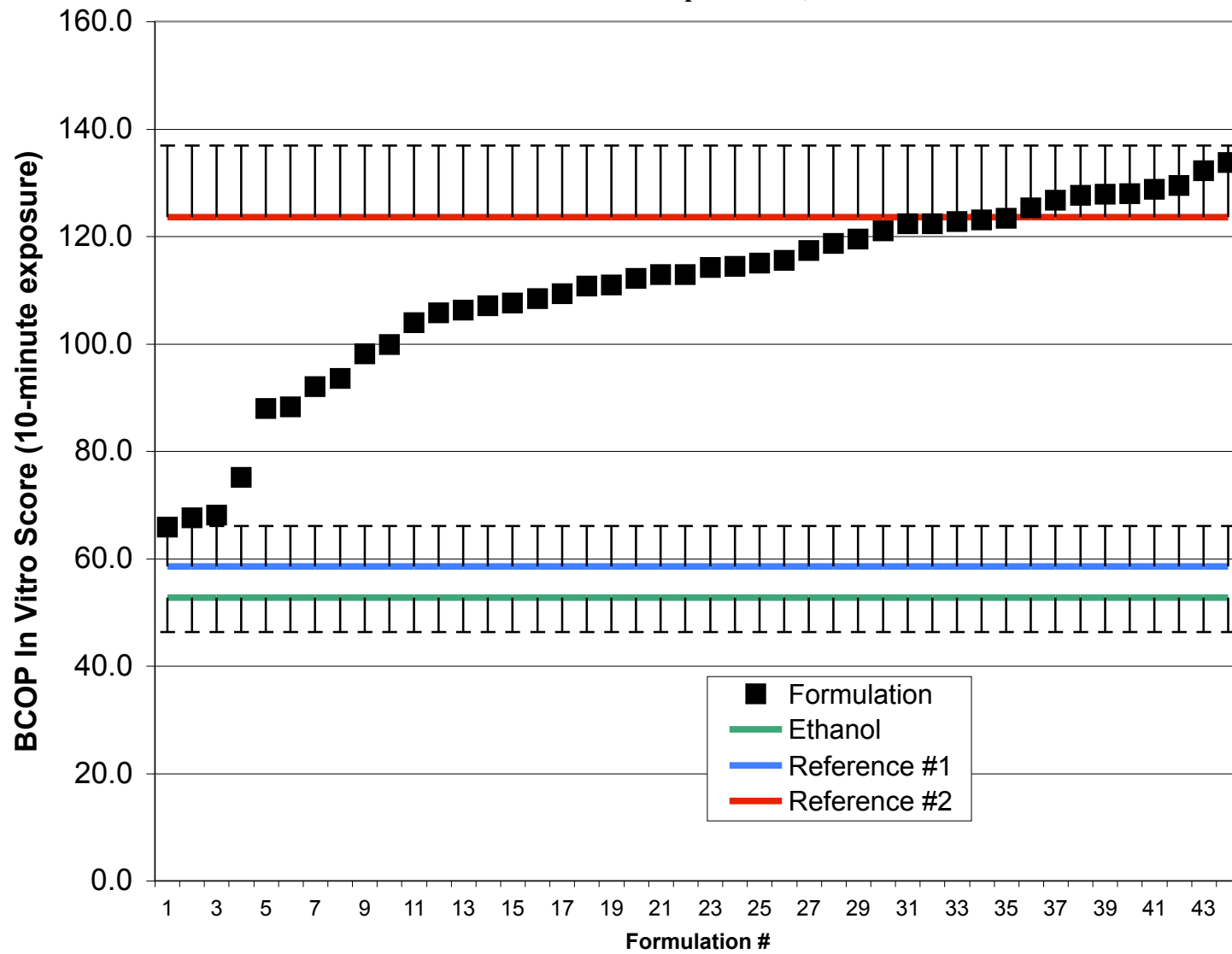
In Vivo Data - S.C. Johnson Submission Dated September 3, 2004

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
|--------|-----------|--------------|---------|---------|----------|------|------------|--------------|-------------|---------|---------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F38953 | #1 | 24 | 1 | 3 | 1 | 2 | 2 | 1 | 30 | EPA | |
| | | | 48 | 1 | 1 | 1 | 3 | 1 | 0 | 18 | 14 | |
| | | | 72 | 1 | 1 | 1 | 3 | 1 | 0 | 18 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 2 | 1 | 0 | 6 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F38953 | #1 | 30 | 1 | 1.666667 | 1 | 2.66666667 | 1.333333333 | 0.333333333 | 14 | 14 | |
| 14 | | 2,3,4 | | 2 | 14 | | | | | | | |
| 14 | | 2,3,5 | | 2 | 14 | | | | | | | |
| 14 | | 2,3,6 | | 2 | 14 | | | | | | | |
| 14 | | 2,4,5 | | 2 | 14 | | | | | | | |
| 14 | | 2,4,6 | | 2 | 14 | | | | | | | |
| 14 | | 2,5,6 | | 2 | 14 | | | | | | | |
| 14 | | 3,4,5 | | 2 | 14 | | | | | | | |
| 14 | | 3,4,6 | | 2 | 14 | | | | | | | |
| 14 | | 3,5,6 | | 2 | 14 | | | | | | | |
| 14 | | 4,5,6 | | 2 | 14 | | | | | | | |
| | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | R2267 | #2 | 24 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 0 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | R2267 | #2 | 4 | 0 | 0 | 0 | 0.66666667 | 0.66666667 | 0 | 0 | 3 | |
| 0 | | 2,3,4 | | 4 | 3 | | | | | | | |
| 0 | | 2,3,5 | | 4 | 3 | | | | | | | |
| 0 | | 2,3,6 | | 4 | 3 | | | | | | | |
| 0 | | 2,4,5 | | 4 | 3 | | | | | | | |
| 0 | | 2,4,6 | | 4 | 3 | | | | | | | |
| 0 | | 2,5,6 | | 4 | 3 | | | | | | | |
| 0 | | 3,4,5 | | 4 | 3 | | | | | | | |
| 0 | | 3,4,6 | | 4 | 3 | | | | | | | |
| 0 | | 3,5,6 | | 4 | 3 | | | | | | | |
| 0 | | 4,5,6 | | 4 | 3 | | | | | | | |

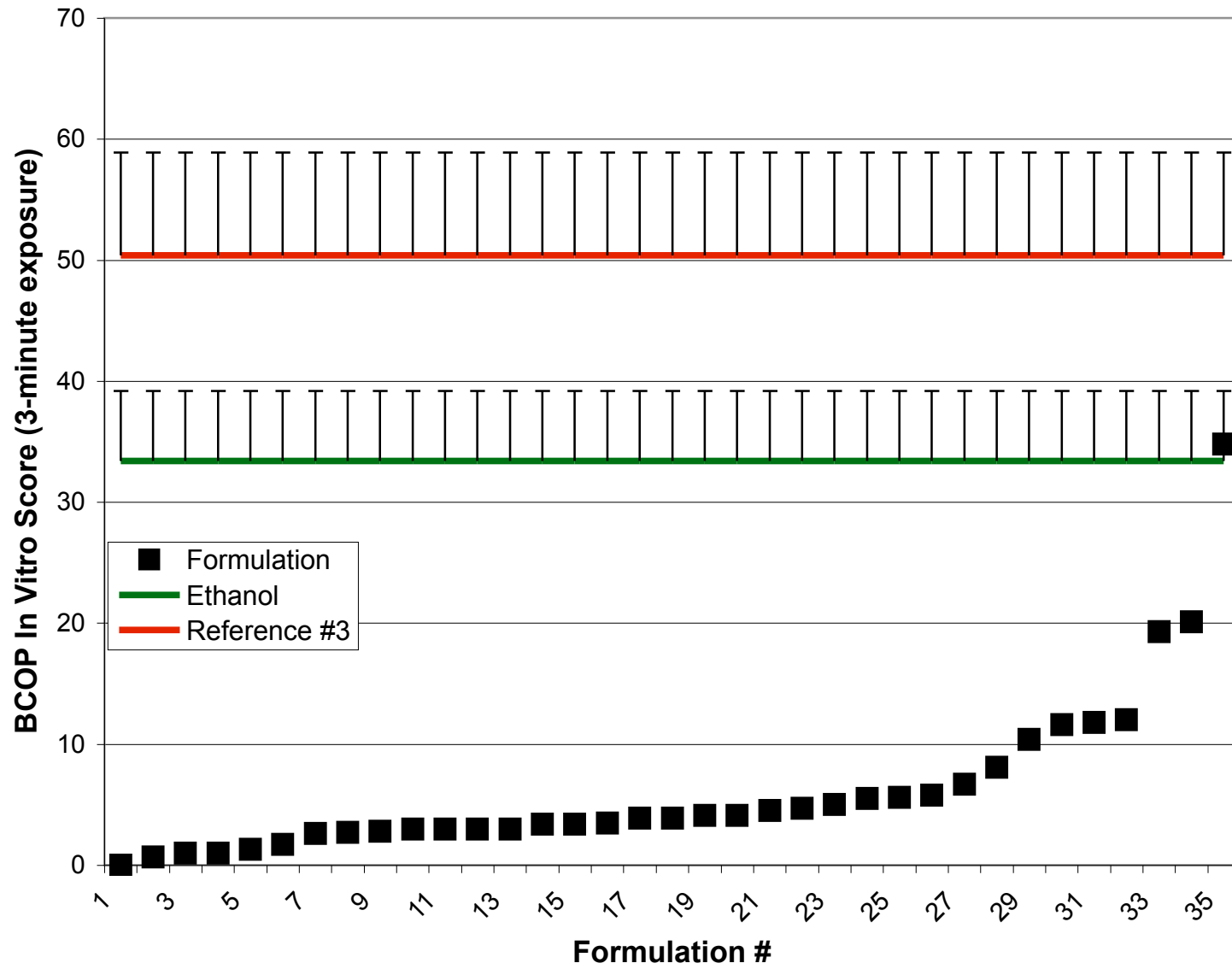
Fragrance Graphs for
SC Johnson Submission
Dated September 3, 2004



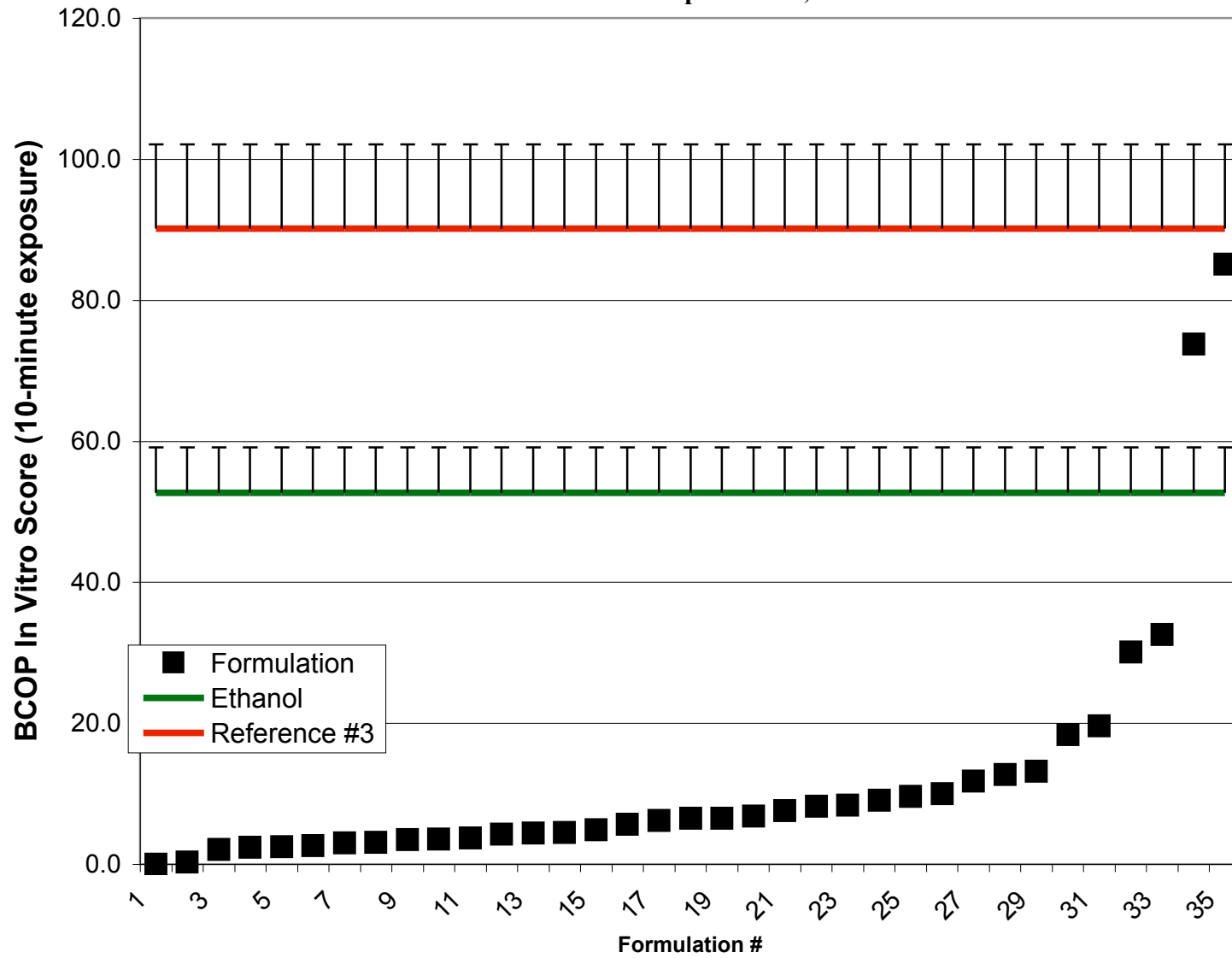
**Fragrance Graphs for
SC Johnson Submission
Dated September 3, 2004**



**Fragrance Graphs for
SC Johnson Submission
Dated September 3, 2004**



**Fragrance Graphs for
SC Johnson Submission
Dated September 3, 2004**



**BCOP Data for SC Johnson Submission
Dated September 3, 2004**

| | | | | |
|--------------|--|--|----------------|-------|
| Ethanol | 3-minute exposure | | | |
| | Opacity | OD490 | In Vitro Score | |
| | Mean | 21.1 | 0.820 | 33.4 |
| | STD | 2.9 | 0.238 | 5.8 |
| | CV | 13.7% | 29.0% | 17.5% |
| | n=7 | | | |
| Ethanol | 10-minute exposure (normal positive control) | | | |
| | Opacity | OD490 | In Vitro Score | |
| | Mean | 31.2 | 1.422 | 52.7 |
| | STD | 4.8 | 0.345 | 6.4 |
| | CV | 15.3% | 24.3% | 12.1% |
| | n = 632 | | | |
| | Oct 1997 to the present | | | |
| Reference #1 | Alcohol-based benchmark | Used as the first benchmark formulation for the aerosol formulations | | |
| | 3-minute exposure | | | |
| | Opacity | OD490 | IV Score | |
| | Mean | 20.6 | 1.270 | 39.7 |
| | STD | 3.5 | 0.308 | 6.6 |
| | CV | 16.8% | 24.2% | 16.7% |
| | n=21 | | | |
| | 10-minute exposure | | | |
| | Opacity | OD490 | IV Score | |
| | Mean | 28.6 | 2.001 | 58.5 |
| | STD | 4.1 | 0.415 | 7.6 |
| | CV | 14.3% | 20.7% | 13.0% |
| | n=43 | | | |
| Reference #2 | Ethanol Fragrance benchmark | | | |
| | 3-minute exposure | | | |
| | Opacity | OD490 | IV Score | |
| | Mean | 53.7 | 2.6 | 93.3 |
| | STD | 8.5 | 0.5 | 12.9 |
| | CV | 15.8% | 20.0% | 13.8% |
| | n=32 | | | |
| | 10-minute exposure | | | |
| | Opacity | OD490 | IV Score | |
| | Mean | 81.5 | 2.805 | 123.6 |
| | STD | 11.9 | 0.520 | 13.3 |
| | CV | 14.6% | 18.5% | 10.8% |
| | n=32 | | | |
| Reference #3 | Fragrance benchmark (no ethanol) | | | |
| | 3-minute exposure | | | |
| | Opacity | OD490 | IV Score | |
| | Mean | 39.9 | 0.693 | 50.4 |
| | STD | 6.0 | 0.238 | 8.5 |
| | CV | 14.9% | 34.3% | 16.8% |
| | n=84 | | | |
| | 10-minute exposure | | | |
| | Opacity | OD490 | IV Score | |
| | Mean | 61.0 | 1.941 | 90.1 |
| | STD | 7.9 | 0.459 | 12.0 |
| | CV | 12.9% | 23.7% | 13.3% |
| | n=90 | | | |

FORMULAS

| Test Material # | Group | Raw Material | Percentage |
|-----------------------|--|----------------------------------|-----------------------|
| 1 | Fragrance Benchmark (Reference #3) | Fragrance Thickener | 95-100 0-5 |
| 2 | Ethanol/ Fragrance Benchmark (Reference #2) | Ethanol Fragrance | 70-75 25-30 |
| 3, 4 | Alcohol-based Benchmark (Reference #1) | Alcohol Active Dimethicone | 85-90 10-15 1-5 |
| 5 | Ethanol | Fragrance Ethanol | < 1 100 |
| Fragrance Formulas | Membrane Formula | Fragrance Thickener | 95-100 0-5 |
| Fragrance Formulas | Aerosol Formula-1 ¹ | Alcohol Fragrance | 70-75 25-30 |
| Fragrance Formulas | Aerosol Formula-2 | Alcohol Fragrance | 80-85 15-20 |
| Fragrance Formulas | Aerosol Formula-3 | Alcohol Fragrance | 90-95 5-10 |

¹Most aerosol formulas fall within this category

Appendix G3

**Dataset Received from S.C. Johnson & Son, Inc. in Support of
Gran et al. (2003) Poster Presentation**

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A FAMILY COMPANY

S.C. Johnson & Son, Inc.
Worldwide Consumer Products, RD & E
Global Safety Assessment and Regulatory Affairs, Product Toxicology
MS 139 1525 Howe Street, Racine WI 53403

October 13, 2004

Christina Inhof, MSPH
Senior Project Coordinator/Technical Writer ILS, Inc.
NICEATM
P.O. Box 12233
NIEHS MD EC-17
Research Triangle Park, NC 27709

Christina,

Hi! How are you? I am happy to be submitting data on sodium percarbonate, which was discussed in the poster citation listed below:

Gran B.P., Swanson J.E., Merrill J.C., and Harbell J.W. 2003. Evaluating the irritancy potential of sodium percarbonate: A case study using the bovine corneal opacity and permeability (BCOP) assay. *The Toxicologist*, Abstract Number 1066, Volume 72, Number S-1, March 2003.

Included with this submission are the following documents:

1. Cover letter
2. Poster text
3. Histology slides
4. Coded formula spreadsheet

Study Protocols:

The standard Draize protocol was used by the supplier for the *in vivo* studies. We have been granted permission to share this data on sodium percarbonate for the purpose of this review. Due to the powdered form of the raw material, a bulk density determination was made to determine the weight equivalent of a 100 uL dose. Because significant irritation was observed in the acute dermal study, anesthetic was applied to the rabbit eyes five minutes prior to dosing in the primary eye irritation study.

The standard BCOP protocol for solid test articles was not used for the *in vitro* work at IIVS. Test articles were tested as 50% (w/w) slurry suspensions in sterile, deionized water. Treated corneas were incubated for 10 and 30 minutes with post-exposure incubation

periods of 4- and 20-24 hours. The details of the protocol are provided in the poster text. Concurrent positive and negative controls were performed with each assay. Negative control corneas were prepared for each post-exposure incubation time.

Formula Spreadsheet:

The formulas listed in this spreadsheet are coded similarly to formulas listed in the poster. Test material number is the unique sample number and the group name denotes formula description. Raw materials are listed followed by their percentages in each formula.

Poster:

The poster offprint is not included. John Harbell sent it to you previously.

Poster Text:

A word document consisting of poster text and tables is included in this submission for ease of reading. This document highlights where the histology slides should be inserted for ease of understanding.

Histology Slides:

Histology slides should be referenced on page 8.

Data Worksheet:

Since the rabbit study was terminated at 96 hours because of the severe nature of the responses, we must assume that the *in vivo* response fits Category 1 (both GHS and EPA). The 96-hours readings are listed in the table below:

| Animal | Opacity | Area | Iris | Redness | Chemosis | Discharge |
|--------|---------|------|------|---------|----------|-----------|
| 1 | 3 | 1 | 1 | 3 | 2 | 2 |
| 2 | 3 | 4 | a | 3 | 3 | 0 |
| 3 | 3 | 1 | a | 3 | 3 | 2 |
| 4 | 1 | 1 | 0 | 3 | 2 | 0 |
| 5 | 3 | 4 | a | 3 | 4 | 3 |
| 6 | 2 | 4 | 1 | 3 | 3 | 1 |

a – Iris could not be scored because of severe corneal opacity

Summary:

The standard BCOP protocol for solids was not utilized in this investigation of sodium percarbonate. The standard protocol, developed for pharmaceutical intermediates that are relatively insoluble, calls for using a 20% suspension with a 4-hour exposure time. Based on past experience with the BCOP assay, the eye irritancy potential of more aqueous-soluble

solids such as laundry powders using the standard solids protocol is vastly overpredictive of the outcome resulting from accidental human exposure. Furthermore, experience has shown that reactive/oxidizing chemistries (such as bleach, percarbonates and peroxides) have a delayed toxicity response in the assay necessitating increased post-exposure observation time.

The question the investigators faced in this case study of sodium percarbonate was what protocol parameters were needed to model the bolus exposure for an extended period that occurs in the Draize eye irritation protocol as well as what might be expected to be a realistic maximum exposure for humans. The following parameters were chosen: A 50% suspension of the solid with a 30-minute exposure time to model the *in vivo* exposure and 10-minute exposure time to model maximum accidental human exposure. While post-exposure time in the BCOP is typically 2 hours, times of 4 and 20-24 hours were chosen.

Utilizing the protocol considerations discussed above, the BCOP assay was able to adequately predict the irritancy potential of two different concentrations of sodium percarbonate for both a realistic human exposure scenario and an *in vivo* exposure scenario. Reduction of sodium percarbonate concentration predictably reduced the irritancy potential of the end-use formulation. Histology as a third endpoint in the BCOP assay was critical in evaluating the depth and degree of injury.

If you have any questions or comments on this data set, please feel free to contact either Judith Swanson or myself at the following:

Nicole Cuellar
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ncuellar@scj.com

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jeswanso@scj.com

Sincere regards,



Nicole Cuellar
Sr. Research Toxicologist

POSTER TEXT FOR S.C. JOHNSON SUBMISSION DATED OCTOBER 13, 2004**TITLE**

EVALUATING THE IRRITANCY POTENTIAL OF SODIUM PERCARBONATE: A CASE STUDY USING THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY.

B.P. Gran¹, J.E. Swanson¹, J.C. Merrill² and J.W. Harbell²

¹S.C. Johnson & Son, Inc. Racine, WI; ²Institute for In Vitro Sciences, Inc., Gaithersburg, MD.

ABSTRACT

Sodium percarbonate ($2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$) is a component in cleaning products but the neat powder has the potential to be highly irritating to the ocular tissue of rabbits (EPA Category I). This injury results from the chemical's reactivity and dosing method that may trap the powder against the eye. In the BCOP assay, experience has now shown that oxidizing/reactive materials often require a longer post-exposure time to fully manifest cytopathic changes. When testing reactive chemistries, the post-exposure incubation times are increased from 2 hours to 4 and 24 hours. Exposure times of 10, 20, 30 and 60 minutes were used in this study. Sodium percarbonate and percarbonate-based formulations were evaluated as 50% suspensions in water. Abattoir-derived corneas were received, mounted, exposed to test materials, and opacity, permeability and histological endpoints measured as previously reported Curren et al.(2000). Opacity and permeability scores increased with increasing exposure times and concentration of percarbonate. After the 10-minute exposure to percarbonate alone, the 4-hour post-exposure corneas showed focal epithelial layer changes that progressed to a loss of epithelium after 24 hours. Stromal damage included collagen matrix vacuolization and loss of basophilic components in the keratocyte cytoplasm. Exposures of 20 minutes or greater led to rapid destruction of both the epithelial and stromal cells and marked collagen matrix swelling. Tissue lesions declined rapidly with decreasing percarbonate concentration. Thus, the marked ocular damage induced by neat percarbonate in the rabbit, could also be reproduced in the modified BCOP. These data suggest that the modified BCOP assay can be effectively used to evaluate the safety of percarbonate-based formulations and lead to appropriate labeling and packaging decisions.

INTRODUCTION

The sodium percarbonate molecule owes its current popularity in cleaning products to its capability to be a powerful oxygen generator when combined with water. This crystalline solid is a highly reactive molecule that has been shown to be very irritating to rabbit eye tissue. When rabbits were exposed in the standard EPA Guideline eye irritation assay, corneal epithelial peeling, iridial involvement and severe conjunctival irritation occurred. (supplier data)

An initial investigation of the eye irritation potential of sodium percarbonate using the standard BCOP Assay protocol resulted in a relatively benign profile, a strikingly different result from the *in vivo* study.

This case study of sodium percarbonate presents an effort to understand how a non-animal assay, the BCOP Assay, can be utilized to realistically predict human eye irritancy potential of reactive molecules. The BCOP Assay was chosen for this work as it allows exact control over the exposure times and provides several measures of tissue damage. Exposure times were chosen to encompass the range of effective exposures that might occur in the rabbit. This enabled us to identify the exposure time in the BCOP Assay that resulted in a comparable level of injury to that seen in the rabbit study. Corneal injury was evaluated using the standard BCOP endpoints, opacity and permeability, as well as histological examination.

MATERIALS AND METHODSError! Bookmark not defined.

Bovine Eyes

The BCOP assay was performed following the methods of Sina et al. (1995). Bovine eyes were obtained from a local abattoir as a by-product from freshly slaughtered animals. The eyes were grossly examined for damage and those exhibiting defects were discarded. The corneas were excised such that a 2 to 3 mm rim of sclera was present around the cornea. The corneas were mounted in the holders and the two chambers filled with Minimum Essential Medium Eagle (MEM) without phenol red, supplemented with 1% fetal bovine serum (complete MEM). The corneal holders were incubated at $32 \pm 1^\circ\text{C}$ for a minimum of 1 hour.

Bovine Corneal Opacity and Permeability Assay

After a minimum of 1 hour of incubation, the medium replaced in both chambers and the opacity was determined for each cornea using a Spectro Designs OP-KIT opacitometer. Three corneas, whose opacity readings were close to the median opacity for all the corneas, were selected as the negative control corneas. The medium was then removed from the anterior chamber and replaced with the test article, positive control, or negative control.

Method for Testing Liquid or Surfactant Materials

The test articles were tested as 50% (w/w) slurry suspension in sterile, deionized water. An aliquot of 750 μl of the test article, positive control, or negative control was introduced into the anterior chamber while slightly rotating the holder to ensure uniform distribution over the cornea. A total of three corneas per treatment group were incubated in the presence of each test article at $32 \pm 1^\circ\text{C}$ for 10, 20, or 30 minutes with a post-exposure incubation period of 4, 20, or 24 hours. The negative control was tested, in groups of 3 corneas each, to match the short and long post-exposure incubation periods. The positive control was tested in three corneas at $32 \pm 1^\circ\text{C}$ for 10 minutes with a post-exposure incubation period of two hours. After the test or control article exposure, the epithelial side of the corneas was washed at least three times with complete MEM to ensure total removal of the test or control articles. The anterior chamber was refilled with fresh complete MEM and an opacity measurement was performed. After the post-exposure incubation period, a second measure of opacity was obtained. The corneas designated for the post-exposure incubation periods of 2 or 4 hours did not require refeeding with fresh medium prior to the second measure of opacity. The corneas designated for the over night post-exposure incubation periods were refeed with fresh medium approximately every 6 hours and immediately prior to the second measure of opacity.

After the final opacity measurement was performed, the medium was removed from both chambers of the holder. The posterior chamber was refilled with complete MEM, and 1 ml of a 4 mg/ml fluorescein solution was added to the anterior chamber. The corneas were then incubated in a horizontal position (anterior side up) for approximately 90 minutes at $32 \pm 1^\circ\text{C}$. After the incubation, an aliquot of 360 μl from each chamber was placed into the designated well on a 96-well plate. The optical density at 490 nm (OD_{490}) was determined using a Molecular Devices *V*max kinetic microplate reader.

Opacity Measurement: The change in opacity for each cornea was calculated by subtracting the pre-treatment opacity readings from the final opacity readings. The corrected opacity value of each cornea was calculated by subtracting the average change in opacity of the time-matched negative control corneas from that of each treated cornea. The mean opacity values of each treatment group were then calculated.

Permeability Measurement: The corrected OD₄₉₀ was calculated by subtracting the mean OD₄₉₀ of the time-matched negative control corneas from the OD₄₉₀ value of each treated cornea. The mean OD₄₉₀ values of each treatment group were then calculated.

Histology

The corneas were placed in individual, prelabelled cassettes and fixed for at least 24 hours in 10% buffered formalin. The fixed corneas were transferred to Pathology Associates - A Charles River Company (Frederick, MD) for embedding, sectioning and staining. Each slide was then stained with hematoxylin and eosin. Slides were returned to the Institute for In Vitro Sciences, Inc. for evaluation. Cornea sections were examined for the presence of changes in the epithelial, stromal, and endothelial areas of the tissue. Treated tissues were compared to concurrent negative and positive control tissues. Photomicrographs and thickness measurements were prepared using a Spot Insight (Spot Diagnostic Instruments) digital camera and associated software.

Primary Eye Irritation Study of FB Sodium Percarbonate in Rabbits (1982 EPA Guidelines 81-4)

The primary eye irritation study of sodium percarbonate in six albino rabbits [Hra: (NZW)SPF] was conducted in 1989 according to the 1982 EPA Guidelines for Acute Eye Irritation (81-4). The study was also in accordance with GLP standards of 1983 since the in-life portion of the study was completed before the effective date of the revised standards (9/18/89). A bulk density determination was made to determine the weight equivalent of a 100 µl dose. Due to irritation observed in the acute dermal study, anesthetic was applied to the eyes five minutes prior to dosing. The weight equivalent of 100 µl was placed in the conjunctival sac of rabbit and the eyelids were gently held together for one second. The contralateral eye served as the untreated control. Observations for ocular irritation were made at 1, 24, 48, 72 and 96 hours after treatment. The study was terminated at 96 hours after consultation with Sponsor due to severity of irritation observed. Acute irritation seemed to peak at 48 hours after instillation. (Study information provided by supplier under confidentiality agreement.)

RESULTS

The BCOP Assay was chosen as a non-whole animal tool for evaluating the potential eye irritancy of sodium percarbonate because it allowed exact control over exposure and observation times, and provided several measures of tissue damage. All assays were performed using a 50% slurry of the percarbonate salt in water to model a concentrated solution of the powder when tearing occurs following accidental exposure.

Exposure times were chosen to encompass the range of what might be a realistic worst possible case in accidental human exposure to an exposure time that would approximate the level of injury found in the *in vivo* study. Corneal injury was evaluated initially using opacity and permeability endpoints, the standard BCOP Assay measures of irritation. Since the full manifestation of oxidative damage to cells may be delayed for some hours after exposure with some materials, several post-exposure periods were selected to compare the manifestation of damage over time. Table 1 shows the impact of exposure times and post-exposure observations on the quantitative BCOP endpoints and the effects of reducing the concentration of sodium percarbonate in formulation at two exposure times..

Table 1. BCOP Opacity and Permeability Scores from Sodium Percarbonate Exposure: Impact of Exposure and Post-Exposure Time

| Test Material | Exposure Time | Post-Exposure Incubation Time | Opacity | Permeability | In Vitro Score |
|---|---------------|-------------------------------|---------|--------------|----------------|
| 1. Sodium Percarbonate (500 mg/ml suspension) pH 10.5 | 10 minutes | 4 hours | 8.3 | 0.123 | 10.2 |
| | 30 minutes | 4 hours | 14.0 | 2.598 | 53.0 |
| | 60 minutes | 4 hours | 19.8 | 4.344 | 85.0 |
| | 10 minutes | 24 hours | 16.0 | 0.636 | 25.5 |
| | 30 minutes | 24 hours | 27.7 | 1.392 | 48.5 |
| | 60 minutes | 24 hours | 27.3 | 1.333 | 47.3 |
| 2. Sodium Percarbonate (500 mg/ml suspension) | 10 minutes | 20 hours | 11.0 | 0.025 | 11.4 |
| | 20 minutes | 20 hours | 14.0 | 2.810 | 56.1 |
| 3. Sodium Percarbonate* (300 mg/ml suspension) | 10 minutes | 20 hours | 6.0 | 0.015 | 6.2 |
| | 20 minutes | 20 hours | 13.3 | 0.366 | 18.8 |

*Formulation with 60% sodium percarbonate

Additionally, the corneas were sectioned, stained and examined microscopically for depth of injury and histological markers of irritancy for this oxidative material. Table 2 summarizes morphological changes seen in the corneas for different exposure times at both short-and long-term post-exposure times.

Table 2. Morphological Changes in Corneas Treated with Sodium Percarbonate: Impact of Exposure and Post-Exposure Time

| Test Article Exposure time | Post Exposure time | | | Post Exposure time | | |
|----------------------------------|--|---|---|---|---|--|
| | 4 hours | | | 20 to 24 | | |
| | Epithelium | Stromal Collagen | Keratocytes | Epithelium | Stromal Collagen | Keratocytes |
| 10 min | Surface cells lost but deeper layers remained. Marked focal lesions observed | Increased stromal thickness and moderate CMV* to 40% depth | Moderate increase in cytoplasmic eosinophilia to 40% depth | Surface cells lost and upper wing cells were pyknotic. Deeper cells lost in some fields | Increased stromal thickness and moderate CMV >50% depth | Marked cytoplasmic eosinophilia to 40% depth |
| 20 min** | | | | Epithelium completely lost | Severe CMV throughout the stroma | Few viable cells remained |
| 30 min | Surface cells lost, remaining cells in place but damaged | Marked increase in stromal thickness and CMV past 50% depth | Marked nuclear pyknosis and cytoplasmic eosinophilia – full depth | Epithelium completely lost | Severe CMV throughout the stroma | Few if any viable cells remained |
| 60 min | Epithelium present but not viable | Marked increase in stromal thickness, gas pockets visible | Marked nuclear pyknosis and cytoplasmic eosinophilia – full depth | Epithelium completely lost | Severe CMV throughout the stroma | Few if any viable cells remained |

* CMV = Collagen Matrix Vacuolization

** 20-hour post-exposure time

See attached FIGURES for specific histology slides.

The following Figures illustrate the qualitative changes in corneal tissue that are summarized in Table 2.

- Figures 1 and 2, A, B, & C show normal untreated corneal tissue to afford a basis for comparison with the tissues that have been exposed to percarbonate slurries.
- Figures 3-7, A, B & C show injury to corneal structures at different time periods.
- Figures 8, A, B & C shows the effects of a reduced concentration end-use formulation compared to full-strength percarbonate in Figures 4, A, B & C.

DISCUSSION

- ❑ With reactive molecules like sodium percarbonate, reliance on the traditional 2-hour post exposure incubation in the BCOP assay can be misleading. The delayed manifestation of toxicity requires an increased post-exposure incubation time (see Table 1).
- ❑ The opacity and permeability endpoints may underestimate the toxicity where the epithelium remains physically intact. The focal lesions do not lead to an appreciable increase in permeability scores (see for example Table 1, 10-minute exposures).
- ❑ The pattern of lesions in the corneal epithelium suggests that focal lesions develop which breach the epithelial barrier and allow subsequent penetration into the stroma. This pattern of damage is different from what is observed with exposure to surfactants or solvents where the lesions tend to be more uniformly progressive across the epithelial surface of the cornea.
- ❑ Loss of the corneal epithelium leads to extensive fluorescein permeability while the corneal stroma is in the process of swelling (Table 1, 30- and 60-minute exposures at 4 hours post-exposure). However, once the corneal stroma has swollen, the relative fluorescein permeability decreases (Table 1, 30- and 60-minute exposures at 24 hours post-exposure). Note the stromal thickness in Figures 5C and 6C.
- ❑ The degree and depth of injury to the stromal keratocytes has been shown to be predictive of the degree and duration of ocular injury in vivo (Maurer et al., 2002). Histological evaluation of the bovine corneas, treated in vitro, provides data on keratocyte damage. This damage may not be fully reflected in the opacity and permeability measurements.
- ❑ The Draize Test protocol leads to an overestimation of the irritancy of powders. The effects resulting from the Draize methodology greatly exceed what could realistically be expected from accidental human exposure.. The differences in exposure include: the quantity and location of material instilled, the occlusion and pressure of the crystalline material against the cornea, mechanical abrasion and a different tearing response. (see Bruner's discussion of ocular irritation in Frazier's In Vitro Toxicity Testing, pp.160-161, Wilkie and Wyman's chapter in Hobson's Dermal and Ocular Toxicology, p.487. and Maurer et al., 2002)

CONCLUSION

- Testing reactive molecules, such as sodium percarbonate, requires a modification of the BCOP protocol to fully evaluate the potential for delayed effects on corneal tissue.
- Because important changes may come at the cellular rather than tissue level (see Jester et al. [1998] and Maurer et al. [2001]), histology evaluation is critical as a third end-point in the BCOP Assay for this type of molecule. These combined endpoints allow for the determination of depth and degree of injury that is required to predict irritation potential (see Maurer et al [2002]).
- In the BCOP assay, exposures of greater than 10 minutes to a 50% suspension of sodium percarbonate are required to achieve tissue damage consistent with the damage reported for the rabbit eyes in the Draize test. These data suggest that trapping of the powder against the cornea in the conjunctival sac may appreciably impact its toxicity in the rabbit.
- Reduction of sodium percarbonate concentration greatly reduced the irritancy potential of the test formulation, even in the more exaggerated 20-minute exposure.

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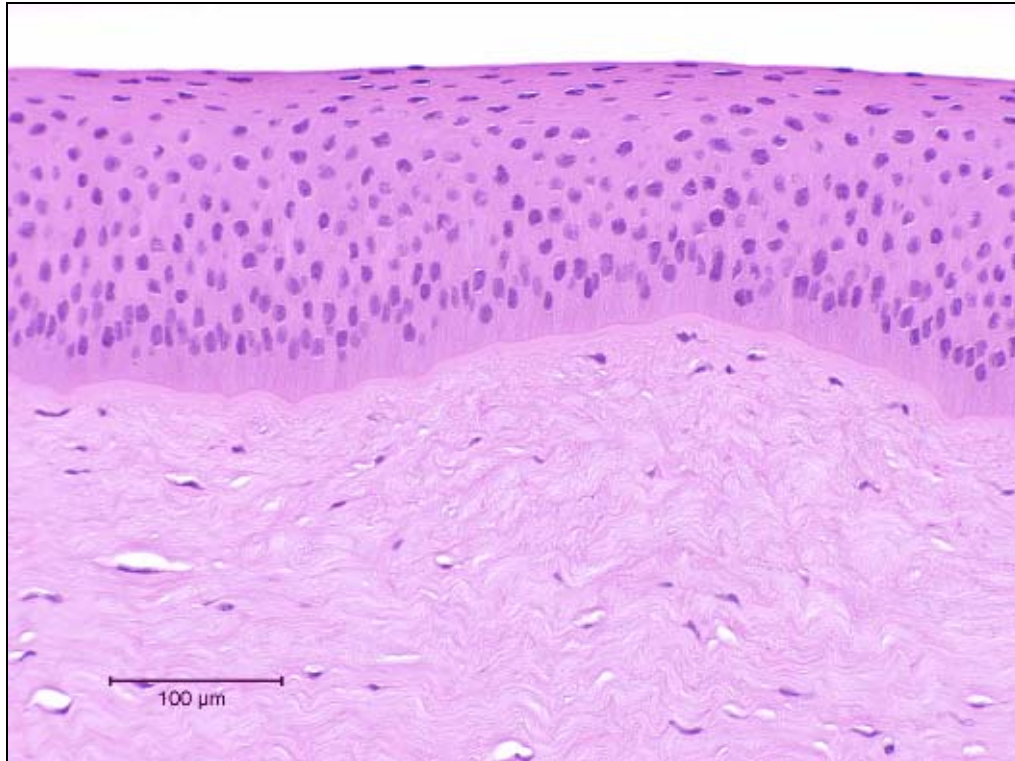
Sina, J.F., Galer, D.M., Sussman, R.G., Gautheron, P.D., Sargent, E.V., Leong, B., Shah, P.V., Curren, R.D., and Miller, K. (1995) A collaborative evaluation of seven alternatives to the Draize eye irritation test using pharmaceutical intermediates. *Fundamental and Applied Toxicology* 26:20-31.

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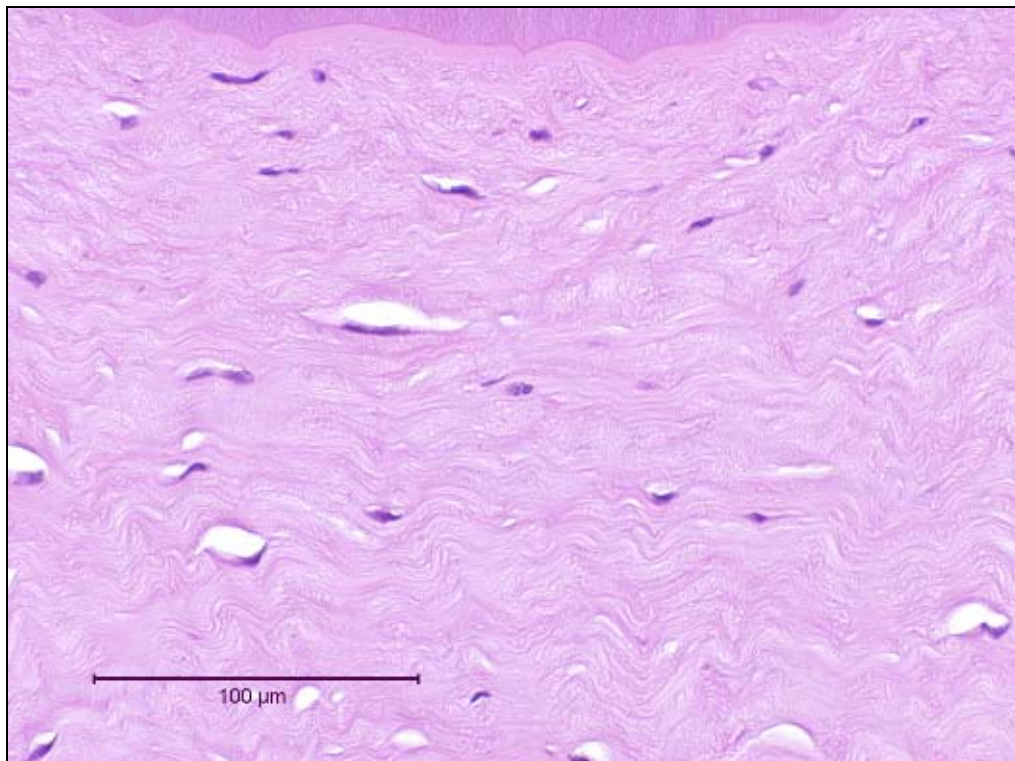
J.E. Swanson, B.T. White, B.P. Gran, J.C. Merrill and J.W. Harbell; 42nd Annual SOT, Poster #1068.

Figure 1. Negative Control, 4-hour post-exposure

(A) Epithelium (magnification 230x)



(B) Stroma directly below the Bowman's Layer (magnification 430x)



(C) Full thickness (magnification 45x)

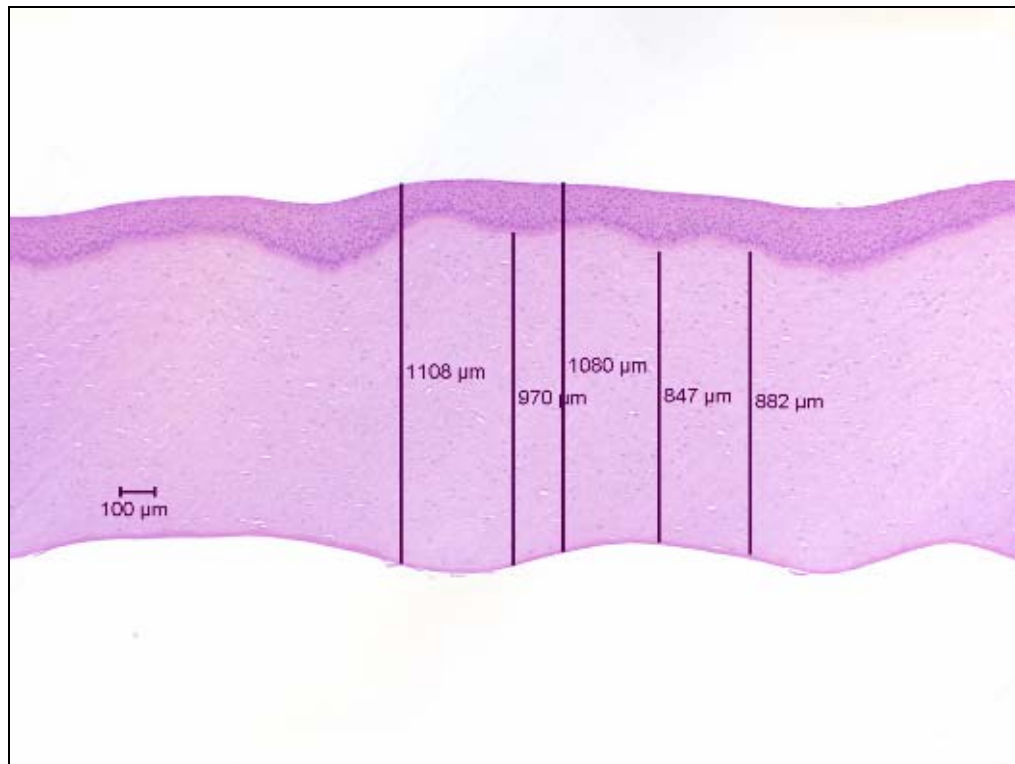
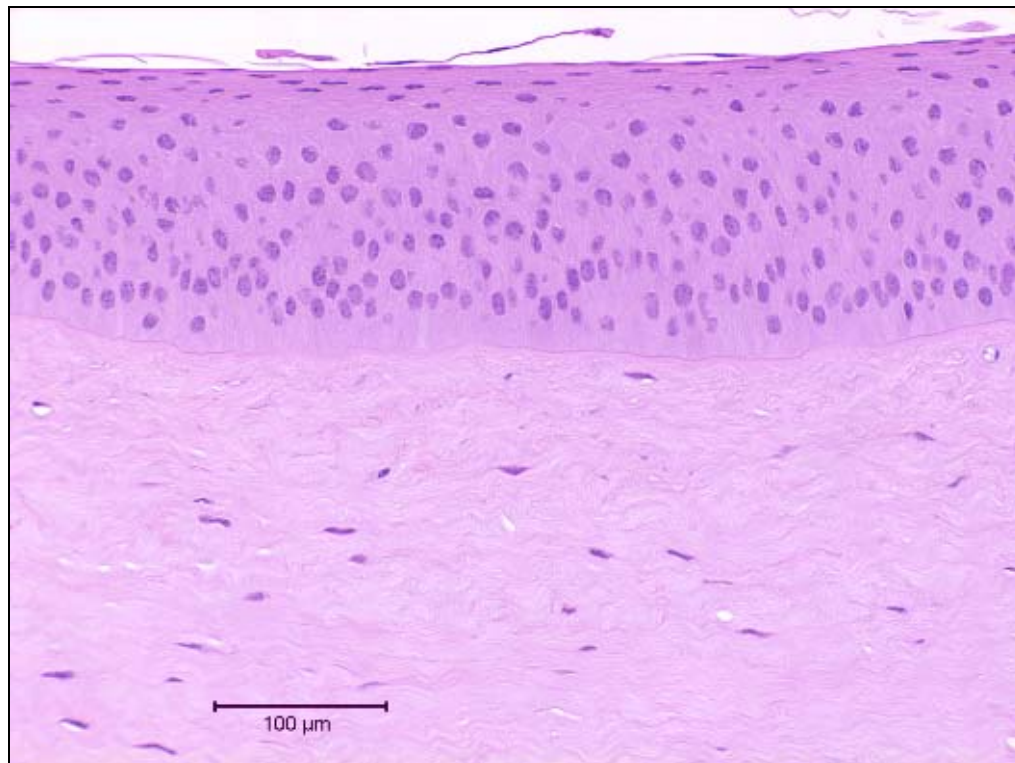
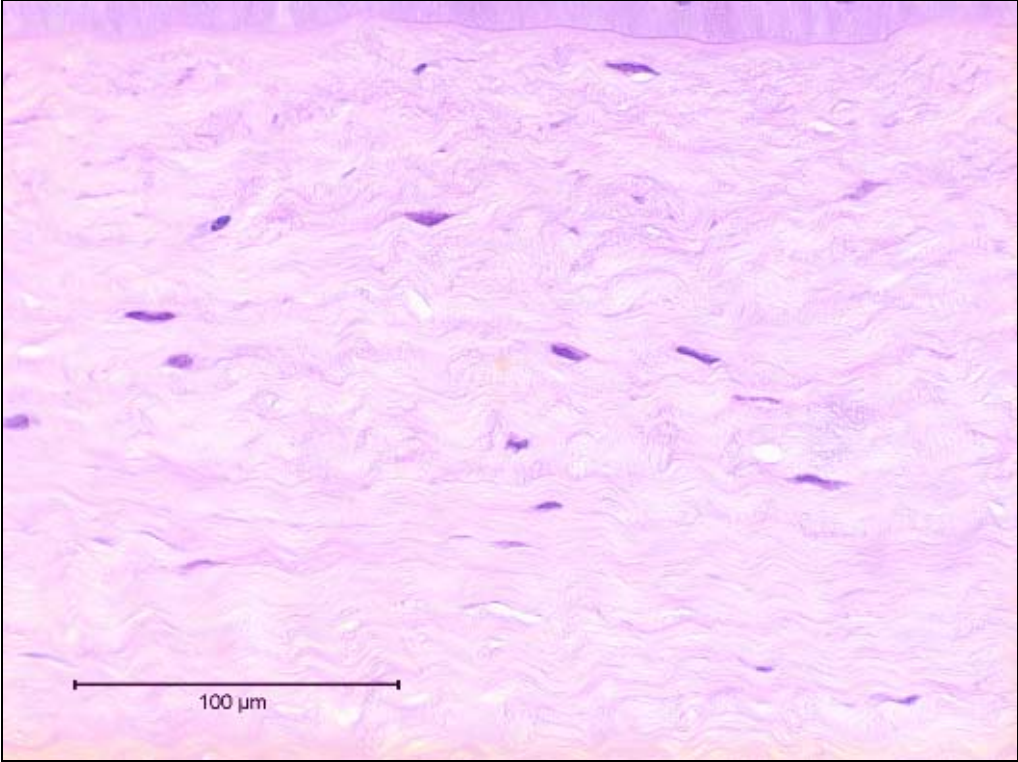


Figure 2. Negative Control, 20-hour post-exposure
(A) Epithelium (magnification 230x)



(B) Stroma directly below the Bowman's Layer (magnification 430x)



(C) Full thickness (magnification 45x)

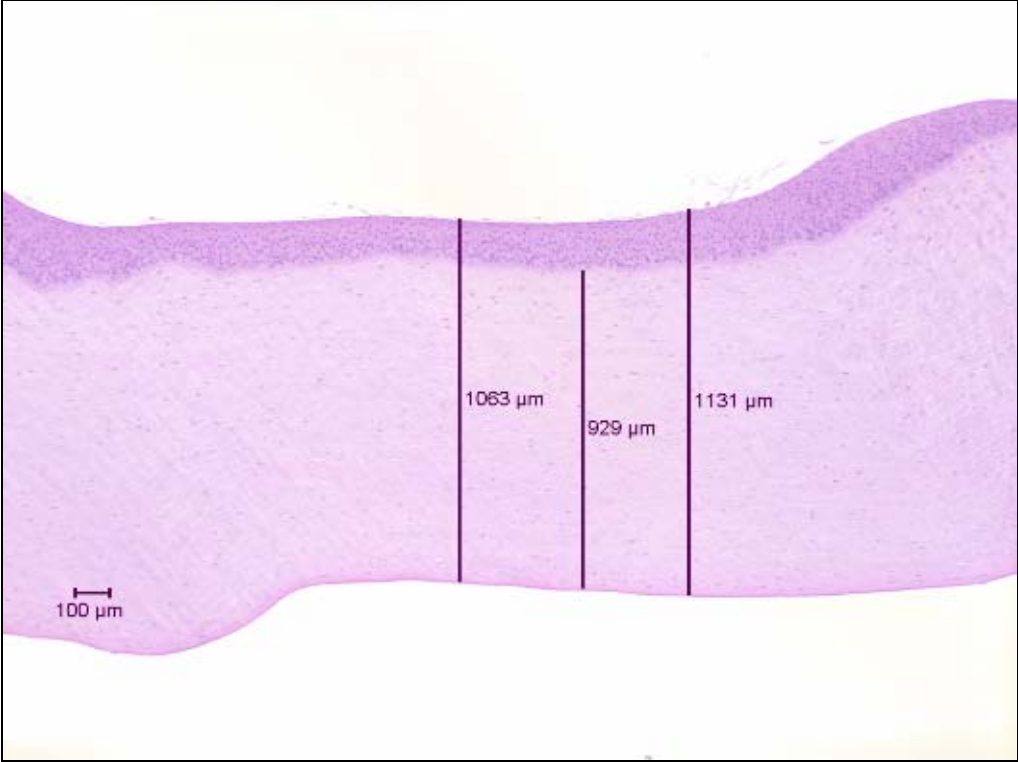
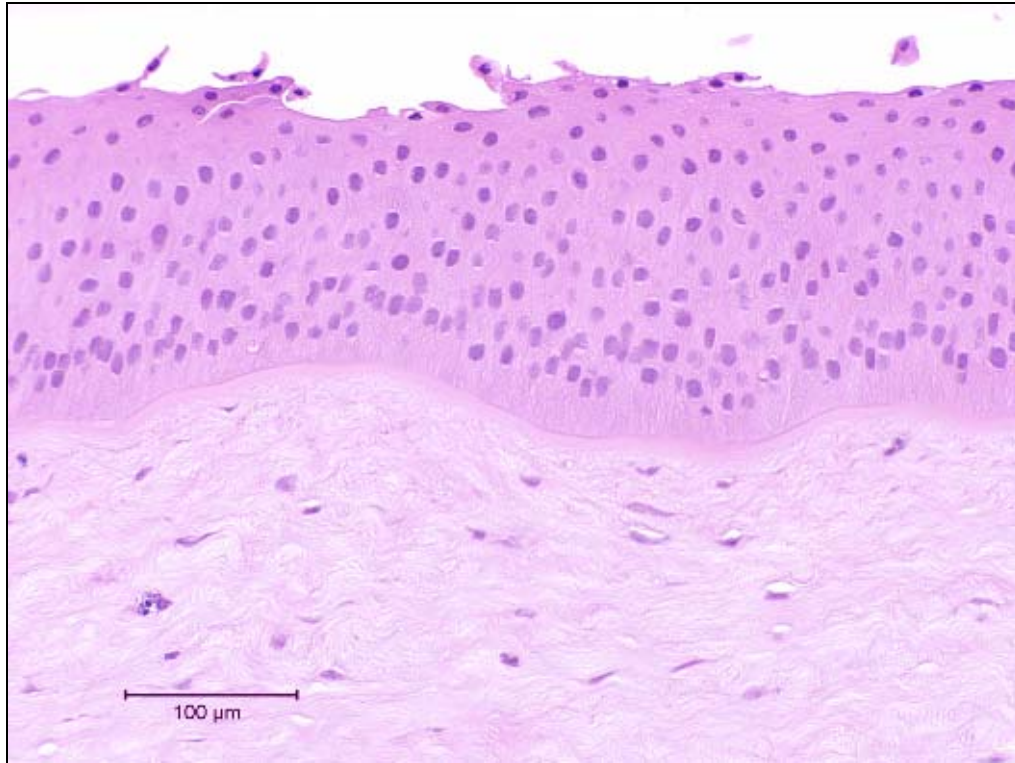
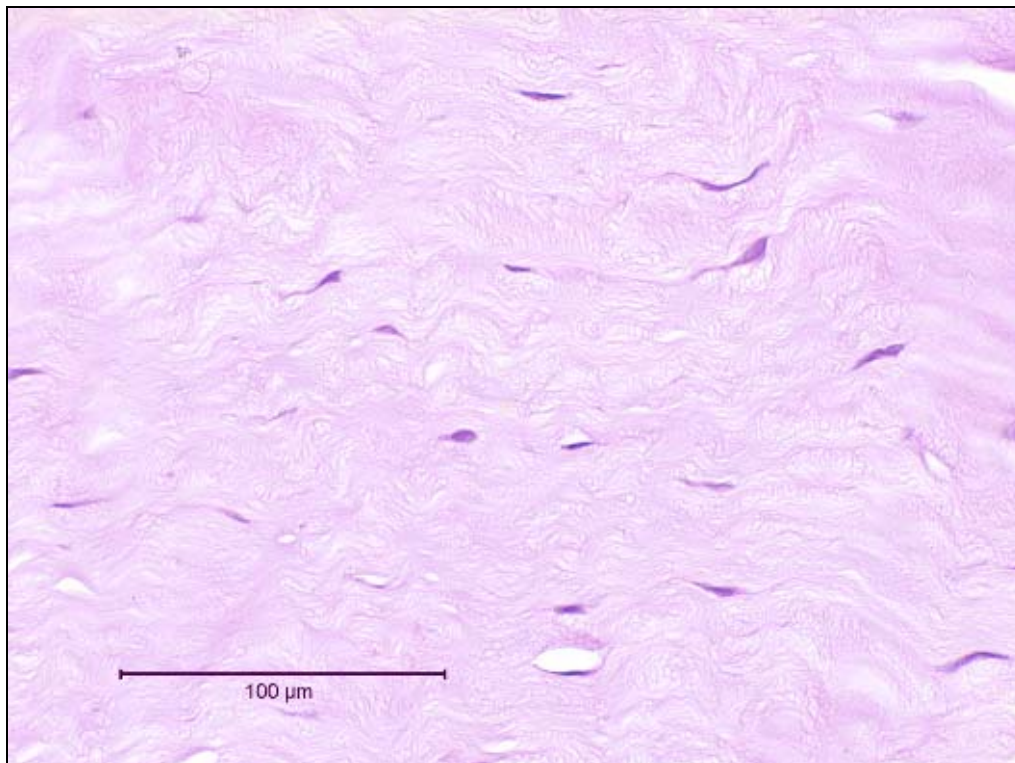


Figure 3. Sodium Percarbonate 50% (w/v) suspension, 10-minute exposure, 4-hour post-exposure
(A) Epithelium (magnification 230x)



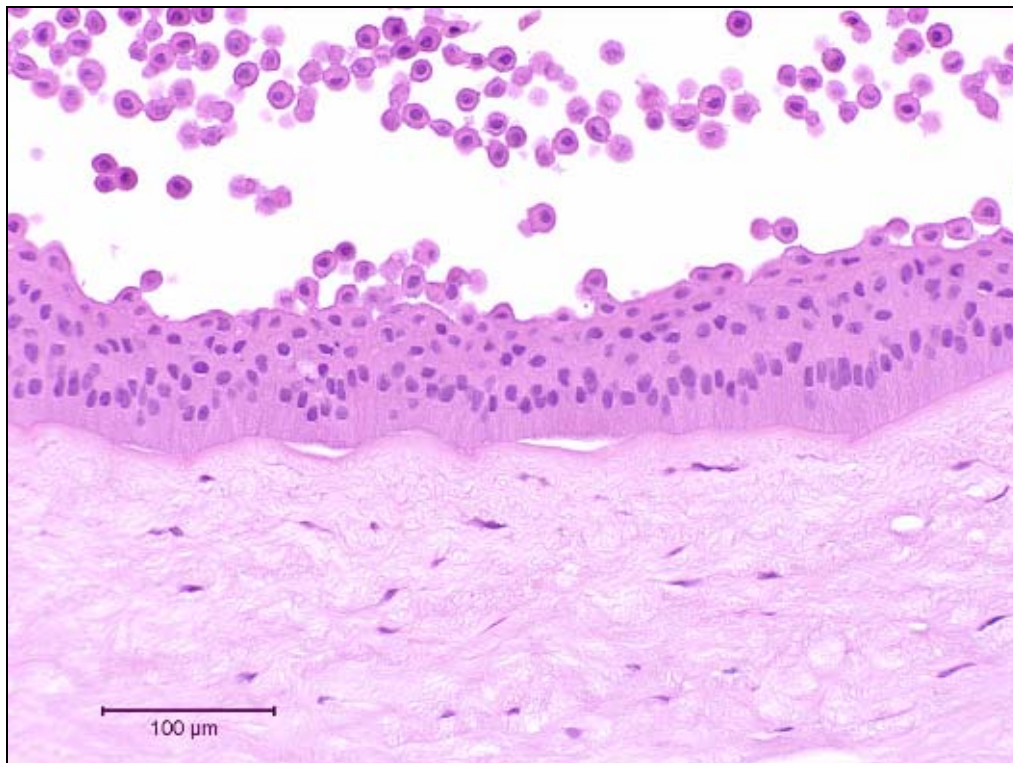
(B) Stroma at mid-depth (magnification 230x)



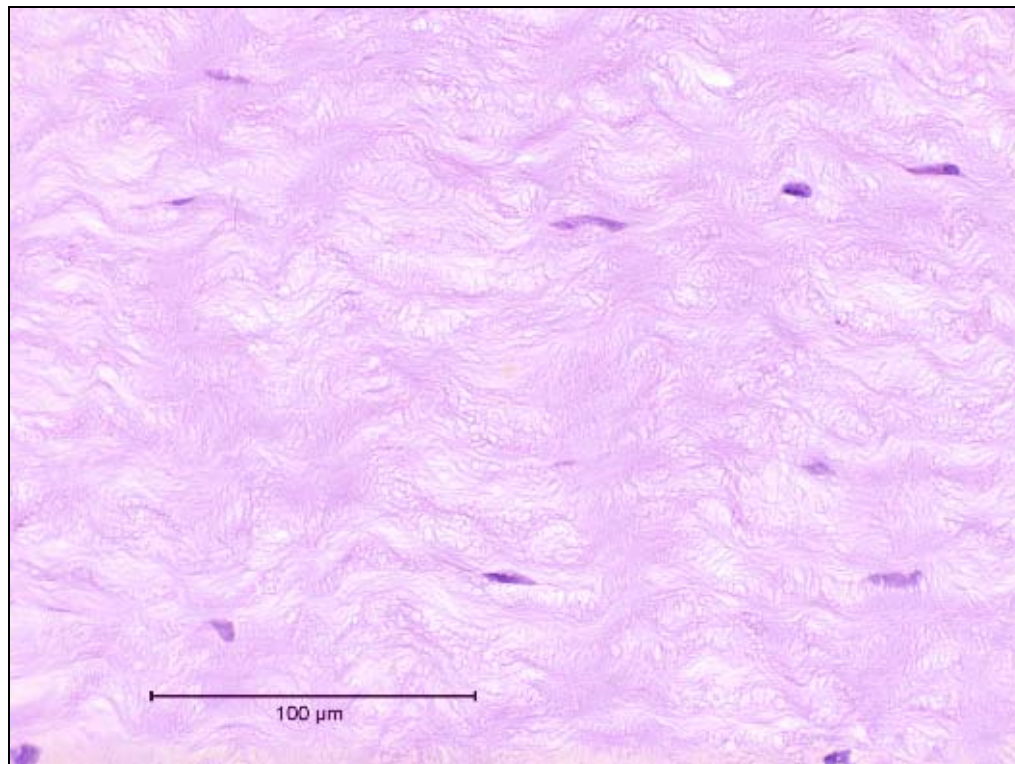
(C) Full thickness (magnification 45x)



Figure 4. Sodium Percarbonate 50% (w/v) suspension, 10-minute exposure, 24-hour post-exposure (A) Epithelium showing marked cell loss (magnification 230x)



(B) Stroma at mid depth showing increased collagen matrix vacuolization (magnification 230x)



(C) Full thickness (magnification 45x)

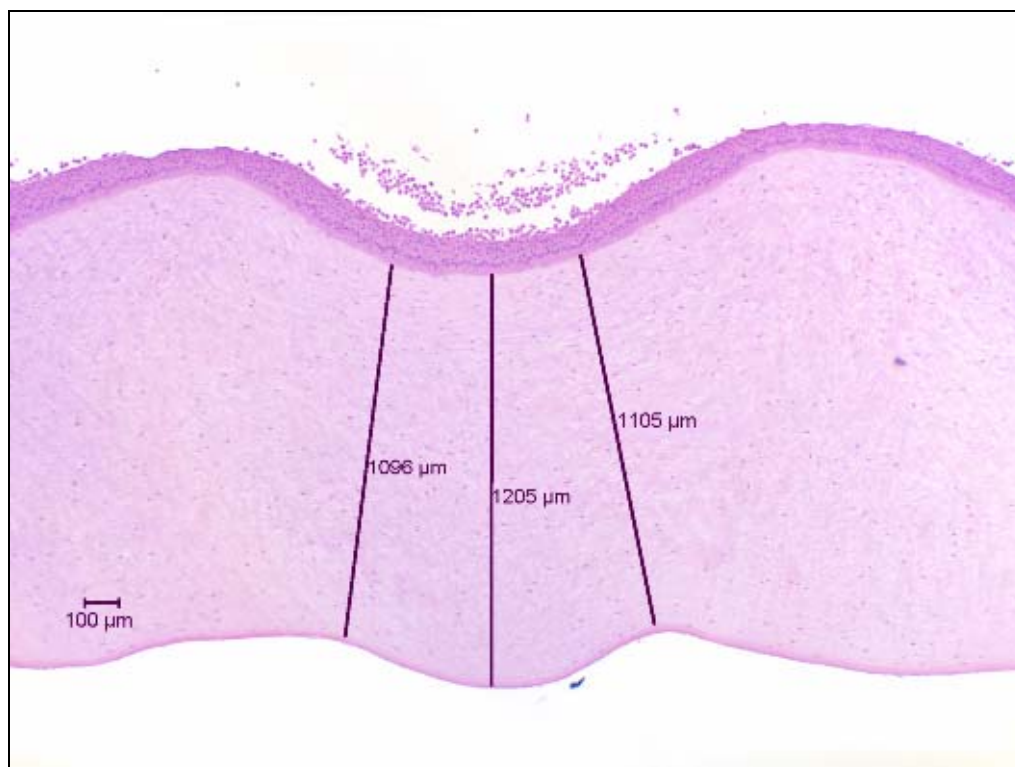
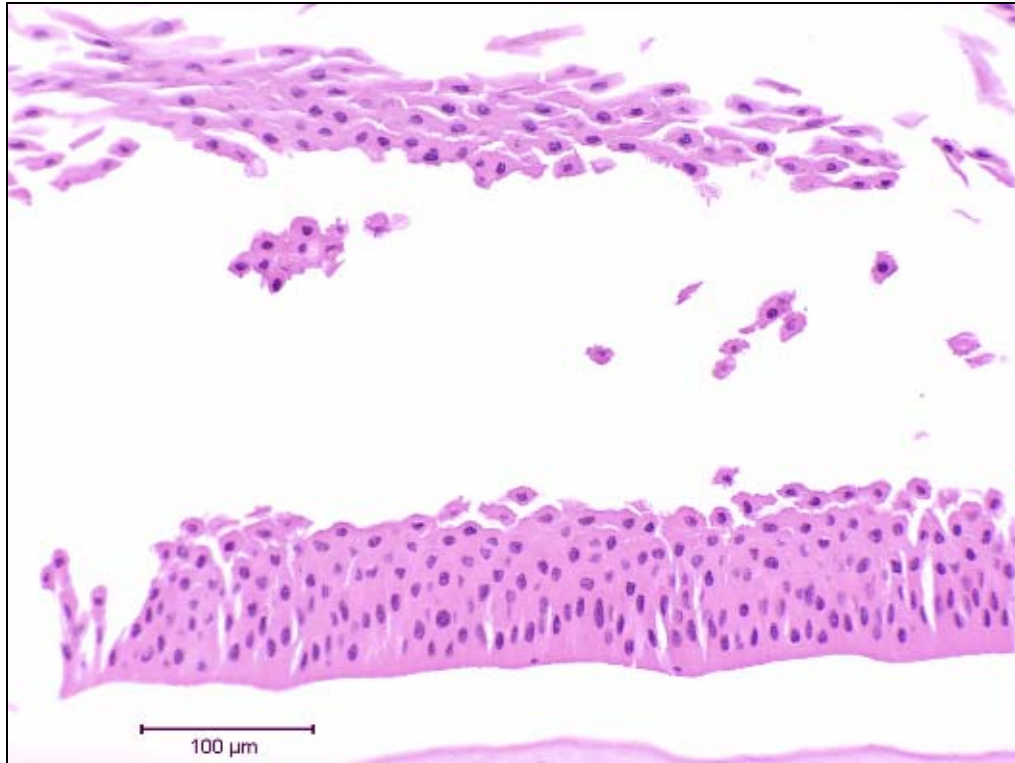
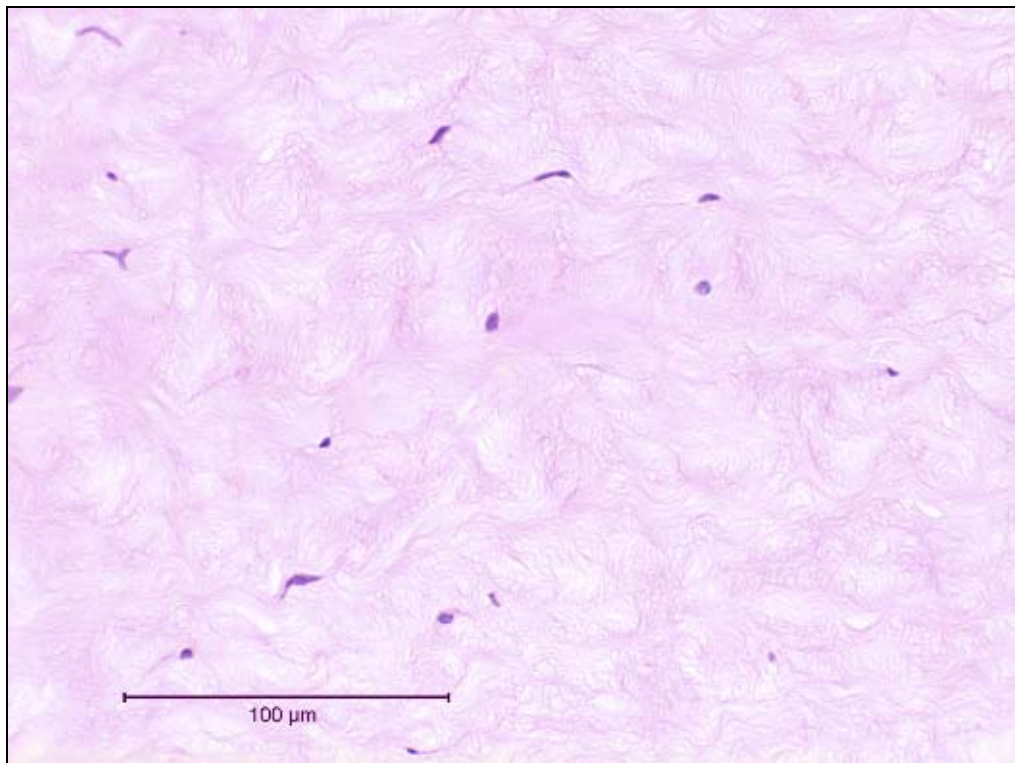


Figure 5. Sodium Percarbonate, 50% (w/v) suspension, 30-minute exposure, 4-hour post-exposure
(A) Epithelium separated from the basal lamina (magnification 230x)



(B) Stroma at mid depth showing marked nuclear pyknosis (magnification 430x)



(C) Full thickness (magnification 45x)

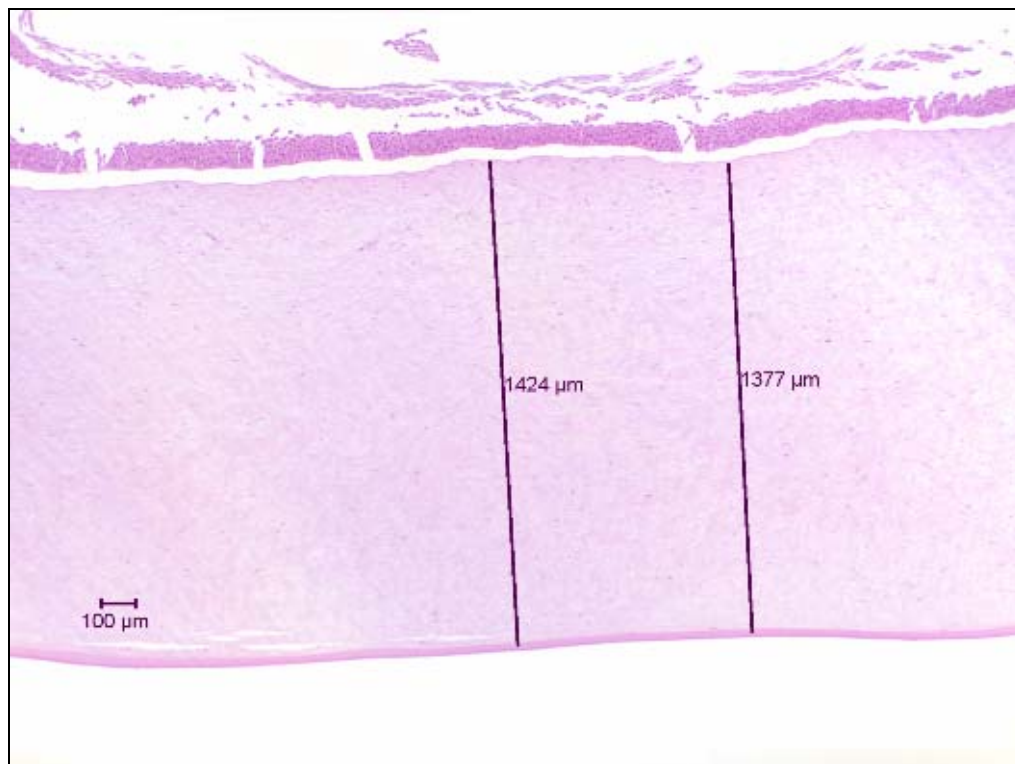
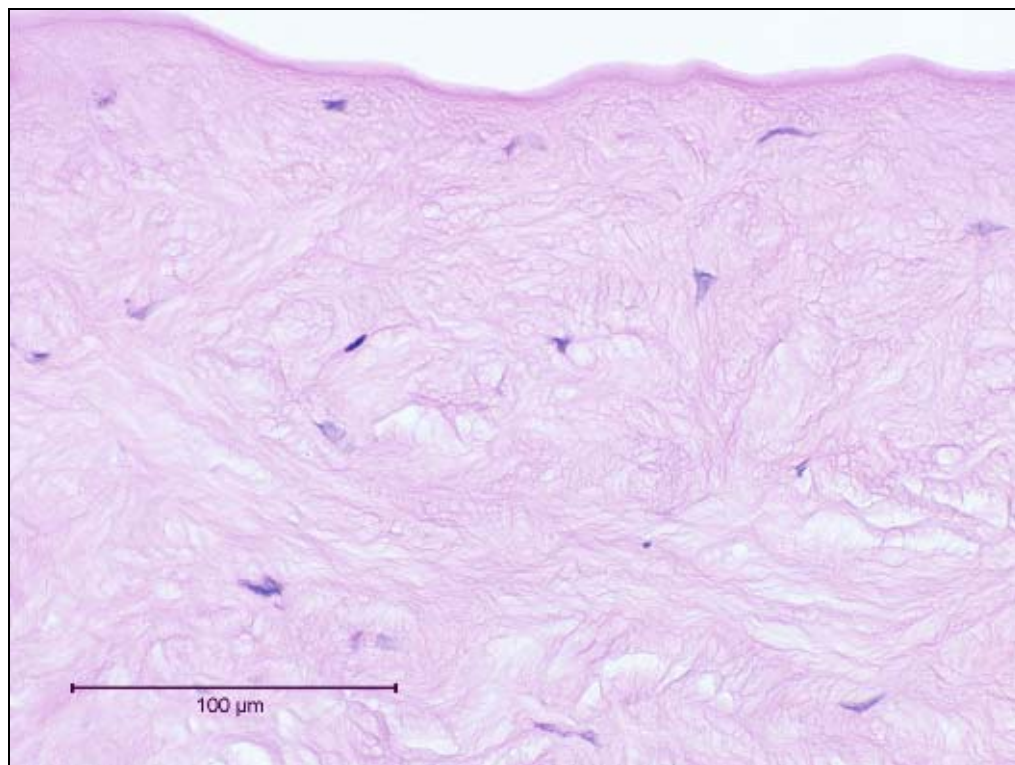
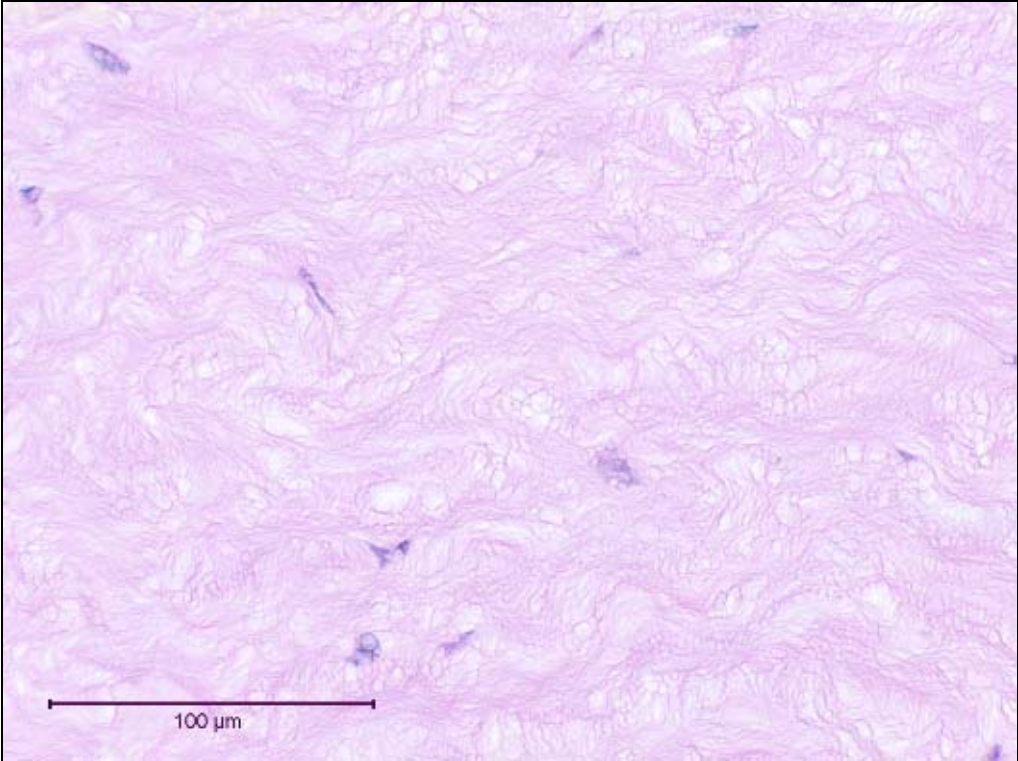


Figure 6. Sodium Percarbonate, 50% (w/v) suspension, 30-minute exposure, 24-hour post-exposure (A) Epithelium (lost) (magnification 430x)



(B) Stroma at mid depth showing marked collagen matrix vacuolization and dead keratocytes (magnification 430x)



(C) Full thickness (magnification 45x)

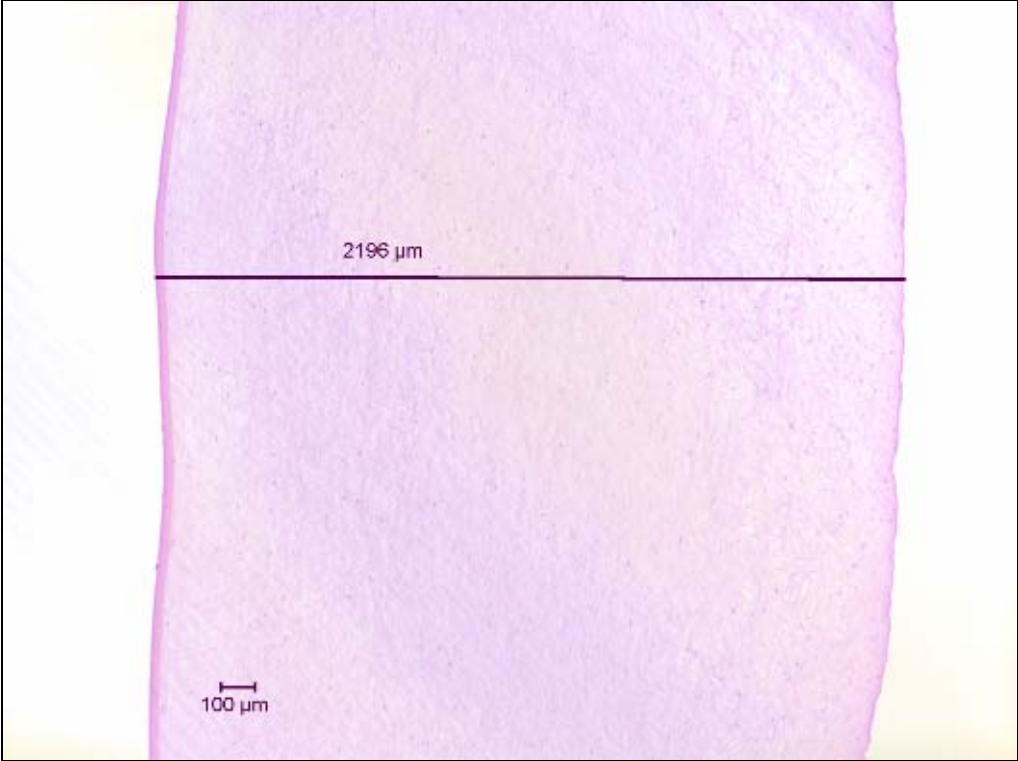
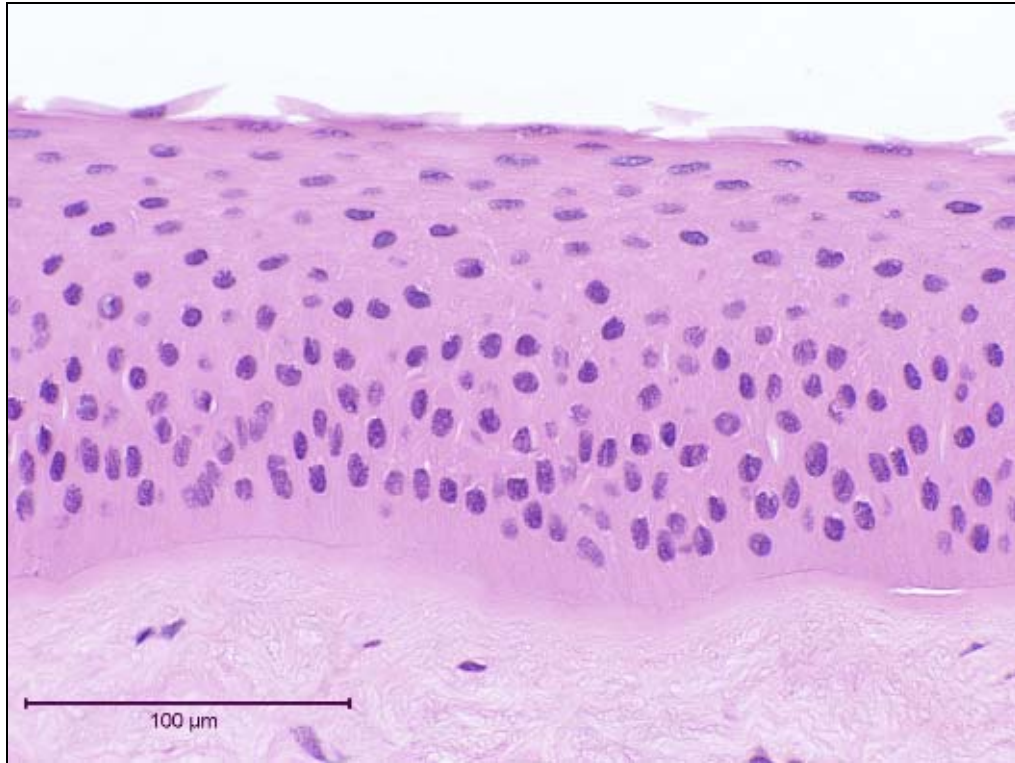


Figure 7. Sodium Percarbonate, 50% (w/v) suspension, 60-minute exposure, 4-hour post-exposure
(A) Epithelium (nonviable) (magnification 430x)



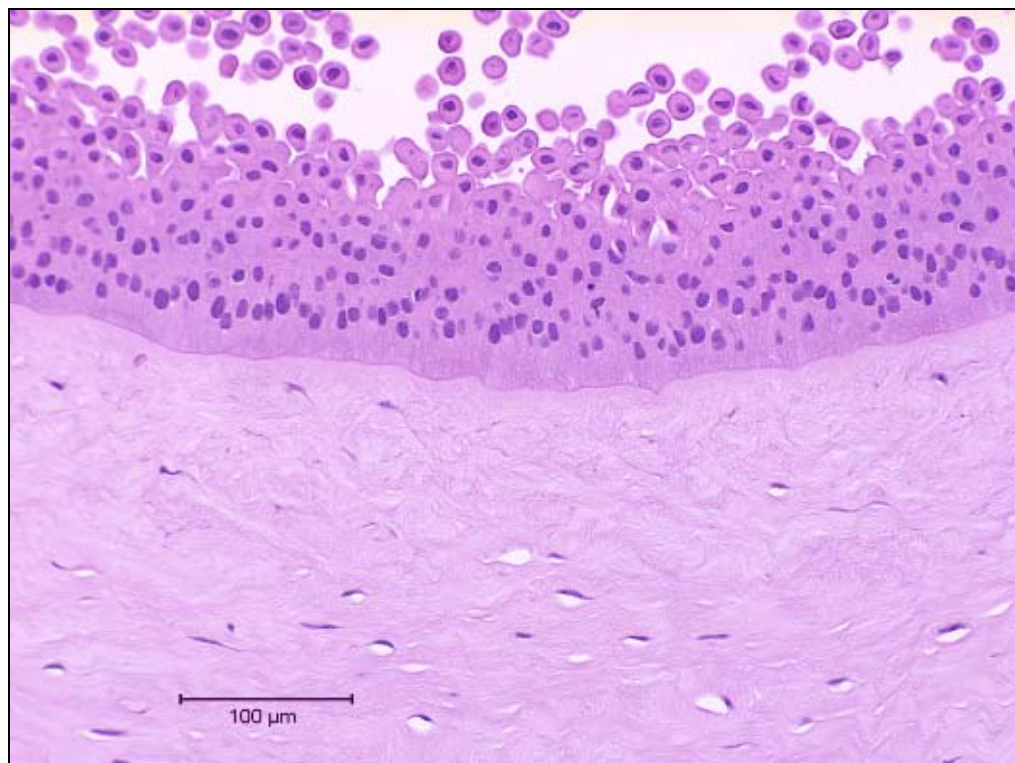
(C) Full thickness (magnification 45x)



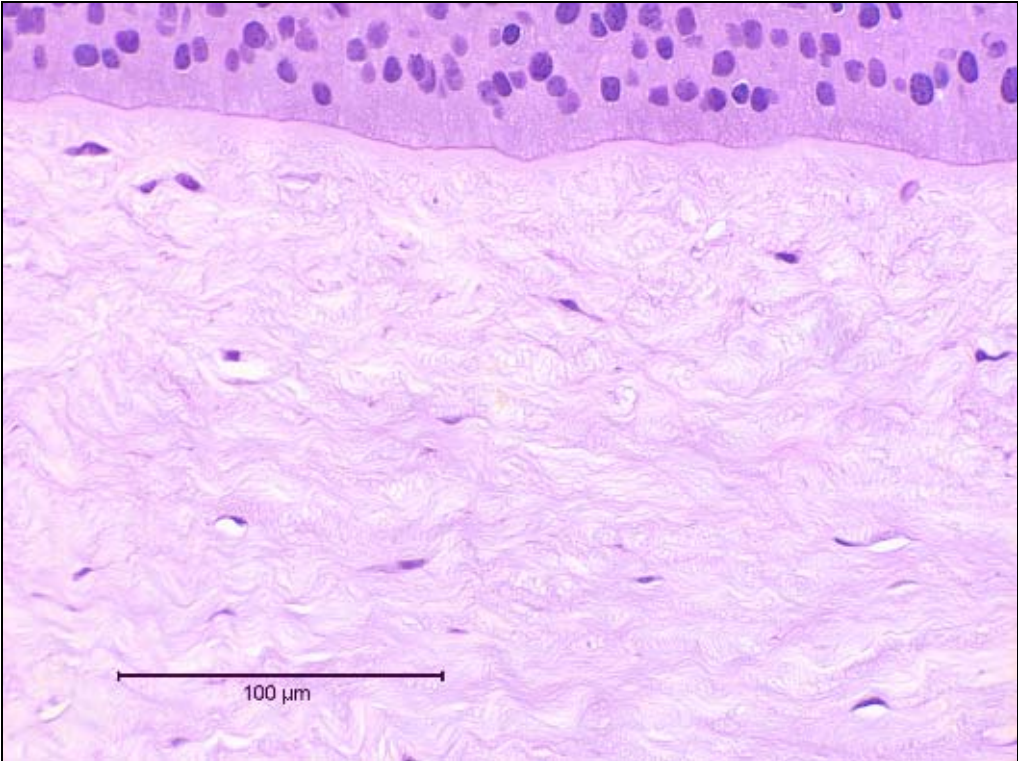
(C) Full thickness showing collagen delamination (magnification 45x)



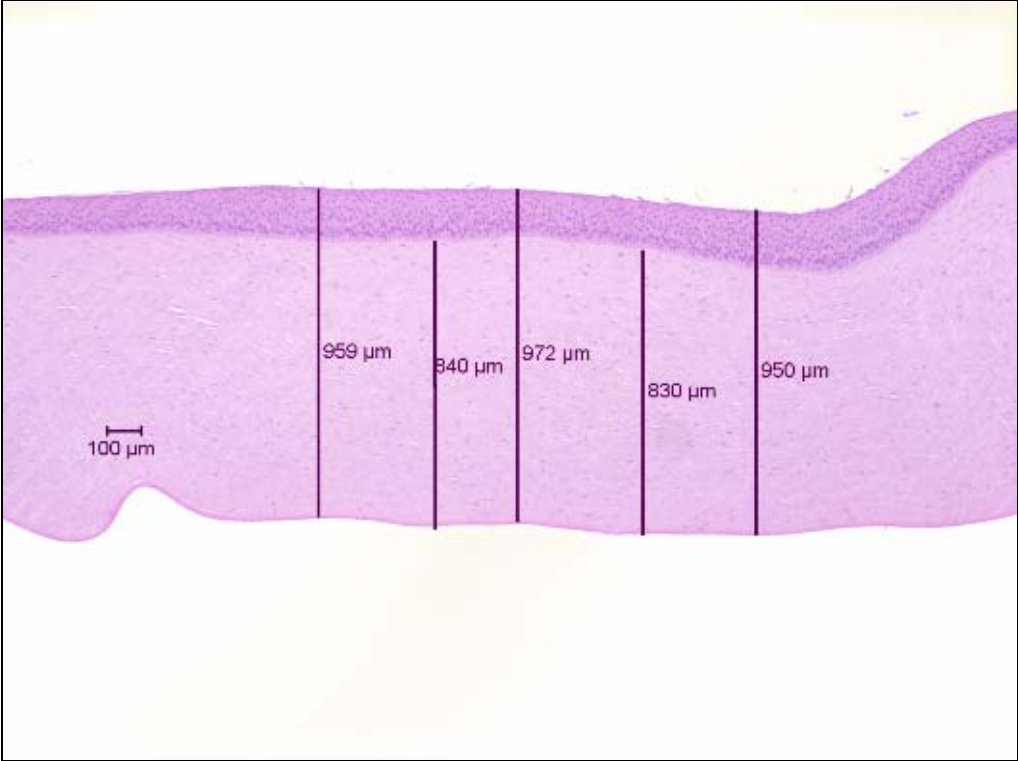
Figure 8. Sodium Percarbonate (60% in formulation), 50% (w/v) suspension, 10-minute exposure, 20-hour post-exposure
(A) Epithelium (magnification 230x)



(B) Stroma directly below Bowman's Layer showing the slight increase in collagen matrix vacuolization (magnification 430x)



(C) Full thickness (magnification 45x)



FORMULAS

| Test Material # | Group | Raw Material | Percentage |
|------------------------|--|------------------------------|-------------------|
| 1 | Sodium Percarbonate (CAS #15630-89-4) | Reactive Chemical Mixture | 40-45 |
| | Sodium carbonate (CAS #497-19-8) | Reactive Chemical Mixture | 5-10 |
| | | Water | 45-50 |
| 2 | Sodium Percarbonate (CAS #15630-89-4) | Reactive Chemical Mixture | 40-45 |
| | Sodium carbonate (CAS #497-19-8) | Reactive Chemical Mixture | 5-10 |
| | | Water | 45-50 |
| 3 | Sodium Percarbonate (CAS #15630-89-4) | Reactive Chemical Mixture | 25-30 |
| | Sodium carbonate (CAS #497-19-8) | Reactive Chemical Mixture | 20-25 |
| | | Water | 45-50 |

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Appendix G4

**Dataset Received from L'OREAL Advanced Research for an In-House
Porcine Corneal Opacity and Permeability Assay**

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Preliminary comments :

L'OREAL Advanced Research understood very early the usefulness of isolated cornea assay as a predictive tool for ocular irritancy. Due to constraints of supply and use of bovine eyes, we decided to use porcine corneas.

We have developed an in-house PCOP protocol to provide adequate safety data for cosmetic ingredients. Our PCOP protocol is basically that previously described by P. Gautheron, with some changes linked to species.

For liquid form and water-soluble materials we obtained a prediction model based on only one endpoint (O.D. ₃₀) allowing to distinguish non irritating compounds (MAS ≤ 15 if O.D. ₃₀ < 0.35) from irritating compounds (MAS > 15 if O.D. ₃₀ ≥ 0.35).

Using this two classes scheme, 49 of the 50 raw ingredients tested in our PCOP assay were accurately classified. Only one was over-predicted. Agreement between *in vivo* and *in vitro* classification was high (concordance 98% -Kappa = 0.96, p < 0.01).

| Predicted class (<i>in vitro</i>) | Observed class (<i>in vivo</i>) | |
|---|-----------------------------------|---|
| | Mild irritant MAS ≤15 | Moderate/ Irritant / Severe MAS >15 |
| Mild irritant MAS ≤15 | 25 | 0 |
| Moderate/ Irritant / Severe MAS >15 | 1 | 24 |

As MAS were available for 43 of the materials, a linear regression was carried out to predict the Draize Maximum Average Score (MAS).

An equation PM was obtained to predict MAS value, but despite satisfactory statistical coefficients - R²Y= 0.84, concordance = 90 % - this algorithm is not recommended. Data analysis showed that 95% confidence interval was wide and there was too much uncertainty of the MAS prediction for it to be used.

We used the Draize test classification scheme according to French regulations applied to cosmetics (J. O. R. F. June 1992.) as follows :

| MAS value | Class |
|---------------|-------------------|
| ≤ 15 | mild irritant |
| >15 and ≤ 30 | moderate irritant |
| > 30 and ≤ 50 | irritant |
| > 50 | severe irritant |

Table 1 summarized our PCOP results obtained on 50 liquid and water-soluble compounds, selected on the basis of preexisting *in vivo* data - including 32 surfactants, 7 polymers, 5 solvents, 4 active ingredients and 2 dyes.

All compounds were tested *in vitro* at the same concentration as *in vivo*.

Some of them, including references, were tested in both PCOP and BCOP - See Table II and III for details.

Taking into account those results PCOP seems to be more suitable to predict class irritation than BCOP. Future work need to be done to complete this comparison.

Abbreviations used :

PCOP = Porcine cornea permeability and opacity assay;

BCOP = Bovine cornea permeability and opacity assay;

MAS = maximum average score;

OP₁₀ or OP₃₀ = opacity induced by a 10-min or 30 min- exposure of corneas, respectively;

O.D.₁₀ or O.D.₃₀ = optical density measured after a 10-min or 30 min- exposure of corneas, respectively;

PM = prediction model.

Table 1: PCOP results obtained on 50 liquid and water-soluble compounds

| N° product | Concentration tested | PCOP Data | | | | Predicted data | | In vivo data (historical) | |
|------------|----------------------|------------------|--------------------|------------------|--------------------|----------------|----------------------|---------------------------|-------|
| | | OP ₁₀ | O.D. ₁₀ | OP ₃₀ | O.D. ₃₀ | PCOP class | MAS (Class deducted) | MAS | class |
| 1 | 0.5% | 4 | - 0.043 | 0.3 | 0.084 | Mild | 10.2 (Mild) | 0.7 | Mild |
| 2 | 10% | -0.3 | - 0.006 | 6.3 | 0.008 | Mild | 8.3 (Mild) | 2.3 | Mild |
| 3 | 20% | -1 | - 0.003 | 0.4 | 0.003 | Mild | 8.2 (Mild) | 3.7 | Mild |
| 4 | 10% | 6.7 | 0.041 | 53.9 | 0.092 | Mild | 10.4 (Mild) | 4.0 | Mild |
| 5 | 5% | 7.7 | 0.042 | 12.7 | 0.028 | Mild | 8.8 (Mild) | 4.7 | Mild |
| 6 | 10% | -0.7 | - 0.001 | 2.7 | 0.096 | Mild | 10.5 (Mild) | 5.3 | Mild |
| 7 | 10% | -1.3 | - 0.004 | 5.7 | 0.044 | Mild | 9.2 (Mild) | 5.7 | Mild |
| 8 | 100% | 1.7 | 0.014 | 1.3 | 0.066 | Mild | 9.8 (Mild) | 8.5 | Mild |
| 9 | 100% | 2.6 | 0.036 | -2.7 | - 0.034 | Mild | 7.2 (Mild) | 9.8 | Mild |
| 10 | 3.1% | 0.3 | - 0.009 | -0.3 | - 0.008 | Mild | 7.9 (Mild) | 10.7 | Mild |
| 11 | 100% | -5.6 | - 0.002 | -4.0 | 0.003 | Mild | 8.2 (Mild) | 10.7 | Mild |
| 12 | 100% | 3.3 | - 0.002 | 2.0 | 0.013 | Mild | 8.4 (Mild) | 10.8 | Mild |
| 13 | 100% | 4.3 | - 0.002 | 39.0 | 0.133 | Mild | 11.5 (Mild) | 11.0 | Mild |
| 14 | 100% | 5 | - 0.004 | -2.3 | - 0.003 | Mild | 8.0 (Mild) | 11.3 | Mild |
| 15 | 10% | 0.3 | - 0.017 | 2.8 | 0.021 | Mild | 8.6 Mild) | 11.3 | Mild |
| 16 | 5% | 5.6 | 0.421 | 19.0 | 1.040 | Irrg. | 29.4 (Mod.) | 12.0 | Mild |
| 17 | 100% | 1 | 0.007 | 4.7 | 0.028 | Mild | 8.8 (Mild) | 12.0 | Mild |
| 18 | 100% | 3 | - 0.001 | 12.3 | - 0.007 | Mild | 7.9 (Mild) | 12.3 | Mild |
| 19 | 6.7% | 4.7 | 0.212 | 15.0 | 0.296 | Mild | 15.3 (Mod.) | 12.7 | Mild |
| 20 | 100% | 7.3 | 0.056 | 21.2 | 0.014 | Mild | 8.4 (Mild) | 12.8 | Mild |

| N° product | Concentration tested | PCOP Data | | | | Predicted data | | In vivo data (historical) | |
|------------|----------------------|------------------|--------------------|------------------|--------------------|----------------|-------------------------|------------------------------|-------|
| | | OP ₁₀ | O.D. ₁₀ | OP ₃₀ | O.D. ₃₀ | PCOP class | MAS (Class deducted) | MAS | class |
| 21 | 2% | 3.3 | 0.042 | 5.0 | 0.056 | Mild | 9.5 (Mild) | 13.0 | Mild |
| 22 | 100% | 9.3 | 0.049 | 17.0 | 0.089 | Mild | Not AppL | NA | Mild |
| 23 | 100% | 2 | 0.053 | 7.3 | - 0.007 | Mild | Not AppL | NA | Mild |
| 24 | 100% | -2.4 | 0.012 | -1.0 | 0.003 | Mild | Not AppL | NA | Mild |
| 25 | 10% | 0.3 | 0.003 | 2.7 | 0.014 | Mild | Not AppL | NA | Mild |
| 26 | 100% | 20.7 | 0.118 | 67.1 | 0.367 | Irrg. | 16.9 (Mod.) | 16.0 | Mod. |
| 27 | 6% | 16 | 1.641 | 14.0 | 2.060 | Irrg. | 38.7 (Irr. to Sev.) | 30.6 | Irr. |
| 28 | 10% | 6.3 | 0.516 | 40.5 | 2.081 | Irrg. | 38.8 (Irr. to Sev.) | 31.0 | Irr. |
| 29 | 0.5% | 23 | 0.739 | 25.5 | 0.451 | Irrg. | 18.8 (mod.) | 31.0 | Irr. |
| 30 | 10% | 31.3 | 0.876 | 38.7 | 1.268 | Irrg. | 32.5 (Irr. to Sev.) | 31.3 | Irr. |
| 31 | 10% | 7.3 | 0.343 | 7.7 | 2.202 | Irrg. | 39.2 (Irr. to Sev.) | 31.7 | Irr. |
| 32 | 10% | 24.7 | 0.979 | 17.3 | 0.918 | Irrg. | 27.8 (Irr. to Sev.) | 31.7 | Irr. |
| 33 | 10% | 13.7 | 1.041 | 3.0 | 1.764 | Irrg. | 37.2 (Irr. to Sev.) | 32.7 | Irr. |
| 34 | 10% | 20 | 0.868 | 46.0 | 1.488 | Irrg. | 34.9 (Irr. to Sev.) | 33.7 | Irr. |
| 35 | 6% | 14 | 0.659 | 32.5 | 1.896 | Irrg. | 37 (Irr. to Sev.) | 34.7 | Irr. |
| 36 | 6% | 35.3 | 0.919 | 30.3 | 1.548 | Irrg. | 35.5 (Irr. to Sev.) | 35.3 | Irr. |
| 37 | 10% | 13 | 0.613 | 11.7 | 1.123 | Irrg. | 30.6 (Mod.) | 35.7 | Irr. |
| 38 | 10% | 16.7 | 1.917 | 22.3 | 2.132 | Irrg. | 38.9 (Irr. to Sev.) | 37.4 | Irr. |
| 39 | 10% | 14.3 | 0.750 | 16.7 | 2.016 | Irrg. | 38.6 (Irr. to Sev.) | 39.3 | Irr. |
| 40 | 10% | 9.3 | 2.433 | 22.3 | 1.738 | Irrg. | 37 (Irr. to Sev.) | 40.3 | Irr. |
| 41 | 10% | 8.3 | 0.668 | 23.0 | 1.667 | Irrg. | 36.5 (Irr. to Sev.) | 40.7 | Irr. |
| 42 | 10% | 1.3 | 0.308 | 38.3 | 1.714 | Irrg. | 36.8 (Mod.) | 43.0 | Irr. |
| 43 | 10% | 11.3 | 0.786 | 18.0 | 2.094 | Irrg. | 38.9 (Irr. to Sev.) | 45.0 | Irr. |
| 44 | 10% | 29 | 1.568 | 33.3 | 1.978 | Irrg. | 38.4 | 46.0 | Irr. |

| N° product | Concentration tested | PCOP Data | | | | Predicted data | | In vivo data (historical) | |
|------------|----------------------|------------------|--------------------|------------------|--------------------|----------------|----------------------|---------------------------|-------|
| | | OP ₁₀ | O.D. ₁₀ | OP ₃₀ | O.D. ₃₀ | PCOP class | MAS (Class deducted) | MAS | class |
| | | | | | | | (Irr. to Sev.) | | |
| 45 | 10% | 23 | 1.288 | 19.7 | 2.174 | Irrg. | 39.1 (Irr. to Sev.) | 47.2 | Irr. |
| 46 | 10% | 17.3 | 0.995 | 8.0 | 1.538 | Irrg. | Not AppL | 63.7 | Sev. |
| 47 | 10% | 21.3 | 1.618 | 11.3 | 1.679 | Irrg. | Not AppL | 63.7 | Sev |
| 48 | 10% | 16.7 | 0.495 | 27.3 | 0.878 | Irrg. | Not AppL | NA | Irr. |
| 49 | 10% | 6.7 | 0.232 | 18.0 | 1.112 | Irrg. | Not AppL | NA | Irr. |
| 50 | 10% | 10.7 | 0.639 | 48.3 | 0.997 | Irrg. | Not AppL | NA | Irr. |

OP₁₀. OP₃₀. O.D.₁₀ O.D.₃₀: Each data represents mean corrected value of three corneas.

NA: not available.

Not AppL: Not applicable

Predicted class is determined by the PM: $O.D._{30} < 0.35 \Rightarrow$ predict nonirritating (MAS ≤ 15 - mild irritant) - $O.D._{30} \geq$

$0.35 \Rightarrow$ predict irritating (Irrg.) corresponding to MAS > 15 , covering three French Draize classes - moderate, irritant, severe.

Predicted MAS is calculated using this algorithm $= 8.08 + 26.16 \times O.D._{30} - 5.47 \times O.D._{30}^2$, with deduction of Draize class in brackets. Evaluation of this PM was based on three classes – Mild irritant (MAS ≤ 15), Moderate irritant

($15 < MAS \leq 30$), irritant to severe (MAS > 30). Data analysis showed that 95% confidence interval was wide. There is too much uncertainty of the MAS prediction for it to be used.

Table II - References tested in PCOP and BCOP with historical data (N = 8)

| N° PRODUCT | CONC | In vivo data (historical) | | PCOP data | | | | | BCOP data | | | | | | |
|---|------|---------------------------|---------------|------------------|--------------------|------------------|--------------------|-----------------|------------------|--------------------|----------|------------------|--------------------|----------|-----------------|
| | | MAS | In vivo Class | OP ₁₀ | O.D. ₁₀ | OP ₃₀ | O.D. ₃₀ | Predicted class | OP ₁₀ | O.D. ₁₀ | Score 10 | OP ₃₀ | O.D. ₃₀ | Score 30 | Predicted Class |
| Propylene glycol (n°20) | 100% | 12.8 | Mild | 7.3 | 0.056 | 21.2 | 0.014 | Mild | NA | NA | NA | 11,7 | 0.001 | 1.8 | 1 |
| Sodium dodecyl sulfate (n°38) | 10% | 37.4 | Irr. | 16.7 | 1.917 | 22.3 | 2.132 | Irrg | NA | NA | NA | 1.5 | 0.424 | 18 | 2 |
| Triton X100 (n°40) | 10% | 40.3 | Irr. | 9.3 | 2.433 | 22.3 | 1.738 | Irrg | 3.2 | 2.717 | 43.9 | 2.1 | 5.197 | 79.5 | 3 |
| Vaseline oil | 100% | NI | Mild | -0.3 | 0.008 | -1 | -0.03 | Mild | NA | NA | NA | NA | 0.005 | 4.0 | 1 |
| Tween 20 (n° 7) | 10% | 5.7 | Mild | -1.3 | 0.004 | 5.7 | 0.044 | Mild | 0.3 | 0.003 | 0.3 | 1.8 | 0.001 | 1.8 | 1 |
| <i>Ethanol</i> | 100% | 37 (at 1h) | Irr. | 40 | 1.260 | 58.2 | 0.676 | Irrg | 26.9 | 2.912 | 70.6 | NA | NA | NA | 3 |
| Ethanol | 50% | NA | NA | 8.3 | 0.036 | 18 | 0.075 | Mild | NA | NA | 22.9 | NA | 1.117 | 31.3 | 3 |
| Ethanol | 10% | NA | NA | -2.3 | 0.014 | 0.3 | -0.016 | Mild | NA | NA | NA | NA | 0.021 | 0.5 | 1 |
| Lactic Acid | 10% | 31.2 | Irr. | 78 | 0.928 | 271 | 1.552 | Irrg | 15.2 | 0.029 | 15.6 | 75.2 | 0.439 | 81.7 | 3 |
| Hexadecyl trimethyl ammonium bromide (CTAB) | 0.5% | NA | NA | 42.3 | 0.562 | 53.0 | 1.270 | Irrg | NA | NA | 43.3 | 48.2 | 5.112 | 124.9 | 3 |

Numbers in brackets refer to table I.

NA: not available.

TABLE III: Results obtained on compounds tested in both PCOP and BCOP (N = 15)

| N° | CONC TESTED | In vivo data (historical) | | PCOP data | | | | | BCOP data | | | | | | |
|----|----------------|---------------------------|--------|------------------|--------------------|------------------|--------------------|-----------------|------------------|--------------------|----------|------------------|--------------------|----------|-----------------|
| | | MAS | Classe | OP ₁₀ | O.D. ₁₀ | OP ₃₀ | O.D. ₃₀ | Predicted Class | OP ₁₀ | O.D. ₁₀ | Score 10 | OP ₃₀ | O.D. ₃₀ | Score 30 | Predicted Class |
| 8 | 100% | 8,5 | Mild | 1,7 | 0,014 | 1,3 | 0,066 | Mild | NA | NA | NA | 0,8 | -0,006 | 0,7 | 1 |
| 13 | 100% | 11,0 | Mild | 4,3 | -0,002 | 39,0 | 0,133 | Mild | 4,4 | 0,040 | 5,0 | 24,7 | 0,958 | 39,1 | 2 or 3 |
| 18 | 100% | 12,3 | Mild | 3,0 | -0,001 | 12,3 | -0,007 | Mild | NA | NA | NA | 5,8 | 0,057 | 6,6 | 1 |
| 20 | 100% | 12,8 | Mild | 7,3 | 0,056 | 21,2 | 0,014 | Mild | NA | NA | NA | 11,7 | 0,424 | 18,0 | 2 |
| 26 | 100% | 16,0 | Mod. | 20,7 | 0,118 | 67,1 | 0,367 | Irrg | 71,5 | 0,971 | 86,1 | 58,6 | 2,346 | 93,8 | 3 |
| A | 10% | 30,3 | Irrg | 47,3 | 1,256 | 186,0 | 0,796 | Irrg | 12,1 | 1,505 | 34,7 | 51,3 | 4,107 | 112,9 | 3 |
| 30 | 10% | 31,3 | Irrg | 31,3 | 0,876 | 38,7 | 1,268 | Irrg | 56,8 | 1,786 | 83,6 | 98,8 | 2,327 | 133,7 | 3 |
| 31 | 10% | 31,7 | Irrg | 7,3 | 0,343 | 7,7 | 2,202 | Irrg | 2,5 | 1,058 | 18,4 | 3,0 | 3,238 | 51,6 | 2 or 3 |
| 32 | 10% | 31,7 | Irrg | 24,7 | 0,979 | 17,3 | 0,918 | Irrg | 3,7 | 1,977 | 33,4 | 3,5 | 5,231 | 82,0 | 3 |
| 33 | 10% | 32,7 | Irrg | 13,7 | 1,041 | 3,0 | 1,764 | Irrg | 0,3 | 0,860 | 13,2 | 2,7 | 4,439 | 69,8 | 3 |
| 39 | 10% | 39,3 | Irrg | 14,3 | 0,750 | 16,7 | 2,016 | Irrg | 0,4 | 0,721 | 11,2 | 3,9 | 1,043 | 16,9 | 2 |
| 42 | 10% | 43,0 | Irrg | 1,3 | 0,308 | 38,3 | 1,714 | Irrg | 5,7 | 1,082 | 22,0 | 6,1 | 5,392 | 86,9 | 3 |
| 43 | 10% | 45,0 | Irrg | 11,3 | 0,786 | 18,0 | 2,094 | Irrg | 3,6 | 1,077 | 19,8 | 3,6 | 3,921 | 62,4 | 3 |
| 45 | 10% | 47,2 | Irrg | 23,0 | 1,288 | 19,7 | 2,174 | Irrg | 5,1 | 3,098 | 51,6 | 2,3 | 5,040 | 77,9 | 3 |
| 46 | 10% | 63,7 | Irrg | 17,3 | 0,995 | 8,0 | 1,538 | Irrg | 4,9 | 1,812 | 32,1 | 2,4 | 3,854 | 60,2 | 3 |

Product numbers refer to table I .

Our BCOP protocol is a variation on the original protocol developed by P. GAUTHERON .

Corneal score = OP + (15 x O.D.). Classification depends on corneal scores at 30 minutes completed with results at 10 minutes :

| Score at 30 min | Class |
|-----------------|--|
| ≤ 10 | Class 1 : mild irritant |
| 10 - 25 | Class 2 : moderate irritant if score 10 mn ≤ 10 Class 2 or 3 if $10 < \text{score } 10 \text{ mn} \leq 25$ Class 3 : irritant to strong irritant if score 10 mn >25 |
| 25 - 55 | Class 2 or 3 if score 10 mn ≤ 10 Class 3 : irritant to strong irritant if score 10 mn >10 |
| >55 | Class 3 : irritant to strong irritant |

Appendix G5

Supporting Analyses Received from IIVS for Gettings et al. (1996) Study

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IIVS Submission - In Vivo Data and Analysis for the Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 1 | HZA | 24 | 1 | 4 | 1 | 2 | 1 | 1 | 33 | EPA |
| | | | 48 | 1 | 3 | 0 | 2 | 1 | 0 | 21 | 7 |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| GHS Tissue | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 1 | HZA | 33 | 1.0 | 2.7 | 0.3 | 2.0 | 1.0 | 0.7 | 7 | 7 |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | |
| | 1 | HZA | 33 | 1.0 | 2.7 | 0.3 | 2.0 | 1.0 | 0.7 | 7 | 7 |
| | 2 | HZA | 27 | 1.0 | 1.3 | 0.7 | 2.3 | 1.3 | 1.3 | 22 | 22 |
| | 3 | HZA | 34 | 1.0 | 1.7 | 1.0 | 2.7 | 1.7 | 1.3 | 7 | 7 |
| | 4 | HZA | 37 | 1.0 | 3.0 | 1.0 | 2.0 | 1.7 | 1.3 | 14 | 14 |
| | 5 | HZA | 35 | 1.0 | 2.3 | 0.7 | 2.3 | 1.3 | 0.3 | 22 | 22 |
| 6 | HZA | 39 | 1.0 | 3.0 | 0.7 | 2.7 | 1.7 | 1.7 | 21 | 21 | |
| Dose Vol | | 0.1 | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 1 | HZB* | 24 | 1 | 1 | 1 | 2 | 1 | 0 | 16 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 3 |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| GHS Tissue | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 1 | HZB* | 16 | 0.7 | 0.7 | 0.3 | 1.3 | 0.7 | 0.3 | 3 | 3 |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | |
| | 1 | HZB* | 16 | 0.7 | 0.7 | 0.3 | 1.3 | 0.7 | 0.3 | 3 | 3 |
| | 2 | HZB* | 4 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 2 | 2 |
| | 3 | HZB* | 11 | 1.0 | 1.0 | 0.0 | 1.3 | 1.0 | 0.0 | 7 | 7 |
| | 4 | HZB* | 27 | 0.7 | 1.0 | 0.3 | 1.7 | 1.0 | 0.7 | 3 | 7 |
| | 5 | HZB* | 35 | 1.0 | 2.3 | 1.0 | 2.0 | 1.3 | 1.0 | 7 | 7 |
| 6 | HZB* | 0 | 0.3 | 0.3 | 0.3 | 1.7 | 1.0 | 0.0 | 3 | 7 | |
| Dose Vol | | 0.1 | | | | | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|---------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZA | 24 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | EPA | |
| | | | 48 | 1 | 1 | 1 | 3 | 1 | 2 | 22 | 22 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 22 | |
| | | | 14 days | 1 | 1 | 0 | 2 | 2 | 1 | 15 | | |
| | | | 21 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | | |
| | 2 | HZA | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 2 | HZA | 27 | 1 | 1.333333 | 0.666667 | 2.333333333 | 1.333333333 | 1.333333333 | 22 | 22 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 1 | 0.833333 | 2.5 | 1.5 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 1 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,4 | 1 | 0.833333 | 2.166667 | 1.5 | 22 | 22 | 1,3,5 | 1 | 0.833333 | | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,5 | 1 | 0.666667 | 2.333333 | 1.333333 | 22 | 22 | 1,3,6 | 1 | 0.833333 | | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,6 | 1 | 0.666667 | 2.5 | 1.5 | 22 | 22 | 1,4,5 | 1 | 0.833333 | | |
| GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | 4 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| 0.1 | 2 | HZB* | 24 | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| | | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | 7 days | | | | | | | 0 | GHS | |
| | | | 14 days | | | | | | | 0 | 2 | |
| | | | 21 days | | | | | | | 0 | | |
| | 2 | HZB* | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 2 | HZB* | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0.833333 | 0.166667 | 1.333333 | 0.833333 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.833333 | 0.333333 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,4 | 0.666667 | 0.333333 | 1.5 | 0.833333 | 3 | 7 | 1,3,5 | 1 | 0.666667 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,5 | 0.833333 | 0.666667 | 1.666667 | 1 | 7 | 7 | 1,3,6 | 0.833333 | 0.333333 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,6 | 0.5 | 0.333333 | 1.5 | 0.833333 | 3 | 7 | 1,4,5 | 0.833333 | 0.666667 | | |
| GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | GHS Rating | 4 | 4 | 4 | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|---------------------|-------------|----------------|-----------------|----------------|----------------|-------------------|
| | | | | OPACITY | AREA | | REDNESS | CHEMOSIS | DISCHARGE | | |
| 0.1 | 3 | HZA | 24 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | EPA |
| | | | 48 | 1 | 1 | 1 | 3 | 1 | 2 | 22 | 7 |
| | | | 72 | 1 | 1 | 1 | 2 | 2 | 0 | 18 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 3 | HZA | 34 | 1 | 1.666667 | 1 | 2.666666667 | 1.66666667 | 1.333333333 | 7 | 7 |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | |
| 2.333333 | 1.666667 | 14 | 14 | Combina- tion block #3 | 1,4,6 GHS Rating | 1.0 | 0.8 | 2.3 | 1.7 | 21 | 21 |
| 2 | 4 | 14 | 14 | | 1,5,6 GHS Rating | 2 | 4 | 2 | 4 | 21 | 21 |
| 2.5 | 1.5 | 22 | 22 | | 2,3,4 GHS Rating | 1.0 | 0.7 | 2.5 | 1.5 | 22 | 22 |
| 2 | 4 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 |
| 2.666667 | 1.666667 | 21 | 21 | | 2,3,5 GHS Rating | 1.0 | 1.0 | 2.5 | 1.7 | 22 | 22 |
| 2 | 4 | 21 | 21 | | 2,3,5 GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 |
| 2.166667 | 1.5 | 22 | 22 | | 2,3,5 GHS Rating | 1.0 | 0.8 | 2.5 | 1.5 | 22 | 22 |
| 2 | 4 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|---------------------|-------------|----------------|-----------------|----------------|----------------|-------------------|
| | | | | OPACITY | AREA | | REDNESS | CHEMOSIS | DISCHARGE | | |
| 0.1 | 3 | HZB* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA |
| | | | 48 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 7 |
| | | | 72 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 3 | HZB* | 11 | 1 | 1 | 0 | 1.333333333 | 1 | 0 | 7 | 7 |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | |
| 1.5 | 1 | 7 | 7 | Combina- tion block #3 | 1,4,6 GHS Rating | 0.7 | 0.3 | 1.7 | 1.0 | 3 | 7 |
| 4 | 4 | 7 | 7 | | 1,5,6 GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 |
| 1.666667 | 1.166667 | 7 | 7 | | 2,3,4 GHS Rating | 0.8 | 0.7 | 1.8 | 1.2 | 7 | 7 |
| 4 | 4 | 7 | 7 | | 2,3,5 GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 |
| 1.5 | 1 | 7 | 7 | | 2,3,5 GHS Rating | 0.8 | 0.2 | 1.5 | 1.0 | 7 | 7 |
| 4 | 4 | 7 | 7 | | 2,3,5 GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 |
| 1.833333 | 1.166667 | 7 | 7 | | 2,3,5 GHS Rating | 1.0 | 0.5 | 1.7 | 1.2 | 7 | 7 |
| 4 | 4 | 7 | 7 | | 2,3,5 GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|-------------------|--------------|----------------|-------------|----------------|-----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 4 | HZA | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | EPA |
| | | | 48 | 1 | 3 | 1 | 2 | 1 | 0 | 26 | 14 |
| | | | 72 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | GHS |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 14 |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | 4 | HZA | 37 | 1 | 3 | 1 | 2 | 1.666666667 | 1.333333333 | 14 | 14 |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combina- tion block #4 | 2,3,6 | 1.0 | 0.8 | 2.7 | 1.7 | 22 | 22 | Combina- tion block #5 | 3,4,5 | 1.0 | 1.0 |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 2,4,5 | 1.0 | 0.8 | 2.3 | 1.5 | 22 | 22 | | 3,4,6 | 1.0 | 1.0 |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 2,4,6 | 1.0 | 0.8 | 2.5 | 1.7 | 22 | 22 | | 3,5,6 | 1.0 | 0.8 |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 4 |
| | 2,5,6 | 1.0 | 0.7 | 2.5 | 1.5 | 22 | 22 | | 4,5,6 | 1.0 | 0.8 |
| GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|-------------------|--------------|----------------|-------------|----------------|-----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 4 | HZB* | 24 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | 4 | HZB* | 27 | 0.666667 | 1 | 0.333333 | 1.666666667 | 1 | 0.666666667 | 3 | 7 |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combina- tion block #4 | 2,3,6 | 0.7 | 0.2 | 1.5 | 1.0 | 7 | 7 | Combina- tion block #5 | 3,4,5 | 1.0 | 0.7 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 |
| | 2,4,5 | 0.8 | 0.7 | 1.8 | 1.2 | 7 | 7 | | 3,4,6 | 0.8 | 0.3 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 2,4,6 | 0.5 | 0.3 | 1.7 | 1.0 | 3 | 7 | | 3,5,6 | 1.0 | 0.7 |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | | GHS Rating | 2 | 4 |
| | 2,5,6 | 0.7 | 0.7 | 1.8 | 1.2 | 7 | 7 | | 4,5,6 | 0.8 | 0.7 |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|--------|-----------|--------------|---------|----------|----------|----------|------------|--------------|-------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZA | 24 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | EPA |
| | | | 48 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | 21 |
| | | | 72 | 1 | 2 | 0 | 2 | 1 | 1 | 18 | GHS |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 1 | 11 | 21 |
| | | | 14 days | 1 | 1 | 0 | 1 | 0 | 0 | 7 | |
| | | | 21 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZA | 39 | 1 | 3 | 0.666667 | 2.66666667 | 1.666666667 | 1.666666667 | 21 | 21 |
| 22 | | 2,3,4 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,3,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,3,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,4,5 | 2 | 22 | | 22 | | | | | |
| 14 | | 2,4,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,5,6 | 2 | 22 | | 22 | | | | | |
| 21 | | 3,4,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,6 | 2 | 21 | | 21 | | | | | |
| 21 | | 3,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 4,5,6 | 2 | 22 | | 22 | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZB* | 24 | 1 | 1 | 1 | 2 | 2 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | | 0 |
| | | | 21 days | | | | | | | | 0 |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZB* | 0 | 0.333333 | 0.333333 | 0.333333 | 1.66666667 | 1 | 0 | 3 | 7 |
| 7 | | 2,3,4 | 4 | 7 | | 7 | | | | | |
| 3 | | 2,3,5 | 2 | 7 | | 7 | | | | | |
| 7 | | 2,3,6 | 4 | 7 | | 7 | | | | | |
| 3 | | 2,4,5 | 4 | 7 | | 7 | | | | | |
| 7 | | 2,4,6 | 4 | 7 | | 3 | | | | | |
| 7 | | 2,5,6 | 4 | 7 | | 7 | | | | | |
| 7 | | 3,4,5 | 2 | 7 | | 7 | | | | | |
| 7 | | 3,4,6 | 4 | 7 | | 7 | | | | | |
| 3 | | 3,5,6 | 2 | 7 | | 7 | | | | | |
| 7 | | 4,5,6 | 4 | 7 | | 7 | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|---------|------|---------|--------------|-----------|-----------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZC* | 24 | 0 | 0 | 0 | 2 | 1 | 2 | 10 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | | 1 | HZC* | 10 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.7 | 3 | 3 |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | | 1 | HZC* | 10 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.7 | 3 | 3 |
| | | 2 | HZC* | 32 | 1.0 | 1.7 | 0.3 | 2.0 | 1.3 | 0.7 | 7 | 7 |
| | | 3 | HZC* | 35 | 1.0 | 2.3 | 1.0 | 2.0 | 1.3 | 1.3 | 7 | 7 |
| | | 4 | HZC* | 6 | 0.0 | 0.0 | 0.0 | 1.7 | 0.3 | 0.0 | 3 | 7 |
| | | 5 | HZC* | 35 | 1.0 | 2.7 | 0.7 | 2.0 | 1.3 | 0.7 | 7 | 7 |
| | | 6 | HZC* | 11 | 0.7 | 0.7 | 0.0 | 1.0 | 0.3 | 0.0 | 3 | 3 |
| | | Dose Vol | 0.1 | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|---------|------|---------|--------------|-----------|-----------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F41401 | HZD* | 24 | 1 | 1 | 0 | 3 | 2 | 3 | 21 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 7 | |
| | | | 72 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | | F41401 | HZD* | 21 | 1.0 | 1.0 | 0.0 | 2.0 | 1.3 | 1.0 | 7 | 7 |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | | F41401 | HZD* | 21 | 1.0 | 1.0 | 0.0 | 2.0 | 1.3 | 1.0 | 7 | 7 |
| | | 2 | HZD* | 15 | 0.7 | 0.7 | 0.0 | 1.7 | 0.7 | 1.0 | 3 | 7 |
| | | 3 | HZD* | 19 | 0.3 | 0.3 | 0.0 | 1.7 | 1.0 | 1.0 | 3 | 7 |
| | | 4 | HZD* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | | F41356 | HZD* | 11 | 0.7 | 0.7 | 0.0 | 1.0 | 0.3 | 0.0 | 3 | 3 |
| | | F41386 | HZD* | 13 | 0.5 | 0.5 | 0.0 | 1.0 | 0.5 | 0.5 | 2 | 2 |
| | | Dose Vol | 0.1 | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 2 | HZC* | 24 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 7 |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | | | | | | | | | | | |
| | 2 | HZC* | 32 | 1 | 1.666667 | 0.333333 | 2 | 1.333333333 | 0.666666667 | 7 | 7 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 1 | 0.666667 | 2 | 1.333333 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.5 | 0.5 |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,4 | 0.5 | 0.166667 | 1.833333 | 0.833333 | 7 | 7 | | 1,3,5 | 1 | 0.833333 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 |
| | 1,2,5 | 1 | 0.5 | 2 | 1.333333 | 7 | 7 | | 1,3,6 | 0.833333 | 0.5 |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,6 | 0.833333 | 0.166667 | 1.5 | 0.833333 | 7 | 7 | | 1,4,5 | 0.5 | 0.333333 |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | |
| | 2 | HZD* | 15 | 0.666667 | 0.666667 | 0 | 1.666666667 | 0.666666667 | 1 | 3 | 7 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 0.833333 | 0 | 1.833333 | 1.166667 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.666667 | 0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,4 | 0.833333 | 0 | 1.833333 | 1 | 7 | 7 | | 1,3,5 | 0.833333 | 0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,5 | 0.833333 | 0 | 1.833333 | 1 | 7 | 7 | | 1,3,6 | 0.75 | 0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,6 | 0.833333 | 0 | 1.833333 | 1 | 7 | 7 | | 1,4,5 | 0.833333 | 0 |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZC* | 24 | 1 | 4 | 1 | 2 | 1 | 2 | 35 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 1 | 0 | 21 | 7 | |
| | | | 72 | 1 | 1 | 1 | 2 | 2 | 2 | 22 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZC* | 35 | 1 | 2.333333 | 1 | 2 | 1.33333333 | 1.33333333 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.833333 | 0.833333 | 7 | 7 | Combina- tion block #3 | 1,4,6 | 0.3 | 0.0 | 1.3 | 0.3 | 3 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 2 | 1.333333 | 7 | 7 | | 1,5,6 | 0.8 | 0.3 | 1.5 | 0.8 | 7 | 7 | |
| 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 1.5 | 0.833333 | 7 | 7 | | 2,3,4 | 1.0 | 0.7 | 2.0 | 1.3 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | |
| 1.833333 | 0.833333 | 7 | 7 | | 2,3,5 | 1.0 | 0.8 | 2.0 | 1.3 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZD* | 24 | 1 | 1 | 0 | 2 | 2 | 3 | 19 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZD* | 19 | 0.333333 | 0.333333 | 0 | 1.66666667 | 1 | 1 | 3 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.833333 | 1.166667 | 7 | 7 | Combina- tion block #3 | 1,4,6 | 0.8 | 0.0 | 1.5 | 0.9 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 1.833333 | 1.166667 | 7 | 7 | | 1,5,6 | 0.8 | 0.0 | 1.5 | 0.9 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 1.833333 | 1.166667 | 7 | 7 | | 2,3,4 | 0.5 | 0.0 | 1.7 | 0.8 | 3 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 1.5 | 0.833333 | 7 | 7 | | 2,3,5 | 0.7 | 0.0 | 1.7 | 0.8 | 3 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|------------|--------------|---------|---------|---------|----------|------------|--------------|------------------------------|------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZC* | 24 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | 4 | HZC* | 6 | 0 | 0 | 0 | 1.66666667 | 0.33333333 | 0 | 3 | 7 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 1.0 | 0.7 | 2.0 | 1.3 | 7 | 7 | 7 | Combina- tion block #5 | 3,4,5 | 1.0 | 0.8 |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | 7 | | GHS Rating | 2 | 4 |
| | 2,4,5 | 1.0 | 0.5 | 2.0 | 1.3 | 7 | 7 | 7 | | 3,4,6 | 0.8 | 0.5 |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 2,4,6 | 0.8 | 0.2 | 1.8 | 0.8 | 7 | 7 | 7 | | 3,5,6 | 1.0 | 0.8 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | | GHS Rating | 2 | 4 |
| | 2,5,6 | 1.0 | 0.5 | 2.0 | 1.3 | 7 | 7 | 7 | | 4,5,6 | 0.8 | 0.3 |
| GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 | | |
| | 4 | HZD* | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.6 | 0.0 | 1.7 | 0.8 | 3 | 7 | 7 | Combina- tion block #5 | 3,4,5 | 0.5 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 2,4,5 | 0.7 | 0.0 | 1.3 | 0.5 | 3 | 7 | 7 | | 3,4,6 | 0.4 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 2,4,6 | 0.6 | 0.0 | 1.3 | 0.6 | 3 | 7 | 7 | | 3,5,6 | 0.6 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 2,5,6 | 0.7 | 0.0 | 1.3 | 0.6 | 3 | 7 | 7 | | 4,5,6 | 0.6 | 0.0 |
| GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | 7 | GHS Rating | 4 | 4 | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|----------|----------|----------|---------|----------------|-------------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZC* | 24 | 1 | 4 | 1 | 2 | 2 | 1 | 35 | EPA | |
| | | | 48 | 1 | 3 | 1 | 2 | 1 | 1 | 28 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZC* | 35 | 1 | 2.666667 | 0.666667 | 2 | 1.333333333 | 0.666666667 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 2 | 7 | |
| 2.0 | 1.3 | 7 | 7 | | | | | HZC* | 1,2,4 | 4 | 7 | |
| 2 | 4 | 7 | 7 | | | | | | 1,2,5 | 2 | 7 | |
| 1.8 | 0.8 | 7 | 7 | | | | | | 1,2,6 | 4 | 7 | |
| 4 | 4 | 7 | 7 | | | | | | 1,3,4 | 4 | 7 | |
| 2.0 | 1.3 | 7 | 7 | | | | | | 1,3,5 | 2 | 7 | |
| 2 | 4 | 7 | 7 | | | | | | 1,3,6 | 4 | 7 | |
| 1.8 | 0.8 | 7 | 7 | | | | | | 1,4,5 | 4 | 7 | |
| 4 | 4 | 7 | 7 | | | | | | 1,4,6 | 4 | 7 | |
| | | | | | | | | | 1,5,6 | 4 | 7 | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F41356 | HZD* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 1 | 1 | 0 | 1 | 0 | 0 | 7 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F41356 | HZD* | 11 | 0.666667 | 0.666667 | 0 | 1 | 0.333333333 | 0 | 3 | 3 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 4 | 7 | |
| 1.3 | 0.7 | 3 | 7 | | | | | HZD* | 1,2,4 | 4 | 7 | |
| 4 | 4 | 3 | 7 | | | | | | 1,2,5 | 4 | 7 | |
| 1.3 | 0.8 | 3 | 7 | | | | | | 1,2,6 | 4 | 7 | |
| 4 | 4 | 3 | 7 | | | | | | 1,3,4 | 4 | 7 | |
| 1.3 | 0.8 | 3 | 7 | | | | | | 1,3,5 | 4 | 7 | |
| 4 | 4 | 3 | 7 | | | | | | 1,3,6 | 4 | 7 | |
| 1.0 | 0.4 | 3 | 3 | | | | | | 1,4,5 | 4 | 7 | |
| 4 | 4 | 3 | 3 | | | | | | 1,4,6 | 4 | 7 | |
| | | | | | | | | | 1,5,6 | 4 | 7 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|----------|----------|------|---------|--------------|-----------|--------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZC* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 1 | 1 | 0 | 1 | 0 | 0 | 7 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 6 | HZC* | 11 | 0.666667 | 0.666667 | 0 | 1 | 0.3333333333 | 0 | 3 | 3 | |
| 7 | | 2,3,4 | 2 | 7 | 7 | | | | | | | |
| 7 | | 2,3,5 | 2 | 7 | 7 | | | | | | | |
| 7 | | 2,3,6 | 2 | 7 | 7 | | | | | | | |
| 7 | | 2,4,5 | 2 | 7 | 7 | | | | | | | |
| 7 | | 2,4,6 | 4 | 7 | 7 | | | | | | | |
| 7 | | 2,5,6 | 2 | 7 | 7 | | | | | | | |
| 7 | | 3,4,5 | 2 | 7 | 7 | | | | | | | |
| 7 | | 3,4,6 | 4 | 7 | 7 | | | | | | | |
| 3 | | 3,5,6 | 2 | 7 | 7 | | | | | | | |
| 7 | | 4,5,6 | 4 | 7 | 7 | | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F41386 | HZD* | 24 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | F41386 | HZD* | 13 | 0.5 | 0.5 | 0 | 1 | 0.5 | 0.5 | 2 | 2 | |
| 7 | | 2,3,4 | 4 | 7 | 3 | | | | | | | |
| 7 | | 2,3,5 | 4 | 7 | 3 | | | | | | | |
| 7 | | 2,3,6 | 4 | 7 | 3 | | | | | | | |
| 7 | | 2,4,5 | 4 | 7 | 3 | | | | | | | |
| 7 | | 2,4,6 | 4 | 7 | 3 | | | | | | | |
| 7 | | 2,5,6 | 4 | 7 | 3 | | | | | | | |
| 7 | | 3,4,5 | 4 | 7 | 3 | | | | | | | |
| 7 | | 3,4,6 | 4 | 7 | 3 | | | | | | | |
| 7 | | 3,5,6 | 4 | 7 | 3 | | | | | | | |
| 7 | | 4,5,6 | 4 | 3 | 3 | | | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZE | 24 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZE | 4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.3 | 0.0 | 2 | 3 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZE | 4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.3 | 0.0 | 2 | 3 | |
| | 2 | HZE | 20 | 0.3 | 0.3 | 0.3 | 1.3 | 0.7 | 0.3 | 3 | 3 | |
| | 3 | HZE | 29 | 1.0 | 1.3 | 0.3 | 2.0 | 1.7 | 1.7 | 7 | 7 | |
| | 4 | HZE | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| | 5 | HZE | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| | 6 | HZE | 32 | 1.0 | 2.7 | 0.3 | 2.0 | 1.7 | 1.0 | 22 | 22 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZF | 24 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | EPA | |
| | | | 48 | 1 | 2 | 1 | 3 | 2 | 2 | 29 | 14 | |
| | | | 72 | 1 | 1 | 1 | 3 | 2 | 1 | 22 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 1 | 11 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| GHS Tissue | | 1 HZF | 32 | 1.0 | 2.0 | 1.0 | 2.7 | 2.0 | 1.7 | 14 | 14 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZF | 32 | 1.0 | 2.0 | 1.0 | 2.7 | 2.0 | 1.7 | 14 | 14 | |
| | 2 | HZF | 29 | 1.0 | 1.3 | 0.7 | 2.7 | 1.3 | 1.0 | 7 | 7 | |
| | 3 | HZF | 34 | 1.0 | 2.3 | 0.7 | 2.0 | 2.0 | 2.3 | 22 | 22 | |
| | 4 | HZF | 41 | 1.0 | 3.3 | 1.0 | 2.0 | 2.3 | 2.7 | 22 | 22 | |
| | 5 | HZF | 39 | 1.0 | 2.3 | 1.0 | 2.3 | 2.0 | 0.7 | 14 | 14 | |
| | 6 | HZF | 32 | 1.0 | 2.0 | 0.7 | 1.7 | 1.7 | 0.7 | 7 | 7 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 2 | HZE | 24 | 1 | 1 | 1 | 2 | 2 | 1 | 20 | EPA |
| | | | 48 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 3 |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | | | 14 days | | | | | | | | 0 |
| | | | 21 days | | | | | | 0 | | |
| | 2 | HZE | MAS 20 | 0.333333 | 0.333333 | 0.333333 | 1.333333333 | 0.666666667 | 0.333333333 | 3 | 3 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 0.666667 | 0.333333 | 1.666667 | 1.166667 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.5 | 0.166667 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 |
| | 1,2,4 | 0.166667 | 0.166667 | 1 | 0.5 | 3 | 3 | 1,3,5 | 0.5 | 0.166667 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | GHS Rating | 4 | 4 | 4 |
| | 1,2,5 | 0.166667 | 0.166667 | 1 | 0.5 | 3 | 3 | 1,3,6 | 1 | 0.333333 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | GHS Rating | 2 | 4 | 4 |
| | 1,2,6 | 0.666667 | 0.333333 | 1.666667 | 1.166667 | 22 | 22 | 1,4,5 | 0 | 0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 | GHS Rating | 4 | 4 | 4 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 2 | HZF | 24 | 1 | 2 | 1 | 3 | 2 | 2 | 29 | EPA |
| | | | 48 | 1 | 1 | 1 | 3 | 1 | 1 | 20 | 7 |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | | 0 |
| | | | 21 days | | | | | | 0 | | |
| | 2 | HZF | MAS 29 | 1 | 1.333333 | 0.666667 | 2.666666667 | 1.333333333 | 1 | 7 | 7 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 1 | 0.833333 | 2.666667 | 2 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 1 |
| | GHS Rating | 2 | 4 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | 2 |
| | 1,2,4 | 1 | 1 | 2.666667 | 2.166667 | 22 | 22 | 1,3,5 | 1 | 1 | 1 |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | 2 |
| | 1,2,5 | 1 | 1 | 2.666667 | 2 | 14 | 14 | 1,3,6 | 1 | 0.833333 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 14 | 14 | GHS Rating | 2 | 4 | 4 |
| | 1,2,6 | 1 | 0.833333 | 2.666667 | 1.833333 | 14 | 14 | 1,4,5 | 1 | 1 | 1 |
| GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 2 | 2 | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 3 | HZE | 24 | 1 | 2 | 1 | 2 | 2 | 3 | 29 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 2 | 2 | 17 | 7 |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 3 | HZE | 29 | 1 | 1.333333 | 0.333333 | 2 | 1.66666667 | 1.66666667 | 7 | 7 |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | |
| 1.333333 | 1 | 7 | 7 | Combina- tion block #3 | 1,4,6 | 0.5 | 0.2 | 1.3 | 1.0 | 22 | 22 |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 |
| 1.333333 | 1 | 7 | 7 | | 1,5,6 | 0.5 | 0.2 | 1.3 | 1.0 | 22 | 22 |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 |
| 2 | 1.666667 | 22 | 22 | | 2,3,4 | 0.7 | 0.3 | 1.7 | 1.2 | 7 | 7 |
| 4 | 4 | 22 | 22 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 |
| 0.583333 | 0.166667 | 2 | 3 | 2,3,5 | 0.7 | 0.3 | 1.7 | 1.2 | 7 | 7 | |
| 4 | 4 | 2 | 3 | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 3 | HZF | 24 | 1 | 3 | 1 | 2 | 2 | 3 | 34 | EPA |
| | | | 48 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | 22 |
| | | | 72 | 1 | 1 | 0 | 2 | 2 | 2 | 17 | GHS |
| | | | 7 days | 1 | 1 | 0 | 3 | 2 | 3 | 21 | 22 |
| | | | 14 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | |
| | | | 21 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 3 | HZF | 34 | 1 | 2.333333 | 0.666667 | 2 | 2 | 2.333333333 | 22 | 22 |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | |
| 2.333333 | 2.166667 | 22 | 22 | Combina- tion block #3 | 1,4,6 | 1.0 | 1.0 | 2.3 | 2.2 | 22 | 22 |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 |
| 2.5 | 2 | 22 | 22 | | 1,5,6 | 1.0 | 1.0 | 2.5 | 2.0 | 14 | 14 |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 14 | 14 |
| 2.333333 | 2 | 22 | 22 | | 2,3,4 | 1.0 | 0.8 | 2.3 | 2.2 | 22 | 22 |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 4 | 2 | 2 | 22 | 22 |
| 2.5 | 2.166667 | 22 | 22 | 2,3,5 | 1.0 | 0.8 | 2.5 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | GHS Rating | 2 | 4 | 2 | 2 | 22 | 22 | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|-------------------|--------------|----------------|-------------|----------------|-----------------|----------------|---------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZE | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 72 | | | | | | | | 0 | 2 |
| | | | 7 days | | | | | | | | 0 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 4 | HZE | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combinatio block #4 | 2,3,6 | 1.0 | 0.3 | 2.0 | 1.7 | 22 | 22 | Combinatio block #5 | 3,4,5 | 0.5 | 0.2 | |
| | GHS Rating | 4 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.2 | 0.2 | 0.9 | 0.3 | 3 | 3 | | 3,4,6 | 1.0 | 0.3 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 2 | 4 | |
| | 2,4,6 | 0.7 | 0.3 | 1.7 | 1.2 | 22 | 22 | | 3,5,6 | 1.0 | 0.3 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 | | GHS Rating | 2 | 4 | |
| | 2,5,6 | 0.7 | 0.3 | 1.7 | 1.2 | 22 | 22 | | 4,5,6 | 0.5 | 0.2 | |
| GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 | GHS Rating | 4 | 4 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|---------------------------|-------------------|--------------|----------------|-------------|----------------|-----------------|----------------|---------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 4 | HZF | 24 | 1 | 4 | 1 | 2 | 3 | 3 | 41 | EPA |
| | | | 48 | 1 | 3 | 1 | 2 | 2 | 3 | 34 | 22 |
| | | | 72 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | GHS |
| | | | 7 days | 1 | 2 | 0 | 2 | 2 | 1 | 20 | 22 |
| | | | 14 days | 1 | 2 | 0 | 2 | 2 | 2 | 22 | |
| | | | 21 days | 2 | 1 | 0 | 2 | 2 | 1 | 20 | |
| | | | | | | | | | | | |
| | 4 | HZF | 41 | 1 | 3.333333 | 1 | 2 | 2.333333333 | 2.666666667 | 22 | 22 |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 0.7 | 2.3 | 1.8 | 22 | 22 | Combinatio block #5 | 3,4,5 | 1.0 | 1.0 |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 2,4,5 | 1.0 | 1.0 | 2.5 | 2.2 | 22 | 22 | | 3,4,6 | 1.0 | 0.8 |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 4 |
| | 2,4,6 | 1.0 | 0.8 | 2.3 | 2.0 | 22 | 22 | | 3,5,6 | 1.0 | 0.8 |
| | GHS Rating | 2 | 4 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 4 |
| | 2,5,6 | 1.0 | 0.8 | 2.5 | 1.8 | 14 | 14 | | 4,5,6 | 1.0 | 1.0 |
| GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 2 | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|---------|----------|------|----------------|--------------|-------------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZE | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZE | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 4 | 7 | | |
| 1.3 | 0.8 | 7 | 7 | | | | HZE | 1,2,4 | 4 | 3 | | |
| 4 | 4 | 7 | 7 | | | | | 1,2,5 | 4 | 3 | | |
| 2.0 | 1.7 | 22 | 22 | | | | | 1,2,6 | 4 | 22 | | |
| 2 | 4 | 22 | 22 | | | | | 1,3,4 | 4 | 7 | | |
| 2.0 | 1.7 | 22 | 22 | | | | | 1,3,5 | 4 | 7 | | |
| 2 | 4 | 22 | 22 | | | | | 1,3,6 | 2 | 22 | | |
| 1.3 | 0.8 | 22 | 22 | | | | | 1,4,5 | 4 | 3 | | |
| 4 | 4 | 22 | 22 | | | | | 1,4,6 | 4 | 22 | | |
| | | | | | | | | 1,5,6 | 4 | 22 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZF | 24 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 2 | 0 | 23 | 14 | |
| | | | 72 | 1 | 1 | 1 | 2 | 2 | 0 | 18 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZF | 39 | 1 | 2.333333 | 1 | 2.33333333 | 2 | 0.666666667 | 14 | 14 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 2 | 22 | | |
| 2.2 | 2.2 | 22 | 22 | | | | HZF | 1,2,4 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,2,5 | 2 | 14 | | |
| 2.0 | 2.2 | 22 | 22 | | | | | 1,2,6 | 2 | 14 | | |
| 2 | 2 | 22 | 22 | | | | | 1,3,4 | 2 | 22 | | |
| 2.2 | 2.0 | 22 | 22 | | | | | 1,3,5 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,3,6 | 2 | 22 | | |
| 2.2 | 2.2 | 22 | 22 | | | | | 1,4,5 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,4,6 | 2 | 22 | | |
| | | | | | | | | 1,5,6 | 2 | 14 | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|---------|----------|----------|-------------|--------------|-------------|---------|-------------------|--|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZE | 24 | 1 | 4 | 0 | 2 | 2 | 2 | 32 | EPA | |
| | | | 48 | 1 | 2 | 0 | 2 | 2 | 1 | 20 | 22 | |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 0 | 21 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 22 | |
| | | | 14 days | 1 | 1 | 0 | 2 | 2 | 1 | 15 | | |
| | | | 21 days | 2 | 1 | 0 | 2 | 2 | 1 | 20 | | |
| | | | | | | | | | | | | |
| | 6 | HZE | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZE | 32 | 1 | 2.666667 | 0.333333 | 2 | 1.666666667 | 1 | 22 | 22 | |
| 7 | 2,3,4 | | 4 | 7 | | 7 | | | | | | |
| 3 | 2,3,5 | | 4 | 7 | | 7 | | | | | | |
| 3 | 2,3,6 | | 2 | 22 | | 22 | | | | | | |
| 22 | 2,4,5 | | 4 | 3 | | 3 | | | | | | |
| 7 | 2,4,6 | | 4 | 22 | | 22 | | | | | | |
| 7 | 2,5,6 | | 4 | 22 | | 22 | | | | | | |
| 22 | 3,4,5 | | 4 | 7 | | 7 | | | | | | |
| 2 | 3,4,6 | | 2 | 22 | | 22 | | | | | | |
| 22 | 3,5,6 | | 2 | 22 | | 22 | | | | | | |
| 22 | 4,5,6 | | 4 | 22 | | 22 | | | | | | |
| | | | | | | | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZF | 24 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 2 | 0 | 23 | 7 | |
| | | | 72 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 6 | HZF | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZF | 32 | 1 | 2 | 0.666667 | 1.666666667 | 1.666666667 | 0.666666667 | 7 | 7 | |
| 22 | 2,3,4 | | 2 | 22 | | 22 | | | | | | |
| 22 | 2,3,5 | | 2 | 22 | | 22 | | | | | | |
| 14 | 2,3,6 | | 2 | 22 | | 22 | | | | | | |
| 14 | 2,4,5 | | 2 | 22 | | 22 | | | | | | |
| 22 | 2,4,6 | | 2 | 22 | | 22 | | | | | | |
| 22 | 2,5,6 | | 2 | 14 | | 14 | | | | | | |
| 22 | 3,4,5 | | 2 | 22 | | 22 | | | | | | |
| 22 | 3,4,6 | | 2 | 22 | | 22 | | | | | | |
| 22 | 3,5,6 | | 2 | 22 | | 22 | | | | | | |
| 14 | 4,5,6 | | 2 | 22 | | 22 | | | | | | |

IIVS Submission - In Vivo Data and Analysis for the Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZG* | 24 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 9 | EPA |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZG* | 9 | 0.3 | 0.3 | 0.0 | 1.0 | 0.0 | 0.0 | 2 | 3 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZG* | 9 | 0.3 | 0.3 | 0.0 | 1.0 | 0.0 | 0.0 | 2 | 3 | |
| | 2 | HZG* | 18 | 0.3 | 0.3 | 0.3 | 1.0 | 0.3 | 0.3 | 3 | 3 | |
| | 3 | HZG* | 20 | 0.7 | 1.0 | 0.0 | 1.7 | 1.0 | 0.3 | 3 | 7 | |
| | 4 | HZG* | 18 | 0.7 | 0.7 | 0.3 | 1.7 | 0.3 | 0.3 | 3 | 7 | |
| | 5 | HZG* | 15 | 0.7 | 0.7 | 0.0 | 1.0 | 1.0 | 0.3 | 3 | 3 | |
| | 6 | HZG* | 11 | 0.3 | 0.3 | 0.0 | 1.7 | 0.7 | 0.0 | 7 | 7 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZH | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 2 | HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 3 | HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 4 | HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 5 | HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 6 | HZH | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZG* | 24 | 1 | 1 | 1 | 2 | 1 | 1 | 18 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZG* | 18 | 0.333333 | 0.333333 | 0.333333 | 1 | 0.333333333 | 0.333333333 | 3 | 3 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0.5 | 0.166667 | 1.333333 | 0.666667 | 3 | 7 | Combina- tion block #2 | 1,3,4 | 0.666667 | 0.166667 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,4 | 0.5 | 0.333333 | 1.333333 | 0.333333 | 3 | 7 | 1,3,5 | 0.666667 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,5 | 0.5 | 0.166667 | 1 | 0.666667 | 3 | 3 | 1,3,6 | 0.5 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,6 | 0.333333 | 0.166667 | 1.333333 | 0.5 | 7 | 7 | 1,4,5 | 0.666667 | 0.166667 | 0.166667 | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|--|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZH | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 72 | | | | | | | | 0 | |
| | | | 7 days | | | | | | | | 0 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0 | 0 | 0 | 0 | 0 | 0 | Combina- tion block #2 | 1,3,4 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,4 | 0 | 0 | 0 | 0 | 0 | 0 | 1,3,5 | 0 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,5 | 0 | 0 | 0 | 0 | 0 | 0 | 1,3,6 | 0 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,6 | 0 | 0 | 0 | 0 | 0 | 0 | 1,4,5 | 0 | 0 | 0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | GHS Rating | 4 | 4 | 4 | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZG* | 24 | 1 | 2 | 0 | 2 | 2 | 1 | 20 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZG* | 20 | 0.666667 | 1 | 0 | 1.666666667 | 1 | 0.333333333 | 3 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.666667 | 0.666667 | 3 | 7 | Combinatio | 1,4,6 | 0.5 | 0.2 | 1.7 | 0.5 | 7 | 7 | |
| 4 | 4 | 3 | 7 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 1.333333 | 1 | 3 | 7 | #3 | 1,5,6 | 0.5 | 0.0 | 1.3 | 0.8 | 7 | 7 | |
| 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 1.666667 | 0.833333 | 7 | 7 | | 2,3,4 | 0.7 | 0.3 | 1.7 | 0.7 | 3 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 1.333333 | 0.666667 | 3 | 7 | | 2,3,5 | 0.7 | 0.2 | 1.3 | 1.0 | 3 | 7 | |
| 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZH | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | 0 | GHS | |
| | | | 7 days | | | | | | | 0 | 0 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 0 | 0 | 0 | 0 | Combinatio | 1,4,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| 4 | 4 | 0 | 0 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | |
| 0 | 0 | 0 | 0 | #3 | 1,5,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | |
| 0 | 0 | 0 | 0 | | 2,3,4 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | |
| 0 | 0 | 0 | 0 | | 2,3,5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|---------------------------|------------|--------------|---------|----------|----------|----------|------------|--------------|--------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 4 | HZG* | 24 | 1 | 1 | 1 | 2 | 1 | 1 | 18 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 0 | 0 | 9 | 3 |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 4 | HZG* | 18 | 0.666667 | 0.666667 | 0.333333 | 1.66666667 | 0.333333333 | 0.333333333 | 3 | 7 |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 0.5 | 0.2 | 1.7 | 0.8 | 7 | 7 | 7 | 3,4,5 | 0.7 | 0.2 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 |
| | 2,4,5 | 0.7 | 0.3 | 1.3 | 0.7 | 3 | 7 | 7 | 3,4,6 | 0.7 | 0.2 |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | 7 | GHS Rating | 4 | 4 |
| | 2,4,6 | 0.5 | 0.3 | 1.7 | 0.5 | 7 | 7 | 7 | 3,5,6 | 0.7 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 |
| | 2,5,6 | 0.5 | 0.2 | 1.3 | 0.8 | 7 | 7 | 7 | 4,5,6 | 0.7 | 0.2 |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|---------------------------|------------|--------------|---------|---------|---------|----------|---------|--------------|--------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 4 | HZH | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 4 | HZH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 3,4,5 | 0.0 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 |
| | 2,4,5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 3,4,6 | 0.0 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 |
| | 2,4,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 3,5,6 | 0.0 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 |
| | 2,5,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 4,5,6 | 0.0 | 0.0 |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|----------|----------|------|----------------|--------------|-------------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZG* | 24 | 1 | 1 | 0 | 2 | 2 | 1 | 15 | EPA | |
| | | | 48 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | 0 | 3 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | | | | | | | | | | | | |
| | 5 | HZG* | 15 | 0.666667 | 0.666667 | 0 | 1 | 1 | 0.333333333 | 3 | 3 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 4 | 7 | | |
| 1.7 | 1.0 | 3 | 7 | | | | HZG* | 1,2,4 | 4 | 7 | | |
| 4 | 4 | 3 | 7 | | | | | 1,2,5 | 4 | 3 | | |
| 1.7 | 0.8 | 7 | 7 | | | | | 1,2,6 | 4 | 7 | | |
| 4 | 4 | 7 | 7 | | | | | 1,3,4 | 4 | 7 | | |
| 1.7 | 1.0 | 7 | 7 | | | | | 1,3,5 | 4 | 7 | | |
| 4 | 4 | 7 | 7 | | | | | 1,3,6 | 4 | 7 | | |
| 1.7 | 0.8 | 7 | 7 | | | | | 1,4,5 | 4 | 7 | | |
| 4 | 4 | 7 | 7 | | | | | 1,4,6 | 4 | 7 | | |
| | | | | | | | | 1,5,6 | 4 | 7 | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|---------|------|------|----------------|--------------|-----------|---|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZH | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 5 | HZH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | HZH | 1,2,4 | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,2,5 | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | | 1,2,6 | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,3,4 | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | | 1,3,5 | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,3,6 | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | | 1,4,5 | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,4,6 | 4 | 0 | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|----------|----------|------|------------|--------------|-----------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZG* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | 7 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZG* | 11 | 0.333333 | 0.333333 | 0 | 1.66666667 | 0.666666667 | 0 | 7 | 7 | |
| 3 | | 2,3,4 | 4 | 7 | | 3 | | | | | | |
| 3 | | 2,3,5 | 4 | 7 | | 3 | | | | | | |
| 3 | | 2,3,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 2,4,5 | 4 | 7 | | 3 | | | | | | |
| 3 | | 2,4,6 | 4 | 7 | | 7 | | | | | | |
| 3 | | 2,5,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 3,4,5 | 4 | 7 | | 3 | | | | | | |
| 3 | | 3,4,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 3,5,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 4,5,6 | 4 | 7 | | 7 | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZH | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | | 2,3,4 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,3,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,3,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,4,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,4,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,5,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 3,4,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 3,4,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 3,5,6 | 4 | 0 | | 0 | | | | | | |

IIVS Submission - In Vivo Data and Analysis for the Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
|---|-----------|-----------|---------|---------|------|------|---------|--------------|-----------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | F40840 | HZI | 24 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | EPA |
| | | | 48 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | 7 |
| | | | 72 | 1 | 1 | 1 | 3 | 2 | 2 | 24 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| GHS Tissue | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | F40840 | HZI | 39 | 1.0 | 2.7 | 1.0 | 3.0 | 2.0 | 2.0 | 7 | 7 |
| Summary block used analysis of the twenty combinations | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | F40840 | HZI | 39 | 1.0 | 2.7 | 1.0 | 3.0 | 2.0 | 2.0 | 7 | 7 |
| | F40855 | HZI | 36 | 1.0 | 2.3 | 1.0 | 3.0 | 2.0 | 2.3 | 14 | 14 |
| | F40881 | HZI | 39 | 1.0 | 3.0 | 1.0 | 2.0 | 1.7 | 1.7 | 22 | 22 |
| | F41365 | HZI | 43 | 1.0 | 3.0 | 0.7 | 2.3 | 2.3 | 3.0 | 22 | 22 |
| | F41379 | HZI | 29 | 1.0 | 1.3 | 0.3 | 2.0 | 1.7 | 1.3 | 7 | 7 |
| | F41405 | HZI | 39 | 1.0 | 3.7 | 1.0 | 2.3 | 2.0 | 1.7 | 0 | 0 |
| | Dose Vol | | 0.1 | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
|---|-----------|-----------|---------|---------|------|------|---------|--------------|-----------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 1 | HZJ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| GHS Tissue | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 1 | HZJ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| Summary block used analysis of the twenty combinations | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 1 | HZJ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 2 | HZJ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 3 | HZJ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 4 | HZJ | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | 5 | HZJ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 6 | HZJ | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | Dose Vol | | 0.1 | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F40855 | HZI | 24 | 1 | 3 | 1 | 3 | 2 | 3 | 36 | EPA | |
| | | | 48 | 1 | 2 | 1 | 3 | 2 | 2 | 29 | 14 | |
| | | | 72 | 1 | 2 | 1 | 3 | 2 | 2 | 29 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F40855 | HZI | 36 | 1 | 2.333333 | 1 | 3 | 2 | 2.333333333 | 14 | 14 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 1 | 1 | 3 | 2 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 1,2,4 | 1 | 1 | 3 | 2.166667 | 22 | 22 | | 1,3,5 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 1,2,5 | 1 | 1 | 3 | 2 | 14 | 14 | | 1,3,6 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 14 | 14 | | GHS Rating | 2 | 2 | |
| | 1,2,6 | 1 | 1 | 3 | 2 | 14 | 14 | | 1,4,5 | 1 | 0.833333 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 14 | 14 | | GHS Rating | 2 | 4 | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZJ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 2 | HZJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0 | 0 | 0 | 0 | 0 | 0 | Combina- tion block #2 | 1,3,4 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0 | 0 | 0.25 | 0 | 0 | 2 | | 1,3,5 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0 | 0 | 0 | 0 | 0 | 0 | | 1,3,6 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0 | 0 | 0.25 | 0 | 0 | 2 | | 1,4,5 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR |
|----------------|-----------------|----------------|----------------|--------------------------------|-------------------|----------------|--------------|----------------|-----------------|----------------|----------------|
| | | | | OPACITY | AREA | | REDNESS | CHEMOSIS | DISCHARGE | | |
| 0.1 | F40881 | HZI | 24 | 1 | 4 | 1 | 2 | 2 | 3 | 39 | EPA |
| | | | 48 | 1 | 3 | 1 | 2 | 1 | 1 | 28 | 22 |
| | | | 72 | 1 | 2 | 1 | 2 | 2 | 1 | 25 | GHS |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 22 |
| | | | 14 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | |
| | | | 21 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | F40881 | HZI | 39 | 1 | 3 | 1 | 2 | 1.66666667 | 1.66666667 | 22 | 22 |
| Redness | Chemosis | DtC EPA | DtC GHS | | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS |
| 2.666667 | 2.166667 | 22 | 22 | Combinatio tion block #3 | 1,4,6 | 1.0 | 1.0 | 2.7 | 2.2 | 22 | 22 |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 |
| 2.5 | 1.833333 | 22 | 22 | | 1,5,6 | 1.0 | 1.0 | 2.7 | 2.0 | 7 | 7 |
| 2 | 4 | 22 | 22 | | GHS Rating | 2 | 4 | 2 | 2 | 7 | 7 |
| 2.666667 | 2 | 22 | 22 | | 2,3,4 | 1.0 | 1.0 | 2.7 | 2.2 | 22 | 22 |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 |
| 2.666667 | 2.166667 | 22 | 22 | 2,3,5 | 1.0 | 1.0 | 2.5 | 1.8 | 22 | 22 | |
| 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
|----------------|-----------------|----------------|----------------|--------------------------------|-------------------|----------------|--------------|----------------|-----------------|----------------|----------------|-----|
| | | | | OPACITY | AREA | | REDNESS | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZJ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | |
| 0.25 | 0 | 0 | 2 | Combinatio tion block #3 | 1,4,6 | 0.0 | 0.0 | 0.5 | 0.0 | 0 | 2 | |
| 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | |
| 0 | 0 | 0 | 0 | | 1,5,6 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | |
| 0.25 | 0 | 0 | 2 | | 2,3,4 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | |
| 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | |
| 0.25 | 0 | 0 | 2 | 2,3,5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | | |
| 4 | 4 | 0 | 2 | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|---------------------------|--------------------|--------------|---------|---------|----------|----------|-------------|---------------------------|------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | F41365 | HZI | 24 | 1 | 4 | 1 | 3 | 3 | 3 | 43 | EPA |
| | | | 48 | 1 | 3 | 1 | 2 | 2 | 3 | 34 | 22 |
| | | | 72 | 1 | 2 | 0 | 2 | 2 | 3 | 24 | GHS |
| | | | 7 days | 1 | 1 | 0 | 2 | 2 | 2 | 17 | 22 |
| | | | 14 days | 2 | 1 | 0 | 2 | 2 | 2 | 22 | |
| | | | 21 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | F41365 | HZI | 43 | 1 | 3 | 0.666667 | 2.333333333 | 2.333333333 | 3 | 22 | 22 |
| | Combinatio Opacity | | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 1.0 | 2.7 | 2.0 | 22 | 22 | Combinatio block #5 | 3,4,5 | 1.0 | 0.8 |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 4 |
| | 2,4,5 | 1.0 | 0.8 | 2.7 | 2.2 | 22 | 22 | | 3,4,6 | 1.0 | 1.0 |
| | GHS Rating | 2 | 4 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 2,4,6 | 1.0 | 1.0 | 2.7 | 2.2 | 22 | 22 | | 3,5,6 | 1.0 | 1.0 |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 4 |
| | 2,5,6 | 1.0 | 1.0 | 2.7 | 2.0 | 14 | 14 | | 4,5,6 | 1.0 | 0.8 |
| GHS Rating | 2 | 4 | 2 | 2 | 14 | 14 | GHS Rating | 2 | 4 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 4 | HZJ | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 |
| | Combinatio Opacity | | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | Combinatio block #5 | 3,4,5 | 0.0 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 |
| | 2,4,5 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | | 3,4,6 | 0.0 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 |
| | 2,4,6 | 0.0 | 0.0 | 0.5 | 0.0 | 0 | 2 | | 3,5,6 | 0.0 | 0.0 |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 |
| | 2,5,6 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | | 4,5,6 | 0.0 | 0.0 |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | GHS Rating | 4 | 4 | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
|----------------|-----------------|----------------|----------------|---------|----------|----------|---------|----------------|-------------|-----------|---------|---------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | DISCHARGE | | | |
| 0.1 | F41379 | HZI | 24 | 1 | 2 | 1 | 2 | 2 | 3 | 29 | EPA | | |
| | | | 48 | 1 | 1 | 0 | 2 | 2 | 1 | 15 | 7 | | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | | |
| | | | 14 days | | | | | | | 0 | | | |
| | | | 21 days | | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | F41379 | HZI | 29 | 1 | 1.333333 | 0.333333 | 2 | 1.666666667 | 1.333333333 | 7 | 7 | | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 2 | 22 | | |
| 2.2 | 2.0 | 22 | 22 | | | | | HZI | 1,2,4 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | | 1,2,5 | 2 | 14 | | |
| 2.3 | 2.2 | 22 | 22 | | | | | | 1,2,6 | 2 | 14 | | |
| 2 | 2 | 22 | 22 | | | | | | 1,3,4 | 2 | 22 | | |
| 2.2 | 1.8 | 22 | 22 | | | | | | 1,3,5 | 2 | 22 | | |
| 2 | 4 | 22 | 22 | | | | | | 1,3,6 | 2 | 22 | | |
| 2.3 | 2.2 | 22 | 22 | | | | | | 1,4,5 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | | 1,4,6 | 2 | 22 | | |
| | | | | | | | | | 1,5,6 | 2 | 7 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | DISCHARGE | | | |
| 0.1 | 5 | HZJ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | 5 | HZJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 4 | 0 | | |
| 0.3 | 0.0 | 0 | 2 | | | | | HZJ | 1,2,4 | 4 | 2 | | |
| 4 | 4 | 0 | 2 | | | | | | 1,2,5 | 4 | 0 | | |
| 0.5 | 0.0 | 0 | 2 | | | | | | 1,2,6 | 4 | 2 | | |
| 4 | 4 | 0 | 2 | | | | | | 1,3,4 | 4 | 2 | | |
| 0.3 | 0.0 | 0 | 2 | | | | | | 1,3,5 | 4 | 0 | | |
| 4 | 4 | 0 | 2 | | | | | | 1,3,6 | 4 | 2 | | |
| 0.5 | 0.0 | 0 | 2 | | | | | | 1,4,5 | 4 | 2 | | |
| 4 | 4 | 0 | 2 | | | | | | 1,4,6 | 4 | 2 | | |
| | | | | | | | | | 1,5,6 | 4 | 2 | | |

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| 0 Volume | 4,5,6 | | 4 | 0 | | 0 | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
|-------------|-----------|--------------|---------|---------|----------|------|--------------|----------|-------------|---------|---------------|----------|
| | ANIMAL ID | TEST MATL | | TIME | OPACITY | | AREA | IRIS | REDNESS | | | CHEMOSIS |
| 0.1 | F41405 | HZI | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | EPA | |
| | | | 48 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | | |
| | | | 72 | 1 | 3 | 1 | 2 | 2 | 1 | 30 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | | |
| | | | 14 days | 1 | 1 | 0 | 1 | 0 | 0 | 7 | | |
| | | | 21 days | 1 | 1 | 0 | 0 | 0 | 0 | 5 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F41405 | HZI | 39 | 1 | 3.666667 | 1 | 2.33333333 | 2 | 1.666666667 | 0 | 0 | |
| 22 | | 2,3,4 | 2 | 22 | | 22 | | | | | | |
| 22 | | 2,3,5 | 2 | 22 | | 22 | | | | | | |
| 14 | | 2,3,6 | 2 | 22 | | 22 | | | | | | |
| 14 | | 2,4,5 | 2 | 22 | | 22 | | | | | | |
| 22 | | 2,4,6 | 2 | 22 | | 22 | | | | | | |
| 22 | | 2,5,6 | 2 | 14 | | 14 | | | | | | |
| 22 | | 3,4,5 | 2 | 22 | | 22 | | | | | | |
| 22 | | 3,4,6 | 2 | 22 | | 22 | | | | | | |
| 22 | | 3,5,6 | 2 | 22 | | 22 | | | | | | |
| 7 | | 4,5,6 | 2 | 22 | | 22 | | | | | | |
| Volume | 4,5,6 | | 4 | 0 | | 0 | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
| | ANIMAL ID | TEST MATL | | TIME | OPACITY | | AREA | IRIS | REDNESS | | | CHEMOSIS |
| 0.1 | 6 | HZJ | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZJ | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| 0 | | 2,3,4 | 4 | 2 | | 0 | | | | | | |
| 0 | | 2,3,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,3,6 | 4 | 2 | | 0 | | | | | | |
| 0 | | 2,4,5 | 4 | 2 | | 0 | | | | | | |
| 0 | | 2,4,6 | 4 | 2 | | 0 | | | | | | |
| 0 | | 2,5,6 | 4 | 2 | | 0 | | | | | | |
| 0 | | 3,4,5 | 4 | 2 | | 0 | | | | | | |
| 0 | | 3,4,6 | 4 | 2 | | 0 | | | | | | |
| 0 | | 3,5,6 | 4 | 2 | | 0 | | | | | | |
| 0 | | 4,5,6 | 4 | 2 | | 0 | | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZK | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA | |
| | | | 48 | 1 | 3 | 1 | 3 | 1 | 2 | 32 | 7 | |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 3 | 27 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| GHS Tissue | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 1 | HZK | 41 | 1.0 | 3.0 | 1.0 | 2.7 | 1.3 | 2.7 | 7 | 7 | |
| Summary block used analysis of the twenty combinations | 1 | HZK | 41 | 1.0 | 3.0 | 1.0 | 2.7 | 1.3 | 2.7 | 7 | 7 | |
| | 2 | HZK | 39 | 1.0 | 3.7 | 1.0 | 2.7 | 1.7 | 2.3 | 22 | 22 | |
| | 3 | HZK | 41 | 1.0 | 2.7 | 1.0 | 2.3 | 2.3 | 2.7 | 22 | 22 | |
| | 4 | HZK | 35 | 1.0 | 4.0 | 1.0 | 2.0 | 1.7 | 1.0 | 22 | 22 | |
| | 5 | HZK | 41 | 1.0 | 4.0 | 1.0 | 2.3 | 2.0 | 2.3 | 22 | 22 | |
| | 6 | HZK | 41 | 1.0 | 3.0 | 1.0 | 2.7 | 2.0 | 2.3 | 22 | 22 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZL | 24 | 1 | 3 | 1 | 2 | 1 | 3 | 32 | EPA | |
| | | | 48 | 1 | 2 | 1 | 3 | 1 | 1 | 25 | 22 | |
| | | | 72 | 1 | 1 | 1 | 2 | 1 | 0 | 16 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 22 | |
| | | | 14 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | | |
| | | | 21 days | 1 | 1 | 0 | 1 | 0 | 0 | 7 | | |
| GHS Tissue | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 1 | HZL | 32 | 1.0 | 2.0 | 1.0 | 2.3 | 1.0 | 1.3 | 22 | 22 | |
| Summary block used analysis of the twenty combinations | 1 | HZL | 32 | 1.0 | 2.0 | 1.0 | 2.3 | 1.0 | 1.3 | 22 | 22 | |
| | 2 | HZL | 27 | 1.0 | 1.3 | 0.3 | 2.0 | 1.3 | 1.3 | 7 | 7 | |
| | 3 | HZL | 35 | 1.0 | 2.0 | 0.3 | 1.7 | 1.0 | 1.0 | 7 | 7 | |
| | 4 | HZL | 41 | 1.0 | 2.7 | 0.7 | 2.7 | 1.7 | 1.0 | 7 | 7 | |
| | 5 | HZL | 41 | 1.0 | 2.0 | 1.0 | 3.0 | 2.0 | 2.3 | 22 | 22 | |
| | 6 | HZL | 37 | 1.0 | 3.0 | 1.0 | 2.3 | 1.7 | 1.7 | 0 | 22 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|---------------|--|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZK | 24 | 1 | 4 | 1 | 2 | 2 | 3 | 39 | EPA | |
| | | | 48 | 1 | 4 | 1 | 3 | 1 | 2 | 37 | 22 | |
| | | | 72 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | GHS | |
| | | | 7 days | 1 | 2 | 0 | 2 | 1 | 0 | 16 | 22 | |
| | | | 14 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | | |
| | | | 21 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | | |
| | | | | | | | | | | | | |
| | 2 | HZK | 39 | 1 | 3.666667 | 1 | 2.666666667 | 1.666666667 | 2.333333333 | 22 | 22 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 1 | 1 | 2.666667 | 2 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 1,2,4 | 1 | 1 | 2.666667 | 1.666667 | 22 | 22 | 1,3,5 | 1 | 1 | | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 1,2,5 | 1 | 1 | 2.666667 | 1.833333 | 22 | 22 | 1,3,6 | 1 | 1 | | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 1,2,6 | 1 | 1 | 2.666667 | 1.833333 | 22 | 22 | 1,4,5 | 1 | 1 | | |
| GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZL | 24 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 2 | 15 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZL | 27 | 1 | 1.333333 | 0.333333 | 2 | 1.333333333 | 1.333333333 | 7 | 7 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 1 | 0.666667 | 2.166667 | 1.166667 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 0.833333 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | | |
| | 1,2,4 | 1 | 0.833333 | 2.5 | 1.5 | 22 | 22 | 1,3,5 | 1 | 1 | | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | | |
| | 1,2,5 | 1 | 1 | 2.666667 | 1.666667 | 22 | 22 | 1,3,6 | 1 | 1 | | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 4 | | |
| | 1,2,6 | 1 | 1 | 2.333333 | 1.5 | 22 | 22 | 1,4,5 | 1 | 1 | | |
| GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|-------------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZK | 24 | 1 | 4 | 1 | 2 | 3 | 3 | 41 | EPA | |
| | | | 48 | 1 | 2 | 1 | 3 | 2 | 2 | 29 | 22 | |
| | | | 72 | 1 | 2 | 1 | 2 | 2 | 3 | 29 | GHS | |
| | | | 7 days | 1 | 2 | 0 | 3 | 2 | 1 | 22 | 22 | |
| | | | 14 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | | |
| | | | 21 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | | |
| | | | | | | | | | | | | |
| | 3 | HZK | 41 | 1 | 2.666667 | 1 | 2.333333333 | 2.33333333 | 2.666666667 | 22 | 22 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2.5 | 2 | 22 | 22 | Combinatio | 1,4,6 | 1.0 | 1.0 | 2.7 | 1.8 | 22 | 22 | |
| 2 | 2 | 22 | 22 | tion block | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |
| 2.5 | 2.166667 | 22 | 22 | #3 | 1,5,6 | 1.0 | 1.0 | 2.7 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| 2.666667 | 2.166667 | 22 | 22 | | 2,3,4 | 1.0 | 1.0 | 2.5 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| 2.5 | 1.833333 | 22 | 22 | | 2,3,5 | 1.0 | 1.0 | 2.5 | 2.2 | 22 | 22 | |
| 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| 0.1 | 3 | HZL | 24 | 1 | 4 | | | 1 | 2 | | | 1 |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 7 | |
| | | | 72 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 3 | HZL | 35 | 1 | 2 | 0.333333 | 1.666666667 | 1 | 1 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2.5 | 1.333333 | 22 | 22 | Combinatio | 1,4,6 | 1.0 | 1.0 | 2.5 | 1.7 | 22 | 22 | |
| 2 | 4 | 22 | 22 | tion block | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |
| 2.666667 | 1.5 | 22 | 22 | #3 | 1,5,6 | 1.0 | 1.0 | 2.7 | 1.8 | 22 | 22 | |
| 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |
| 2.333333 | 1.333333 | 22 | 22 | | 2,3,4 | 1.0 | 0.5 | 2.3 | 1.5 | 7 | 7 | |
| 2 | 4 | 22 | 22 | | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | |
| 2.833333 | 1.833333 | 22 | 22 | | 2,3,5 | 1.0 | 0.7 | 2.5 | 1.7 | 22 | 22 | |
| 2 | 4 | 22 | 22 | | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|-------------------|--------------|---------|----------------|-------------|----------------|-----------------|---------------------------|----------------|---------------------|-------------------|-------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZK | 24 | 1 | 4 | 1 | 2 | 2 | 1 | 35 | EPA | |
| | | | 48 | 1 | 4 | 1 | 2 | 2 | 1 | 35 | 22 | |
| | | | 72 | 1 | 4 | 1 | 2 | 1 | 1 | 33 | GHS | |
| | | | 7 days | 1 | 2 | 1 | 2 | 1 | 0 | 21 | 22 | |
| | | | 14 days | 1 | 2 | 0 | 1 | 1 | 0 | 14 | | |
| | | | 21 days | 1 | 1 | 0 | 1 | 0 | 0 | 7 | | |
| | 4 | HZK | 35 | 1 | 4 | 1 | 2 | 1.666666667 | 1 | 22 | 22 | |
| | Combinatio | | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 1.0 | 2.7 | 2.2 | 22 | 22 | Combinatio block #5 | 3,4,5 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 22 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 2,4,5 | 1.0 | 1.0 | 2.5 | 1.8 | 22 | 22 | | 3,4,6 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 2,4,6 | 1.0 | 1.0 | 2.7 | 1.8 | 22 | 22 | | 3,5,6 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 2,5,6 | 1.0 | 1.0 | 2.7 | 2.0 | 22 | 22 | | 4,5,6 | 1.0 | 1.0 | |
| GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|-------------------|--------------|---------|----------------|-------------|----------------|-----------------|---------------------------|----------------|---------------------|-------------------|-------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZL | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA | |
| | | | 48 | 1 | 3 | 1 | 3 | 2 | 0 | 30 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | 4 | HZL | 41 | 1 | 2.666667 | 0.666667 | 2.666666667 | 1.666666667 | 1 | 7 | 7 | |
| | Combinatio | | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 0.7 | 2.2 | 1.5 | 7 | 22 | Combinatio block #5 | 3,4,5 | 1.0 | 0.8 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 22 | | GHS Rating | 2 | 4 | |
| | 2,4,5 | 1.0 | 0.8 | 2.8 | 1.8 | 22 | 22 | | 3,4,6 | 1.0 | 0.8 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 4 | |
| | 2,4,6 | 1.0 | 0.8 | 2.5 | 1.7 | 7 | 22 | | 3,5,6 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 22 | | GHS Rating | 2 | 4 | |
| | 2,5,6 | 1.0 | 1.0 | 2.7 | 1.8 | 22 | 22 | | 4,5,6 | 1.0 | 1.0 | |
| GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR |
|----------------|-----------------|----------------|----------------|---------|------|------|----------------|--------------|------------|---------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZK | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA | |
| | | | 48 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | 22 | |
| | | | 72 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | GHS | |
| | | | 7 days | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 | |
| | | | 14 days | 2 | 1 | 1 | 2 | 2 | 2 | 27 | | |
| | | | 21 days | 3 | 1 | 0 | 2 | 2 | 1 | 25 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZK | 41 | 1 | 4 | 1 | 2.33333333 | 2 | 2.33333333 | 22 | 22 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 2 | 22 | | |
| 2.3 | 2.2 | 22 | 22 | | | | HZK | 1,2,4 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,2,5 | 2 | 22 | | |
| 2.5 | 2.2 | 22 | 22 | | | | | 1,2,6 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,3,4 | 2 | 22 | | |
| 2.5 | 2.2 | 22 | 22 | | | | | 1,3,5 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,3,6 | 2 | 22 | | |
| 2.5 | 2.0 | 22 | 22 | | | | | 1,4,5 | 2 | 22 | | |
| 2 | 2 | 22 | 22 | | | | | 1,4,6 | 2 | 22 | | |
| | | | | | | | | 1,5,6 | 2 | 22 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZL | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA | |
| | | | 48 | 1 | 1 | 1 | 3 | 2 | 2 | 24 | 22 | |
| | | | 72 | 1 | 1 | 1 | 3 | 2 | 2 | 24 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 22 | |
| | | | 14 days | 2 | 1 | 0 | 2 | 1 | 1 | 18 | | |
| | | | 21 days | 2 | 1 | 0 | 1 | 1 | 0 | 14 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZL | 41 | 1 | 2 | 1 | 3 | 2 | 2.33333333 | 22 | 22 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 2 | 22 | | |
| 2.8 | 1.8 | 22 | 22 | | | | HZL | 1,2,4 | 2 | 22 | | |
| 2 | 4 | 22 | 22 | | | | | 1,2,5 | 2 | 22 | | |
| 2.5 | 1.7 | 7 | 22 | | | | | 1,2,6 | 2 | 22 | | |
| 2 | 4 | 7 | 22 | | | | | 1,3,4 | 2 | 22 | | |
| 2.7 | 1.8 | 22 | 22 | | | | | 1,3,5 | 2 | 22 | | |
| 2 | 4 | 22 | 22 | | | | | 1,3,6 | 2 | 22 | | |
| 2.8 | 1.8 | 22 | 22 | | | | | 1,4,5 | 2 | 22 | | |
| 2 | 4 | 22 | 22 | | | | | 1,4,6 | 2 | 22 | | |
| | | | | | | | | 1,5,6 | 2 | 22 | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|--------|-----------|--------------|---------|---------|------|------|------------|--------------|------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZK | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA |
| | | | 48 | 1 | 3 | 1 | 3 | 2 | 3 | 36 | 22 |
| | | | 72 | 1 | 2 | 1 | 2 | 2 | 1 | 25 | GHS |
| | | | 7 days | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 |
| | | | 14 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | |
| | | | 21 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | |
| | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZK | 41 | 1 | 3 | 1 | 2.66666667 | 2 | 2.33333333 | 22 | 22 |
| 22 | | 2,3,4 | | 2 | 22 | | | | | | |
| 22 | | 2,3,5 | | 2 | 22 | | | | | | |
| 22 | | 2,3,6 | | 2 | 22 | | | | | | |
| 22 | | 2,4,5 | | 2 | 22 | | | | | | |
| 22 | | 2,4,6 | | 2 | 22 | | | | | | |
| 22 | | 2,5,6 | | 2 | 22 | | | | | | |
| 22 | | 3,4,5 | | 2 | 22 | | | | | | |
| 22 | | 3,4,6 | | 2 | 22 | | | | | | |
| 22 | | 3,5,6 | | 2 | 22 | | | | | | |
| 22 | | 4,5,6 | | 2 | 22 | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZL | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | 22 |
| | | | 48 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 1 | 23 | GHS |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 22 |
| | | | 14 days | 1 | 1 | 0 | 0 | 0 | 0 | 5 | |
| | | | 21 days | 1 | 1 | 0 | 0 | 0 | 0 | 5 | |
| | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZL | 37 | 1 | 3 | 1 | 2.33333333 | 1.66666667 | 1.66666667 | 0 | 22 |
| 22 | | 2,3,4 | | 2 | 7 | | | | | | |
| 22 | | 2,3,5 | | 2 | 22 | | | | | | |
| 22 | | 2,3,6 | | 2 | 22 | | | | | | |
| 22 | | 2,4,5 | | 2 | 22 | | | | | | |
| 22 | | 2,4,6 | | 2 | 22 | | | | | | |
| 22 | | 2,5,6 | | 2 | 22 | | | | | | |
| 22 | | 3,4,5 | | 2 | 22 | | | | | | |
| 22 | | 3,4,6 | | 2 | 22 | | | | | | |
| 22 | | 3,5,6 | | 2 | 22 | | | | | | |
| 22 | | 4,5,6 | | 2 | 22 | | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|--------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZM* | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZM* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | | 1 | HZM* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | | 2 | HZM* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | | 3 | HZM* | 11 | 0.3 | 0.3 | 0.0 | 1.7 | 0.7 | 0.0 | 3 | 7 |
| | | 4 | HZM* | 7 | 0.3 | 0.3 | 0.0 | 0.7 | 0.0 | 0.0 | 0 | 3 |
| | | 5 | HZM* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | | 6 | HZM* | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | | Dose Vol | 0.1 | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|--------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZN* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZN* | 11 | 0.3 | 0.3 | 0.0 | 1.0 | 0.7 | 0.0 | 3 | 3 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | | 1 | HZN* | 11 | 0.3 | 0.3 | 0.0 | 1.0 | 0.7 | 0.0 | 3 | 3 |
| | | 2 | HZN* | 7 | 0.3 | 0.3 | 0.0 | 0.7 | 0.0 | 0.0 | 2 | 3 |
| | | 3 | HZN* | 20 | 0.7 | 1.0 | 0.0 | 1.3 | 1.0 | 0.3 | 3 | 3 |
| | | 4 | HZN* | 25 | 0.7 | 1.0 | 0.3 | 1.0 | 0.3 | 0.7 | 3 | 3 |
| | | 5 | HZN* | 20 | 0.7 | 0.7 | 0.3 | 1.3 | 0.7 | 0.7 | 3 | 3 |
| | | 6 | HZN* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 |
| | | Dose Vol | 0.1 | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZM* | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZM* | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0.166667 | 0 | 1.083333 | 0.333333 | 3 | 7 | Combina- tion block #2 | 1,3,4 | 0.333333 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0.166667 | 0 | 0.583333 | 0 | 0 | 3 | | 1,3,5 | 0.166667 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0 | 0 | 0.5 | 0 | 0 | 2 | | 1,3,6 | 0.166667 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0 | 0 | 0.5 | 0 | 0 | 2 | | 1,4,5 | 0.166667 | 0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | GHS Rating | 4 | 4 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZN* | 24 | 1 | 1 | 0 | 1 | 0 | 0 | 7 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZN* | 7 | 0.333333 | 0.333333 | 0 | 0.666666667 | 0 | 0 | 2 | 3 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0.5 | 0 | 1.166667 | 0.833333 | 3 | 3 | Combina- tion block #2 | 1,3,4 | 0.666667 | 0.166667 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0.5 | 0.166667 | 1 | 0.5 | 3 | 3 | | 1,3,5 | 0.666667 | 0.166667 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0.5 | 0.166667 | 1.166667 | 0.666667 | 3 | 3 | | 1,3,6 | 0.5 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0.333333 | 0 | 0.833333 | 0.333333 | 3 | 3 | | 1,4,5 | 0.666667 | 0.333333 | |
| GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | GHS Rating | 4 | 4 | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZM* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZM* | 11 | 0.333333 | 0.333333 | 0 | 1.666666667 | 0.66666667 | 0 | 3 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.166667 | 0.333333 | 3 | 7 | Combinatio | 1,4,6 | 0.2 | 0.0 | 0.6 | 0.0 | 0 | 3 | |
| 4 | 4 | 3 | 7 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | |
| 1.083333 | 0.333333 | 3 | 7 | #3 | 1,5,6 | 0.0 | 0.0 | 0.5 | 0.0 | 0 | 2 | |
| 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | |
| 1.083333 | 0.333333 | 3 | 7 | | 2,3,4 | 0.3 | 0.0 | 1.2 | 0.3 | 3 | 7 | |
| 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 0.583333 | 0 | 0 | 3 | | 2,3,5 | 0.2 | 0.0 | 1.1 | 0.3 | 3 | 7 | |
| 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZN* | 24 | 1 | 2 | 0 | 2 | 2 | 1 | 20 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | 0 | 3 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZN* | 20 | 0.666667 | 1 | 0 | 1.333333333 | 1 | 0.333333333 | 3 | 3 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.166667 | 0.833333 | 3 | 3 | Combinatio | 1,4,6 | 0.5 | 0.2 | 1.0 | 0.5 | 3 | 3 | |
| 4 | 4 | 3 | 3 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | |
| 1.333333 | 0.833333 | 3 | 3 | #3 | 1,5,6 | 0.5 | 0.2 | 1.2 | 0.7 | 3 | 3 | |
| 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | |
| 1.166667 | 0.833333 | 3 | 3 | | 2,3,4 | 0.7 | 0.2 | 1.2 | 0.7 | 3 | 3 | |
| 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | |
| 1.166667 | 0.666667 | 3 | 3 | | 2,3,5 | 0.7 | 0.2 | 1.3 | 0.8 | 3 | 3 | |
| 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|------------|--------------|---------|----------|----------|----------|------------|---------------------------|--------------|---------|-------------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZM* | 24 | 1 | 1 | 0 | 1 | 0 | 0 | 7 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 4 | HZM* | MAS | 0.333333 | 0.333333 | 0 | 0.66666667 | 0 | 0 | 0 | 3 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combinatio block #4 | 2,3,6 | 0.2 | 0.0 | 1.1 | 0.3 | 3 | 7 | Combinatio block #5 | 3,4,5 | 0.3 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.2 | 0.0 | 0.6 | 0.0 | 0 | 3 | | 3,4,6 | 0.3 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.2 | 0.0 | 0.6 | 0.0 | 0 | 3 | | 3,5,6 | 0.2 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 3 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.0 | 0.0 | 0.5 | 0.0 | 0 | 2 | | 4,5,6 | 0.2 | 0.0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | GHS Rating | 4 | 4 | | | |
| | 4 | HZN* | MAS | 0.666667 | 1 | 0.333333 | 1 | 0.333333333 | 0.666666667 | 3 | 3 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combinatio block #4 | 2,3,6 | 0.5 | 0.0 | 1.0 | 0.5 | 3 | 3 | Combinatio block #5 | 3,4,5 | 0.7 | 0.3 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.7 | 0.3 | 1.2 | 0.5 | 3 | 3 | | 3,4,6 | 0.7 | 0.2 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.5 | 0.2 | 0.8 | 0.2 | 3 | 3 | | 3,5,6 | 0.7 | 0.2 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.5 | 0.2 | 1.0 | 0.3 | 3 | 3 | | 4,5,6 | 0.7 | 0.3 | |
| GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | GHS Rating | 4 | 4 | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|----------|----------|----------|----------------|--------------|-------------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZM* | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZM* | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 4 | 7 | | |
| 1.2 | 0.3 | 3 | 7 | | | | HZM* | 1,2,4 | 4 | 3 | | |
| 4 | 4 | 3 | 7 | | | | | 1,2,5 | 4 | 2 | | |
| 1.2 | 0.3 | 3 | 7 | | | | | 1,2,6 | 4 | 2 | | |
| 4 | 4 | 3 | 7 | | | | | 1,3,4 | 4 | 7 | | |
| 1.1 | 0.3 | 3 | 7 | | | | | 1,3,5 | 4 | 7 | | |
| 4 | 4 | 3 | 7 | | | | | 1,3,6 | 4 | 7 | | |
| 0.6 | 0.0 | 0 | 3 | | | | | 1,4,5 | 4 | 3 | | |
| 4 | 4 | 0 | 3 | | | | | 1,4,6 | 4 | 3 | | |
| | | | | | | | | 1,5,6 | 4 | 2 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZN* | 24 | 1 | 1 | 1 | 2 | 1 | 2 | 20 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZN* | 20 | 0.666667 | 0.666667 | 0.333333 | 1.33333333 | 0.666666667 | 0.666666667 | 3 | 3 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | 4 | 3 | | |
| 1.3 | 0.8 | 3 | 3 | | | | HZN* | 1,2,4 | 4 | 3 | | |
| 4 | 4 | 3 | 3 | | | | | 1,2,5 | 4 | 3 | | |
| 1.2 | 0.7 | 3 | 3 | | | | | 1,2,6 | 4 | 3 | | |
| 4 | 4 | 3 | 3 | | | | | 1,3,4 | 4 | 3 | | |
| 1.3 | 0.8 | 3 | 3 | | | | | 1,3,5 | 4 | 3 | | |
| 4 | 4 | 3 | 3 | | | | | 1,3,6 | 4 | 3 | | |
| 1.2 | 0.5 | 3 | 3 | | | | | 1,4,5 | 4 | 3 | | |
| 4 | 4 | 3 | 3 | | | | | 1,4,6 | 4 | 3 | | |
| | | | | | | | | 1,5,6 | 4 | 3 | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZM* | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | 0 |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZM* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3 | | 2,3,4 | | 4 | 7 | 3 | | | | | | |
| 0 | | 2,3,5 | | 4 | 7 | 3 | | | | | | |
| 0 | | 2,3,6 | | 4 | 7 | 3 | | | | | | |
| 0 | | 2,4,5 | | 4 | 3 | 0 | | | | | | |
| 3 | | 2,4,6 | | 4 | 3 | 0 | | | | | | |
| 3 | | 2,5,6 | | 4 | 2 | 0 | | | | | | |
| 3 | | 3,4,5 | | 4 | 7 | 3 | | | | | | |
| 0 | | 3,4,6 | | 4 | 7 | 3 | | | | | | |
| 0 | | 3,5,6 | | 4 | 7 | 3 | | | | | | |
| 0 | | 4,5,6 | | 4 | 3 | 0 | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZN* | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | | 2 |
| | | | 14 days | | | | | | | | | 0 |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZN* | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| 3 | | 2,3,4 | | 4 | 3 | 3 | | | | | | |
| 3 | | 2,3,5 | | 4 | 3 | 3 | | | | | | |
| 3 | | 2,3,6 | | 4 | 3 | 3 | | | | | | |
| 3 | | 2,4,5 | | 4 | 3 | 3 | | | | | | |
| 3 | | 2,4,6 | | 4 | 3 | 3 | | | | | | |
| 3 | | 2,5,6 | | 4 | 3 | 3 | | | | | | |
| 3 | | 3,4,5 | | 4 | 3 | 3 | | | | | | |
| 3 | | 3,4,6 | | 4 | 3 | 3 | | | | | | |
| 3 | | 3,5,6 | | 4 | 3 | 3 | | | | | | |
| 3 | | 4,5,6 | | 4 | 3 | 3 | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|---------|------|---------|--------------|-----------|-----------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZP | 24 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | EPA |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | | 1 | HZP | 4 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 2 | 3 |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | | |
| | 1 | HZP | 4 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 2 | 3 |
| | 2 | HZP | 4 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 2 | 2 |
| | 3 | HZP | 2 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0 | 3 |
| | 4 | HZP | 2 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0 | 3 |
| | 5 | HZP | 6 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 | 2 | 3 |
| 6 | HZP | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0 | 2 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|---------|------|---------|--------------|-----------|-----------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZQ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | | 1 | HZQ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | | |
| | 1 | HZQ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 2 | HZQ | 34 | 1.0 | 1.7 | 0.7 | 2.0 | 1.3 | 1.0 | 1.0 | 7 | 7 |
| | 3 | HZQ | 8 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.3 | 0.3 | 2 | 3 |
| | 4 | HZQ | 6 | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 0.3 | 0.3 | 3 | 3 |
| | 5 | HZQ | 6 | 0.0 | 0.0 | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 | 2 | 3 |
| 6 | HZQ | 11 | 0.3 | 0.3 | 0.0 | 1.7 | 0.7 | 0.0 | 0.0 | 3 | 7 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZP | 24 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZP | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0 | 0 | 1 | 0 | 2 | 3 | Combina- tion block #2 | 1,3,4 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0 | 0 | 1 | 0 | 2 | 3 | | 1,3,5 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0 | 0 | 1 | 0.166667 | 2 | 3 | | 1,3,6 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0 | 0 | 1 | 0 | 2 | 3 | | 1,4,5 | 0 | 0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | GHS Rating | 4 | 4 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|--|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZQ | 24 | 1 | 3 | 1 | 3 | 2 | 2 | 34 | EPA | |
| | | | 48 | 1 | 1 | 1 | 2 | 1 | 1 | 18 | 7 | |
| | | | 72 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZQ | 34 | 1 | 1.666667 | 0.666667 | 2 | 1.333333333 | 1 | 7 | 7 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0.5 | 0.333333 | 1.5 | 0.833333 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0.5 | 0.333333 | 1.666667 | 0.666667 | 7 | 7 | | 1,3,5 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0.5 | 0.333333 | 1.5 | 0.833333 | 7 | 7 | | 1,3,6 | 0.166667 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0.666667 | 0.333333 | 1.833333 | 1 | 7 | 7 | | 1,4,5 | 0 | 0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|--------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZP | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | 0 | 3 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | | | | | | | | | | | | |
| | 3 | HZP | 2 | 0 | 0 | 0 | 0.666666667 | 0 | 0 | 0 | 3 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 0.833333 | 0 | 2 | 3 | Combina- tion block #3 | 1,4,6 | 0.0 | 0.0 | 0.8 | 0.0 | 2 | 3 | |
| 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | |
| 1 | 0.166667 | 2 | 3 | | 1,5,6 | 0.0 | 0.0 | 1.0 | 0.2 | 2 | 3 | |
| 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | |
| 0.833333 | 0 | 2 | 3 | | 2,3,4 | 0.0 | 0.0 | 0.8 | 0.0 | 2 | 3 | |
| 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | |
| 1 | 0.166667 | 2 | 3 | | 2,3,5 | 0.0 | 0.0 | 1.0 | 0.2 | 2 | 3 | |
| 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|--------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZQ | 24 | 0 | 0 | 0 | 2 | 1 | 1 | 8 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | 0 | 3 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | | | | | | | | | | | | |
| | 3 | HZQ | 8 | 0 | 0 | 0 | 1 | 0.33333333 | 0.33333333 | 2 | 3 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.166667 | 0.166667 | 3 | 3 | Combina- tion block #3 | 1,4,6 | 0.2 | 0.0 | 1.5 | 0.3 | 3 | 7 | |
| 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 1 | 0.333333 | 2 | 3 | | 1,5,6 | 0.2 | 0.0 | 1.3 | 0.5 | 3 | 7 | |
| 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 1.333333 | 0.5 | 3 | 7 | | 2,3,4 | 0.5 | 0.3 | 1.7 | 0.8 | 7 | 7 | |
| 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 1.166667 | 0.166667 | 3 | 3 | | 2,3,5 | 0.5 | 0.3 | 1.5 | 0.8 | 7 | 7 | |
| 4 | 4 | 3 | 3 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|------------|--------------|---------|---------|---------|----------|------------|------------------------------|--------------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZP | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 4 | HZP | MAS | 0 | 0 | 0 | 0.66666667 | 0 | 0 | 0 | 3 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.0 | 0.0 | 0.8 | 0.0 | 2 | 3 | Combina- tion block #5 | 3,4,5 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.0 | 0.0 | 1.0 | 0.2 | 2 | 3 | | 3,4,6 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.0 | 0.0 | 0.8 | 0.0 | 2 | 3 | | 3,5,6 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.0 | 0.0 | 1.0 | 0.2 | 2 | 3 | | 4,5,6 | 0.0 | 0.0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | GHS Rating | 4 | 4 | | | |
| | 4 | HZQ | MAS | 0 | 0 | 0 | 1.33333333 | 0 | 0.33333333 | 3 | 3 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.7 | 0.3 | 1.8 | 1.0 | 7 | 7 | Combina- tion block #5 | 3,4,5 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.5 | 0.3 | 1.7 | 0.8 | 7 | 7 | | 3,4,6 | 0.2 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.7 | 0.3 | 1.8 | 1.0 | 7 | 7 | | 3,5,6 | 0.2 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.7 | 0.3 | 1.8 | 1.0 | 7 | 7 | | 4,5,6 | 0.2 | 0.0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR | | |
|--------|-----------|--------------|----------------|-----------------|----------------|----------------|---------|--------------|-----------|------------|----------------|-------------------|---------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | | |
| 0.1 | 5 | HZP | 24 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | EPA | | | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | | | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | | | |
| | | | 7 days | | | | | | | | 0 | 3 | | |
| | | | 14 days | | | | | | | | 0 | | | |
| | | | 21 days | | | | | | | | 0 | | | |
| | | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | | | 5 | HZP | 6 | 0 | 0 | 0 | 1 | 0.33333333 | 0 | 2 | 3 | |
| | | | Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 4 | 3 |
| | | | 0.8 | 0.2 | 2 | 3 | | | | | HZP | 1,2,4 | 4 | 3 |
| | | | 4 | 4 | 2 | 3 | | | | | | 1,2,5 | 4 | 3 |
| 0.7 | 0.0 | 0 | 3 | | | | | | 1,2,6 | 4 | 3 | | | |
| 4 | 4 | 0 | 3 | | | | | | 1,3,4 | 4 | 3 | | | |
| 0.8 | 0.2 | 2 | 3 | | | | | | 1,3,5 | 4 | 3 | | | |
| 4 | 4 | 2 | 3 | | | | | | 1,3,6 | 4 | 3 | | | |
| 0.8 | 0.2 | 2 | 3 | | | | | | 1,4,5 | 4 | 3 | | | |
| 4 | 4 | 2 | 3 | | | | | | 1,4,6 | 4 | 3 | | | |
| | | | | | | | | | 1,5,6 | 4 | 3 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR | | |
|--------|-----------|--------------|----------------|-----------------|----------------|----------------|---------|--------------|-----------|------------|----------------|-------------------|---------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | | |
| 0.1 | 5 | HZQ | 24 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | EPA | | | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | | | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | | | |
| | | | 7 days | | | | | | | | 0 | 3 | | |
| | | | 14 days | | | | | | | | 0 | | | |
| | | | 21 days | | | | | | | | 0 | | | |
| | | | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | | | 5 | HZQ | 6 | 0 | 0 | 0 | 1 | 0.33333333 | 0 | 2 | 3 | |
| | | | Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 4 | 7 |
| | | | 1.2 | 0.3 | 3 | 3 | | | | | HZQ | 1,2,4 | 4 | 7 |
| | | | 4 | 4 | 3 | 3 | | | | | | 1,2,5 | 4 | 7 |
| 1.5 | 0.5 | 3 | 7 | | | | | | 1,2,6 | 4 | 7 | | | |
| 4 | 4 | 3 | 7 | | | | | | 1,3,4 | 4 | 3 | | | |
| 1.3 | 0.5 | 3 | 7 | | | | | | 1,3,5 | 4 | 3 | | | |
| 4 | 4 | 3 | 7 | | | | | | 1,3,6 | 4 | 7 | | | |
| 1.5 | 0.5 | 3 | 7 | | | | | | 1,4,5 | 4 | 3 | | | |
| 4 | 4 | 3 | 7 | | | | | | 1,4,6 | 4 | 7 | | | |
| | | | | | | | | | 1,5,6 | 4 | 7 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
|--------|-----------|--------------|---------|----------|----------|------|-----------|--------------|-----------|---------|---------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZP | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZP | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| 2 | | 2,3,4 | | 4 | 3 | | | | | | | |
| 2 | | 2,3,5 | | 4 | 3 | | | | | | | |
| 2 | | 2,3,6 | | 4 | 3 | | | | | | | |
| 2 | | 2,4,5 | | 4 | 3 | | | | | | | |
| 2 | | 2,4,6 | | 4 | 3 | | | | | | | |
| 2 | | 2,5,6 | | 4 | 3 | | | | | | | |
| 2 | | 3,4,5 | | 4 | 3 | | | | | | | |
| 2 | | 3,4,6 | | 4 | 3 | | 0 | | | | | |
| 2 | | 3,5,6 | | 4 | 3 | | 2 | | | | | |
| 2 | | 4,5,6 | | 4 | 3 | | 2 | | | | | |
| | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR | |
| Volume | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZQ | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZQ | 11 | 0.333333 | 0.333333 | 0 | 1.6666667 | 0.66666667 | 0 | 3 | 7 | |
| 7 | | 2,3,4 | | 4 | 7 | | | | | | | |
| 7 | | 2,3,5 | | 4 | 7 | | | | | | | |
| 7 | | 2,3,6 | | 4 | 7 | | | | | | | |
| 7 | | 2,4,5 | | 4 | 7 | | | | | | | |
| 3 | | 2,4,6 | | 4 | 7 | | | | | | | |
| 2 | | 2,5,6 | | 4 | 7 | | | | | | | |
| 3 | | 3,4,5 | | 4 | 3 | | | | | | | |
| 3 | | 3,4,6 | | 4 | 7 | | | | | | | |
| 3 | | 3,5,6 | | 4 | 7 | | | | | | | |
| 3 | | 4,5,6 | | 4 | 7 | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZR* | 24 | 1 | 3 | 1 | 3 | 3 | 1 | 34 | EPA | |
| | | | 48 | 1 | 1 | 1 | 3 | 2 | 1 | 22 | 7 | |
| | | | 72 | 0 | 0 | 0 | 2 | 1 | 0 | 6 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | 0 | | | | |
| GHS Tissue | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 1 | HZR* | 34 | 0.7 | 1.3 | 0.7 | 2.7 | 2.0 | 0.7 | 7 | 7 | |
| Summary block used analysis of the twenty combinations | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 1 | HZR* | 34 | 0.7 | 1.3 | 0.7 | 2.7 | 2.0 | 0.7 | 7 | 7 | |
| | 2 | HZR* | 23 | 0.7 | 1.0 | 0.3 | 1.7 | 1.0 | 0.3 | 3 | 7 | |
| | 3 | HZR* | 13 | 0.3 | 0.3 | 0.0 | 1.7 | 0.7 | 1.0 | 3 | 7 | |
| | 4 | HZR* | 31 | 1.0 | 1.7 | 1.0 | 2.0 | 2.3 | 2.0 | 22 | 22 | |
| | 5 | HZR* | 29 | 0.7 | 1.0 | 0.3 | 1.7 | 1.0 | 1.0 | 3 | 7 | |
| | 6 | HZR* | 34 | 1.0 | 1.7 | 0.7 | 2.0 | 1.3 | 1.0 | 7 | 7 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F40824 | HZS | 24 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | EPA | |
| | | | 48 | 1 | 4 | 1 | 2 | 1 | 1 | 33 | 14 | |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 1 | 23 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 14 | |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 21 days | | | | | 0 | | | | |
| GHS Tissue | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F40824 | HZS | 39 | 1.0 | 3.3 | 1.0 | 2.3 | 1.3 | 1.3 | 14 | 14 | |
| Summary block used analysis of the twenty combinations | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F40824 | HZS | 39 | 1.0 | 3.3 | 1.0 | 2.3 | 1.3 | 1.3 | 14 | 14 | |
| | F40863 | HZS | 39 | 1.0 | 3.3 | 1.0 | 2.3 | 1.7 | 1.3 | 22 | 22 | |
| | F40885 | HZS | 37 | 1.0 | 3.3 | 1.0 | 2.0 | 2.0 | 2.0 | 7 | 7 | |
| | F41368 | HZS | 41 | 1.0 | 4.0 | 1.0 | 2.0 | 2.0 | 2.3 | 22 | 22 | |
| | 5 | HZS | 39 | 1.0 | 2.7 | 1.0 | 2.0 | 1.7 | 2.0 | 7 | 7 | |
| | 6 | HZS | 39 | 1.0 | 3.0 | 1.0 | 2.0 | 2.0 | 2.3 | 22 | 22 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 2 | HZR* | 24 | 1 | 2 | 1 | 2 | 1 | 1 | 23 | EPA |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 |
| | | | 72 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | | | | | | | | | | | |
| | 2 | HZR* | 23 | 0.666667 | 1 | 0.333333 | 1.666666667 | 1 | 0.333333333 | 3 | 7 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 0.666667 | 0.5 | 2.166667 | 1.5 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.833333 | 0.833333 |
| | GHS Rating | 4 | 4 | 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,4 | 0.833333 | 0.833333 | 2.333333 | 2.166667 | 22 | 22 | | 1,3,5 | 0.666667 | 0.5 |
| | GHS Rating | 4 | 4 | 2 | 2 | 22 | 22 | | GHS Rating | 4 | 4 |
| | 1,2,5 | 0.666667 | 0.5 | 2.166667 | 1.5 | 7 | 7 | | 1,3,6 | 0.833333 | 0.666667 |
| | GHS Rating | 4 | 4 | 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 |
| | 1,2,6 | 0.833333 | 0.666667 | 2.333333 | 1.666667 | 7 | 7 | | 1,4,5 | 0.833333 | 0.833333 |
| GHS Rating | 4 | 4 | 2 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | F40863 | HZS | 24 | 1 | 4 | 1 | 2 | 2 | 3 | 39 | EPA |
| | | | 48 | 1 | 4 | 1 | 3 | 1 | 1 | 35 | 22 |
| | | | 72 | 1 | 2 | 1 | 2 | 2 | 0 | 23 | GHS |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 22 |
| | | | 14 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | |
| | | | 21 days | 0 | 0 | 0 | 1 | 1 | 1 | 6 | |
| | | | | | | | | | | | |
| | F40863 | HZS | 39 | 1 | 3.333333 | 1 | 2.333333333 | 1.666666667 | 1.333333333 | 22 | 22 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 1 | 1 | 2.333333 | 1.833333 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 1 |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 1,2,4 | 1 | 1 | 2.333333 | 1.833333 | 22 | 22 | | 1,3,5 | 1 | 1 |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 1,2,5 | 1 | 1 | 2.333333 | 1.666667 | 22 | 22 | | 1,3,6 | 1 | 1 |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 |
| | 1,2,6 | 1 | 1 | 2.333333 | 1.833333 | 22 | 22 | | 1,4,5 | 1 | 1 |
| GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|---------------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZR* | 24 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 1 | 2 | 10 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZR* | 13 | 0.333333 | 0.333333 | 0 | 1.666666667 | 0.666666667 | 1 | 3 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2.333333 | 2.166667 | 22 | 22 | Combina- tion block #3 | 1,4,6 GHS Rating | 1.0 | 0.8 | 2.3 | 2.2 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 1,5,6 GHS Rating | 2 | 4 | 2 | 2 | 22 | 22 | |
| 2.166667 | 1.5 | 7 | 7 | | 1,5,6 GHS Rating | 0.8 | 0.7 | 2.3 | 1.7 | 7 | 7 | |
| 2 | 4 | 7 | 7 | | 2,3,4 GHS Rating | 4 | 4 | 2 | 4 | 7 | 7 | |
| 2.333333 | 1.666667 | 7 | 7 | | 2,3,4 GHS Rating | 0.8 | 0.7 | 1.8 | 1.7 | 22 | 22 | |
| 2 | 4 | 7 | 7 | | 2,3,5 GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 | |
| 2.333333 | 2.166667 | 22 | 22 | | 2,3,5 GHS Rating | 0.7 | 0.3 | 1.7 | 1.0 | 3 | 7 | |
| 2 | 2 | 22 | 22 | | | 4 | 4 | 4 | 4 | 3 | 7 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|---------------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F40885 | HZS | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | EPA | |
| | | | 48 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | 7 | |
| | | | 72 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F40885 | HZS | 37 | 1 | 3.333333 | 1 | 2 | 2 | 2 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2.166667 | 2 | 22 | 22 | Combina- tion block #3 | 1,4,6 GHS Rating | 1.0 | 1.0 | 2.2 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 1,5,6 GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| 2.166667 | 1.833333 | 14 | 14 | | 1,5,6 GHS Rating | 1.0 | 1.0 | 2.2 | 1.8 | 22 | 22 | |
| 2 | 4 | 14 | 14 | | 2,3,4 GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |
| 2.166667 | 2 | 22 | 22 | | 2,3,4 GHS Rating | 1.0 | 1.0 | 2.2 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| 2.166667 | 1.833333 | 22 | 22 | | 2,3,5 GHS Rating | 1.0 | 1.0 | 2.2 | 1.8 | 22 | 22 | |
| 2 | 4 | 22 | 22 | | | 2 | 2 | 2 | 4 | 22 | 22 | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|-------------------|--------------|---------|----------------|-------------|----------------|-----------------|---------------------------|----------------|---------------------|-------------------|-------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZR* | 24 | 1 | 2 | 1 | 2 | 3 | 3 | 31 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 | |
| | | | 72 | 1 | 1 | 1 | 2 | 2 | 1 | 20 | GHS | |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 22 | |
| | | | 14 days | 2 | 1 | 0 | 1 | 1 | 0 | 14 | | |
| | | | 21 days | 1 | 1 | 0 | 0 | 0 | 0 | 5 | | |
| | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 4 | HZR* | 31 | 1 | 1.666667 | 1 | 2 | 2.333333333 | 2 | 22 | 22 | |
| | Combinatio | | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 0.8 | 0.5 | 1.8 | 1.2 | 7 | 7 | Combinatio block #5 | 3,4,5 | 0.8 | 0.7 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.8 | 0.7 | 1.8 | 1.7 | 22 | 22 | | 3,4,6 | 1.0 | 0.8 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 22 | 22 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 1.0 | 0.8 | 2.0 | 1.8 | 22 | 22 | | 3,5,6 | 0.8 | 0.5 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.8 | 0.5 | 1.8 | 1.2 | 7 | 7 | | 4,5,6 | 1.0 | 0.8 | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 2 | 4 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|-------------------|--------------|---------|----------------|-------------|----------------|-----------------|---------------------------|----------------|---------------------|-------------------|-------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | F41368 | HZS | 24 | 1 | 4 | 1 | 2 | 3 | 3 | 41 | EPA | |
| | | | 48 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | 22 | |
| | | | 72 | 1 | 4 | 1 | 2 | 1 | 2 | 35 | GHS | |
| | | | 7 days | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 | |
| | | | 14 days | 3 | 1 | 0 | 3 | 2 | 3 | 31 | | |
| | | | 21 days | 2 | 1 | 0 | 2 | 2 | 1 | 20 | | |
| | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | F41368 | HZS | 41 | 1 | 4 | 1 | 2 | 2.333333333 | 22 | 22 | 22 | |
| | Combinatio | | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 1.0 | 2.2 | 2.0 | 22 | 22 | Combinatio block #5 | 3,4,5 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 2,4,5 | 1.0 | 1.0 | 2.2 | 1.8 | 22 | 22 | | 3,4,6 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 2,4,6 | 1.0 | 1.0 | 2.2 | 2.0 | 22 | 22 | | 3,5,6 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | | GHS Rating | 2 | 2 | |
| | 2,5,6 | 1.0 | 1.0 | 2.2 | 1.8 | 22 | 22 | | 4,5,6 | 1.0 | 1.0 | |
| GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|----------|----------|----------|------------|----------------|-----------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZR* | 24 | 1 | 2 | 1 | 2 | 2 | 3 | 29 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZR* | 29 | 0.666667 | 1 | 0.333333 | 1.66666667 | 1 | 1 | 3 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 2 | 7 | |
| 1.8 | 1.7 | 22 | 22 | | | | | HZR* | 1,2,4 | 2 | 22 | |
| 4 | 4 | 22 | 22 | | | | | | 1,2,5 | 2 | 7 | |
| 2.0 | 1.8 | 22 | 22 | | | | | | 1,2,6 | 2 | 7 | |
| 2 | 4 | 22 | 22 | | | | | | 1,3,4 | 2 | 22 | |
| 1.8 | 1.2 | 7 | 7 | | | | | | 1,3,5 | 2 | 7 | |
| 4 | 4 | 7 | 7 | | | | | | 1,3,6 | 2 | 7 | |
| 2.0 | 1.8 | 22 | 22 | | | | | | 1,4,5 | 2 | 22 | |
| 2 | 4 | 22 | 22 | | | | | | 1,4,6 | 2 | 22 | |
| | | | | | | | | | 1,5,6 | 2 | 7 | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZS | 24 | 1 | 4 | 1 | 2 | 2 | 3 | 39 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 7 | |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 1 | 23 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZS | 39 | 1 | 2.666667 | 1 | 2 | 1.666666667 | 2 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 2 | 22 | |
| 2.0 | 2.0 | 22 | 22 | | | | | HZS | 1,2,4 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,2,5 | 2 | 22 | |
| 2.0 | 2.0 | 22 | 22 | | | | | | 1,2,6 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,3,4 | 2 | 22 | |
| 2.0 | 2.0 | 22 | 22 | | | | | | 1,3,5 | 2 | 14 | |
| 2 | 2 | 22 | 22 | | | | | | 1,3,6 | 2 | 22 | |
| 2.0 | 2.0 | 22 | 22 | | | | | | 1,4,5 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,4,6 | 2 | 22 | |
| | | | | | | | | | 1,5,6 | 2 | 22 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
|--------|-----------|--------------|---------|---------|----------|----------|---------|--------------|-------------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZR* | 24 | 1 | 3 | 1 | 2 | 2 | 3 | 34 | EPA |
| | | | 48 | 1 | 1 | 1 | 2 | 1 | 0 | 16 | 7 |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | | 0 |
| | | | 21 days | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZR* | 34 | 1 | 1.666667 | 0.666667 | 2 | 1.333333333 | 1 | 7 | 7 |
| 7 | | 2,3,4 | 4 | 22 | | 22 | | | | | |
| 22 | | 2,3,5 | 4 | 7 | | 3 | | | | | |
| 7 | | 2,3,6 | 4 | 7 | | 7 | | | | | |
| 7 | | 2,4,5 | 4 | 22 | | 22 | | | | | |
| 22 | | 2,4,6 | 2 | 22 | | 22 | | | | | |
| 7 | | 2,5,6 | 4 | 7 | | 7 | | | | | |
| 7 | | 3,4,5 | 4 | 22 | | 22 | | | | | |
| 22 | | 3,4,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,5,6 | 4 | 7 | | 7 | | | | | |
| 7 | | 4,5,6 | 2 | 22 | | 22 | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO-CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZS | 24 | 1 | 4 | 1 | 2 | 2 | 3 | 39 | EPA |
| | | | 48 | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 |
| | | | 72 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | GHS |
| | | | 7 days | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 |
| | | | 14 days | 3 | 1 | 1 | 2 | 2 | 3 | 34 | |
| | | | 21 days | 4 | 1 | 0 | 2 | 2 | 3 | 34 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZS | 39 | 1 | 3 | 1 | 2 | 2 | 2.333333333 | 22 | 22 |
| 22 | | 2,3,4 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,3,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,3,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,4,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,4,6 | 2 | 22 | | 22 | | | | | |
| 14 | | 2,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 4,5,6 | 2 | 22 | | 22 | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|--------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZT | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | 0 |
| GHS Tissue | | 1 HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 2 | HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 3 | HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 4 | HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 5 | HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| | 6 | HZT | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 |
| Dose Vol | | | | | | | | | | | | 0.1 |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|--------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZU* | 24 | 1 | 2 | 1 | 3 | 2 | 2 | 29 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZU* | | 29 | 0.7 | 1.0 | 0.3 | 1.7 | 1.0 | 0.7 | 3 | 3 |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZU* | | 29 | 0.7 | 1.0 | 0.3 | 1.7 | 1.0 | 0.7 | 3 | 3 |
| | 2 | HZU* | | 31 | 1.0 | 2.0 | 0.3 | 1.7 | 1.0 | 0.0 | 7 | 7 |
| | 3 | HZU* | | 22 | 1.0 | 1.3 | 0.0 | 2.0 | 1.3 | 0.7 | 7 | 7 |
| | 4 | HZU* | | 25 | 0.7 | 1.0 | 0.3 | 1.3 | 0.7 | 0.7 | 3 | 3 |
| | 5 | HZU* | | 24 | 0.7 | 0.7 | 0.3 | 1.7 | 1.0 | 1.0 | 3 | 7 |
| | 6 | HZU* | | 13 | 0.3 | 0.3 | 0.0 | 1.3 | 0.3 | 0.3 | 3 | 3 |
| Dose Vol | | | | | | | | | | | | 0.1 |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZT | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | 0 |
| | | | | | | | | | | | | |
| | 2 | HZT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0 | 0 | 0 | 0 | 0 | 0 | Combina- tion block #2 | 1,3,4 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0 | 0 | 0 | 0 | 0 | 0 | | 1,3,5 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0 | 0 | 0 | 0 | 0 | 0 | | 1,3,6 | 0 | 0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0 | 0 | 0 | 0 | 0 | 0 | | 1,4,5 | 0 | 0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | GHS Rating | 4 | 4 | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZU* | 24 | 1 | 4 | 1 | 2 | 1 | 0 | 31 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 7 | |
| | | | 72 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZU* | 31 | 1 | 2 | 0.333333 | 1.666666667 | 1 | 0 | 7 | 7 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 1 | 0.333333 | 1.833333 | 1.166667 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.833333 | 0.333333 | |
| | GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,4 | 0.833333 | 0.333333 | 1.666667 | 1 | 7 | 7 | | 1,3,5 | 0.833333 | 0.333333 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,5 | 0.833333 | 0.333333 | 1.666667 | 1 | 7 | 7 | | 1,3,6 | 0.833333 | 0.166667 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 1,2,6 | 0.833333 | 0.333333 | 1.666667 | 1 | 7 | 7 | | 1,4,5 | 0.666667 | 0.333333 | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR | |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|---------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 3 | HZT | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 72 | | | | | | | | | | 0 |
| | | | 7 days | | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | | 0 |
| | | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | 3 | HZT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | | |
| 0 | 0 | 0 | 0 | Combina- | 1,4,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | | |
| 4 | 4 | 0 | 0 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | #3 | 1,5,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | | 2,3,4 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | | 2,3,5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO-CLEAR |
|----------------|-----------------|----------------|----------------|-------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|---------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZU* | 24 | 1 | 2 | 0 | 2 | 2 | 2 | 22 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | 0 |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZU* | 22 | 1 | 1.333333 | 0 | 2 | 1.33333333 | 0.66666667 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.833333 | 1.166667 | 7 | 7 | Combina- | 1,4,6 | 0.7 | 0.3 | 1.5 | 0.8 | 3 | 3 | |
| 4 | 4 | 7 | 7 | tion block | GHS Rating | 4 | 4 | 4 | 4 | 3 | 3 | |
| 1.833333 | 1.166667 | 7 | 7 | #3 | 1,5,6 | 0.7 | 0.3 | 1.7 | 1.0 | 3 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 1.833333 | 1.166667 | 7 | 7 | | 2,3,4 | 1.0 | 0.3 | 1.8 | 1.2 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | |
| 1.666667 | 1 | 3 | 7 | | 2,3,5 | 1.0 | 0.3 | 1.8 | 1.2 | 7 | 7 | |
| 4 | 4 | 3 | 7 | | GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | | |
|------------------------------|------------|--------------|---------|----------|---------|----------|----------|--------------|--------------|---------|-------------------|------|--|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 4 | HZT | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 72 | | | | | | | | | | |
| | | | 7 days | | | | | | | | | | |
| | | | 14 days | | | | | | | | | | |
| | | | 21 days | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | 4 | HZT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 3,4,5 | 0.0 | 0.0 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 | | |
| | 2,4,5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 3,4,6 | 0.0 | 0.0 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 | | |
| | 2,4,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 3,5,6 | 0.0 | 0.0 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 | | |
| | 2,5,6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | 0 | 4,5,6 | 0.0 | 0.0 | | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | 0 | GHS Rating | 4 | 4 | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 4 | HZU* | 24 | 1 | 2 | 1 | 2 | 1 | 2 | 25 | EPA | | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | | |
| | | | 7 days | | | | | | | | | | |
| | | | 14 days | | | | | | | | | | |
| | | | 21 days | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | 4 | HZU* | 25 | 0.666667 | 1 | 0.333333 | 1.333333 | 0.666666667 | 0.666666667 | 3 | 3 | | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 1.0 | 0.2 | 1.8 | 1.2 | 7 | 7 | 7 | 3,4,5 | 0.8 | 0.3 | | |
| | GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 | | |
| | 2,4,5 | 0.8 | 0.3 | 1.7 | 1.0 | 7 | 7 | 7 | 3,4,6 | 0.8 | 0.2 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 | | |
| | 2,4,6 | 0.8 | 0.3 | 1.5 | 0.8 | 7 | 7 | 7 | 3,5,6 | 0.8 | 0.2 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 | | |
| | 2,5,6 | 0.8 | 0.3 | 1.7 | 1.0 | 7 | 7 | 7 | 4,5,6 | 0.7 | 0.3 | | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | 7 | GHS Rating | 4 | 4 | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|----------|----------|----------|----------------|--------------|-----------|----|--------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 5 | HZT | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 72 | | | | | | | | | | 0 |
| | | | 7 days | | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | | 0 |
| | | | | | | | | | | | | | |
| | 5 | HZT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | HZT | 1,2,4 | | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,2,5 | | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | | 1,2,6 | | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,3,4 | | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | | 1,3,5 | | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,3,6 | | 4 | 0 | | |
| 0.0 | 0.0 | 0 | 0 | | | | | 1,4,5 | | 4 | 0 | | |
| 4 | 4 | 0 | 0 | | | | | 1,4,6 | | 4 | 0 | | |
| | | | | | | | | 1,5,6 | | 4 | 0 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 5 | HZU* | 24 | 1 | 1 | 1 | 2 | 2 | 3 | 24 | EPA | | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | | |
| | | | 14 days | | | | | | | | 0 | | |
| | | | 21 days | | | | | | | | 0 | | |
| | | | | | | | | | | | | 0 | |
| | 5 | HZU* | 24 | 0.666667 | 0.666667 | 0.333333 | 1.66666667 | 1 | 1 | 3 | 7 | | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | | 2 | 7 | | |
| 1.8 | 1.2 | 7 | 7 | | | | HZU* | 1,2,4 | | 4 | 7 | | |
| 4 | 4 | 7 | 7 | | | | | 1,2,5 | | 4 | 7 | | |
| 1.7 | 1.0 | 7 | 7 | | | | | 1,2,6 | | 4 | 7 | | |
| 4 | 4 | 7 | 7 | | | | | 1,3,4 | | 4 | 7 | | |
| 1.8 | 1.2 | 7 | 7 | | | | | 1,3,5 | | 4 | 7 | | |
| 4 | 4 | 7 | 7 | | | | | 1,3,6 | | 4 | 7 | | |
| 1.5 | 0.8 | 3 | 7 | | | | | 1,4,5 | | 4 | 7 | | |
| 4 | 4 | 3 | 7 | | | | | 1,4,6 | | 4 | 3 | | |
| | | | | | | | | 1,5,6 | | 4 | 7 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|----------|----------|------|------------|--------------|-------------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZT | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | 0 |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | | 2,3,4 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,3,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,3,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,4,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,4,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 2,5,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 3,4,5 | 4 | 0 | | 0 | | | | | | |
| 0 | | 3,4,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 3,5,6 | 4 | 0 | | 0 | | | | | | |
| 0 | | 4,5,6 | 4 | 0 | | 0 | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZU* | 24 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | EPA | |
| | | | 48 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 3 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZU* | 13 | 0.333333 | 0.333333 | 0 | 1.33333333 | 0.333333333 | 0.333333333 | 3 | 3 | |
| 7 | | 2,3,4 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,3,5 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,3,6 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,4,5 | 4 | 7 | | 7 | | | | | | |
| 7 | | 2,4,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 2,5,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 3,4,5 | 4 | 7 | | 7 | | | | | | |
| 3 | | 3,4,6 | 4 | 7 | | 7 | | | | | | |
| 3 | | 3,5,6 | 4 | 7 | | 7 | | | | | | |
| 3 | | 4,5,6 | 4 | 7 | | 3 | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZV* | 24 | 1 | 3 | 1 | 3 | 2 | 3 | 36 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| GHS Tissue | | 1 HZV* | 36 | 1.0 | 1.7 | 0.3 | 2.3 | 1.3 | 1.0 | 7 | 7 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZV* | 36 | 1.0 | 1.7 | 0.3 | 2.3 | 1.3 | 1.0 | 7 | 7 | |
| | 2 | HZV* | 11 | 0.3 | 0.3 | 0.0 | 0.7 | 0.3 | 0.0 | 2 | 2 | |
| | 3 | HZV* | 16 | 0.7 | 1.0 | 0.0 | 1.3 | 0.7 | 0.0 | 3 | 7 | |
| | 4 | HZV* | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| | 5 | HZV* | 20 | 0.7 | 0.7 | 0.3 | 1.7 | 1.0 | 0.3 | 3 | 7 | |
| | 6 | HZV* | 7 | 0.3 | 0.3 | 0.0 | 0.7 | 0.0 | 0.0 | 2 | 3 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZW* | 24 | 1 | 4 | 1 | 2 | 1 | 1 | 33 | EPA | |
| | | | 48 | 1 | 2 | 1 | 2 | 1 | 0 | 21 | 7 | |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 1 | 23 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| GHS Tissue | | 1 HZW* | 33 | 1.0 | 2.7 | 1.0 | 2.0 | 1.0 | 0.7 | 7 | 7 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | 1 | HZW* | 33 | 1.0 | 2.7 | 1.0 | 2.0 | 1.0 | 0.7 | 7 | 7 | |
| | 2 | HZW* | 32 | 1.0 | 1.7 | 0.7 | 2.0 | 1.3 | 0.7 | 7 | 7 | |
| | 3 | HZW* | 28 | 1.0 | 2.0 | 0.3 | 2.0 | 1.0 | 0.7 | 7 | 7 | |
| | 4 | HZW* | 11 | 0.7 | 0.7 | 0.0 | 1.7 | 0.3 | 0.0 | 3 | 7 | |
| | 5 | HZW* | 29 | 1.0 | 1.3 | 0.3 | 1.7 | 1.0 | 1.0 | 7 | 7 | |
| | 6 | HZW* | 25 | 0.7 | 1.0 | 0.3 | 1.7 | 1.3 | 0.3 | 3 | 7 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZV* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZV* | 11 | 0.333333 | 0.333333 | 0 | 0.666666667 | 0.333333333 | 0 | 2 | 2 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 0.833333 | 0.166667 | 1.833333 | 1 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 0.833333 | 0.166667 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,4 | 0.666667 | 0.166667 | 1.5 | 0.833333 | 7 | 7 | 1,3,5 | 0.833333 | 0.333333 | 0.333333 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,5 | 0.833333 | 0.333333 | 2 | 1.166667 | 7 | 7 | 1,3,6 | 0.833333 | 0.166667 | 0.166667 | |
| | GHS Rating | 4 | 4 | 2 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | |
| | 1,2,6 | 0.666667 | 0.166667 | 1.5 | 0.833333 | 7 | 7 | 1,4,5 | 0.833333 | 0.333333 | 0.333333 | |
| GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | 4 | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 2 | HZW* | 24 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | EPA | |
| | | | 48 | 1 | 1 | 1 | 2 | 1 | 0 | 16 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 2 | HZW* | 32 | 1 | 1.666667 | 0.666667 | 2 | 1.333333333 | 0.666666667 | 7 | 7 | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | |
| Combina- tion block #1 | 1,2,3 | 1 | 0.833333 | 2 | 1.166667 | 7 | 7 | Combina- tion block #2 | 1,3,4 | 1 | 0.666667 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,4 | 1 | 0.833333 | 2 | 1.166667 | 7 | 7 | 1,3,5 | 1 | 0.666667 | 0.666667 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,5 | 1 | 0.833333 | 2 | 1.166667 | 7 | 7 | 1,3,6 | 1 | 0.666667 | 0.666667 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | GHS Rating | 2 | 4 | 4 | |
| | 1,2,6 | 1 | 0.833333 | 2 | 1.333333 | 7 | 7 | 1,4,5 | 1 | 0.666667 | 0.666667 | |
| GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | GHS Rating | 2 | 4 | 4 | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZV* | 24 | 1 | 2 | 0 | 2 | 1 | 0 | 16 | EPA | |
| | | | 48 | 1 | 1 | 0 | 1 | 1 | 0 | 9 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZV* | 16 | 0.666667 | 1 | 0 | 1.333333333 | 0.66666667 | 0 | 3 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 1.833333 | 1 | 7 | 7 | Combina- tion block #3 | 1,4,6 | 0.7 | 0.2 | 1.5 | 0.7 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 2 | 1.166667 | 7 | 7 | | 1,5,6 | 0.8 | 0.3 | 2.0 | 1.2 | 7 | 7 | |
| 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 2 | 4 | 7 | 7 | |
| 1.833333 | 1 | 7 | 7 | | 2,3,4 | 0.5 | 0.0 | 1.0 | 0.5 | 3 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |
| 2 | 1.166667 | 7 | 7 | | 2,3,5 | 0.7 | 0.2 | 1.5 | 0.8 | 3 | 7 | |
| 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZW* | 24 | 1 | 3 | 1 | 2 | 1 | 1 | 28 | EPA | |
| | | | 48 | 1 | 2 | 0 | 2 | 1 | 1 | 18 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZW* | 28 | 1 | 2 | 0.333333 | 2 | 1 | 0.666666667 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2 | 1 | 7 | 7 | Combina- tion block #3 | 1,4,6 | 0.8 | 0.7 | 1.8 | 1.2 | 7 | 7 | |
| 2 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | |
| 2 | 1 | 7 | 7 | | 1,5,6 | 1.0 | 0.7 | 1.8 | 1.2 | 7 | 7 | |
| 2 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | |
| 2 | 1.166667 | 7 | 7 | | 2,3,4 | 1.0 | 0.5 | 2.0 | 1.2 | 7 | 7 | |
| 2 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | |
| 1.833333 | 1 | 7 | 7 | | 2,3,5 | 1.0 | 0.5 | 2.0 | 1.2 | 7 | 7 | |
| 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | |

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|------------------------------|-------------------|--------------|----------------|-------------|----------------|-----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZV* | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 4 | HZV* | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 4 | HZV* | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 0.5 | 0.0 | 1.0 | 0.5 | 3 | 7 | Combina- tion block #5 | 3,4,5 | 0.7 | 0.2 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.5 | 0.2 | 1.2 | 0.7 | 3 | 7 | | 3,4,6 | 0.5 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.3 | 0.0 | 0.7 | 0.2 | 2 | 3 | | 3,5,6 | 0.7 | 0.2 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 2 | 3 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.5 | 0.2 | 1.2 | 0.7 | 3 | 7 | | 4,5,6 | 0.5 | 0.2 | |
| GHS Rating | 4 | 4 | 4 | 4 | 3 | 7 | GHS Rating | 4 | 4 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|-------------------|--------------|----------------|-------------|----------------|-----------------|----------------|------------------------------|---------------------|----------------|-------------------|--|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZW* | 24 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 0 | 0 | 9 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| | | | | | | | | | | | | |
| | 4 | HZW* | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 4 | HZW* | 11 | 0.666667 | 0.666667 | 0 | 1.66666667 | 0.333333333 | 0 | 3 | 7 | |
| | Combinatio | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | |
| Combina- tion block #4 | 2,3,6 | 1.0 | 0.5 | 2.0 | 1.3 | 7 | 7 | Combina- tion block #5 | 3,4,5 | 1.0 | 0.3 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | |
| | 2,4,5 | 1.0 | 0.5 | 1.8 | 1.2 | 7 | 7 | | 3,4,6 | 0.8 | 0.3 | |
| | GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.8 | 0.5 | 1.8 | 1.3 | 7 | 7 | | 3,5,6 | 1.0 | 0.3 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 7 | 7 | | GHS Rating | 2 | 4 | |
| | 2,5,6 | 1.0 | 0.5 | 1.8 | 1.3 | 7 | 7 | | 4,5,6 | 0.8 | 0.3 | |
| GHS Rating | 2 | 4 | 4 | 4 | 7 | 7 | GHS Rating | 4 | 4 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|----------|----------|----------|------------|--------------|-------------|---------|-------------------|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZV* | 24 | 1 | 1 | 0 | 1 | 0 | 0 | 7 | EPA | |
| | | | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | |
| | | | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 7 days | | | | | | | | 0 | 3 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZV* | 7 | 0.333333 | 0.333333 | 0 | 0.66666667 | 0 | 0 | 2 | 3 | |
| 7 | | 2,3,4 | 4 | 7 | | 3 | | | | | | |
| 7 | | 2,3,5 | 4 | 7 | | 3 | | | | | | |
| 7 | | 2,3,6 | 4 | 7 | | 3 | | | | | | |
| 7 | | 2,4,5 | 4 | 7 | | 3 | | | | | | |
| 7 | | 2,4,6 | 4 | 3 | | 2 | | | | | | |
| 7 | | 2,5,6 | 4 | 7 | | 3 | | | | | | |
| 7 | | 3,4,5 | 4 | 7 | | 3 | | | | | | |
| 7 | | 3,4,6 | 4 | 7 | | 3 | | | | | | |
| 7 | | 3,5,6 | 4 | 7 | | 3 | | | | | | |
| 7 | | 4,5,6 | 4 | 7 | | 3 | | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZW* | 24 | 1 | 2 | 1 | 2 | 2 | 1 | 25 | EPA | |
| | | | 48 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 3 | |
| | | | 72 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZW* | 25 | 0.666667 | 1 | 0.333333 | 1.66666667 | 1.333333333 | 0.333333333 | 3 | 7 | |
| 7 | | 2,3,4 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,3,5 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,3,6 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,4,5 | 2 | 7 | | 7 | | | | | | |
| 7 | | 2,4,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 2,5,6 | 2 | 7 | | 7 | | | | | | |
| 7 | | 3,4,5 | 2 | 7 | | 7 | | | | | | |
| 7 | | 3,4,6 | 4 | 7 | | 7 | | | | | | |
| 7 | | 3,5,6 | 2 | 7 | | 7 | | | | | | |
| 7 | | 4,5,6 | 4 | 7 | | 7 | | | | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZX | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | EPA |
| | | | 48 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | 22 |
| | | | 72 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | GHS |
| | | | 7 days | 1 | 2 | 0 | 2 | 2 | 2 | 2 | 22 | 22 |
| | | | 14 days | 1 | 1 | 0 | 2 | 2 | 2 | 2 | 17 | |
| | | | 21 days | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 11 | |
| GHS Tissue | | 1 HZX | 37 | 1.0 | 4.0 | 1.0 | 2.0 | 2.0 | 2.0 | 22 | 22 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | | 1 | HZX | 37 | 1.0 | 4.0 | 1.0 | 2.0 | 2.0 | 22 | 22 | |
| | | 2 | HZX | 41 | 1.0 | 2.3 | 0.7 | 2.3 | 1.3 | 7 | 7 | |
| | | 3 | HZX | 39 | 1.0 | 2.7 | 0.7 | 2.7 | 1.3 | 7 | 7 | |
| | | 4 | HZX | 41 | 1.0 | 3.3 | 1.0 | 2.3 | 2.0 | 21 | 22 | |
| | | 5 | HZX | 39 | 1.0 | 4.0 | 1.0 | 2.3 | 2.0 | 22 | 22 | |
| | | 6 | HZX | 41 | 1.0 | 2.7 | 1.0 | 2.3 | 1.3 | 14 | 14 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|----|--------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZY | 24 | 1 | 4 | 1 | 2 | 3 | 3 | 41 | EPA | |
| | | | 48 | 1 | 4 | 1 | 3 | 1 | 1 | 35 | 7 | |
| | | | 72 | 1 | 3 | 1 | 2 | 1 | 1 | 28 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | 0 | |
| GHS Tissue | | 1 HZY | 41 | 1.0 | 3.7 | 1.0 | 2.3 | 1.7 | 1.7 | 7 | 7 | |
| Summary block used analysis of the twenty combinations | | ANIMAL ID | | | | | | | | | | |
| | | 1 | HZY | 41 | 1.0 | 3.7 | 1.0 | 2.3 | 1.7 | 7 | 7 | |
| | | 2 | HZY | 37 | 1.0 | 4.0 | 1.0 | 2.7 | 1.7 | 14 | 14 | |
| | | 3 | HZY | 41 | 1.0 | 3.3 | 1.0 | 2.7 | 2.0 | 7 | 7 | |
| | | 4 | HZY | 37 | 1.0 | 3.7 | 1.0 | 2.3 | 2.0 | 21 | 21 | |
| | | 5 | HZY | 39 | 1.0 | 3.7 | 1.0 | 2.7 | 2.0 | 22 | 22 | |
| | | 6 | HZY | 31 | 1.0 | 4.0 | 0.3 | 2.0 | 1.0 | 22 | 22 | |
| Dose Vol | | 0.1 | | | | | | | | | | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 2 | HZX | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA |
| | | | 48 | 1 | 2 | 1 | 2 | 1 | 1 | 23 | 7 |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | | | 14 days | | | | | | | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | 2 | HZX | 41 | 1 | 2.333333 | 0.666667 | 2.333333333 | 1.333333333 | 1.333333333 | 7 | 7 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 1 | 0.833333 | 2.5 | 1.666667 | 22 | 22 | Combina- tion block #2 | 1,3,4 | 1 | 1 |
| | GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | |
| | 1,2,4 | 1 | 1 | 2.333333 | 2 | 22 | 22 | 1,3,5 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | |
| | 1,2,5 | 1 | 1 | 2.333333 | 2 | 22 | 22 | 1,3,6 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | |
| | 1,2,6 | 1 | 1 | 2.333333 | 1.666667 | 22 | 22 | 1,4,5 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 2 | HZY | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | EPA |
| | | | 48 | 1 | 4 | 1 | 3 | 1 | 2 | 37 | 14 |
| | | | 72 | 1 | 4 | 1 | 3 | 2 | 1 | 37 | GHS |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 0 | 11 | 14 |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | 2 | HZY | 37 | 1 | 4 | 1 | 2.666666667 | 1.666666667 | 1.666666667 | 14 | 14 |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris |
| Combina- tion block #1 | 1,2,3 | 1 | 1 | 2.666667 | 1.833333 | 14 | 14 | Combina- tion block #2 | 1,3,4 | 1 | 1 |
| | GHS Rating | 2 | 2 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 2 | |
| | 1,2,4 | 1 | 1 | 2.5 | 1.833333 | 21 | 21 | 1,3,5 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 21 | 21 | GHS Rating | 2 | 2 | |
| | 1,2,5 | 1 | 1 | 2.666667 | 1.833333 | 22 | 22 | 1,3,6 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | |
| | 1,2,6 | 1 | 1 | 2.5 | 1.666667 | 22 | 22 | 1,4,5 | 1 | 1 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | |

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Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|---------------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZX | 24 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | EPA | |
| | | | 48 | 1 | 3 | 1 | 3 | 1 | 2 | 32 | 7 | |
| | | | 72 | 1 | 1 | 0 | 2 | 1 | 0 | 11 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZX | 39 | 1 | 2.666667 | 0.666667 | 2.666666667 | 1.33333333 | 1.333333333 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2.5 | 2 | 22 | 22 | Combina- tion block #3 | 1,4,6 GHS Rating | 1.0 | 1.0 | 2.3 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 1,5,6 GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| 2.5 | 2 | 22 | 22 | | 1,5,6 GHS Rating | 1.0 | 1.0 | 2.3 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 2,3,4 GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |
| 2.5 | 1.666667 | 22 | 22 | | 2,3,4 GHS Rating | 1.0 | 0.8 | 2.5 | 1.7 | 21 | 22 | |
| 2 | 4 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 4 | 2 | 4 | 21 | 22 | |
| 2.333333 | 2 | 22 | 22 | | 2,3,5 GHS Rating | 1.0 | 0.8 | 2.5 | 1.7 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 4 | 2 | 4 | 22 | 22 | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|------------------------------|---------------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 3 | HZY | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA | |
| | | | 48 | 1 | 4 | 1 | 3 | 2 | 2 | 39 | 7 | |
| | | | 72 | 1 | 2 | 1 | 2 | 2 | 0 | 23 | GHS | |
| | | | 7 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| | | | 14 days | | | | | | | 0 | | |
| | | | 21 days | | | | | | | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 3 | HZY | 41 | 1 | 3.333333 | 1 | 2.666666667 | 2 | 1.666666667 | 7 | 7 | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | |
| 2.5 | 2 | 21 | 21 | Combina- tion block #3 | 1,4,6 GHS Rating | 1.0 | 1.0 | 2.3 | 1.8 | 22 | 22 | |
| 2 | 2 | 21 | 21 | | 1,5,6 GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |
| 2.666667 | 2 | 22 | 22 | | 1,5,6 GHS Rating | 1.0 | 1.0 | 2.5 | 1.8 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 2,3,4 GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | |
| 2.5 | 1.833333 | 22 | 22 | | 2,3,4 GHS Rating | 1.0 | 1.0 | 2.7 | 2.0 | 21 | 21 | |
| 2 | 4 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 2 | 2 | 2 | 21 | 21 | |
| 2.5 | 2 | 22 | 22 | | 2,3,5 GHS Rating | 1.0 | 1.0 | 2.7 | 2.0 | 22 | 22 | |
| 2 | 2 | 22 | 22 | | 2,3,5 GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|------------|--------------|---------|---------|----------|---------|------------|---------------------------|-----------|--------------|-------------------|------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZX | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA | |
| | | | 48 | 1 | 3 | 1 | 2 | 2 | 1 | 30 | 21 | |
| | | | 72 | 1 | 3 | 1 | 2 | 2 | 2 | 32 | GHS | |
| | | | 7 days | 1 | 2 | 1 | 2 | 2 | 2 | 27 | 22 | |
| | | | 14 days | 1 | 1 | 0 | 2 | 2 | 2 | 17 | | |
| | | | 21 days | 0 | 0 | 0 | 1 | 1 | 0 | 4 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 4 | HZX | 41 | 1 | 3.333333 | 1 | 2.33333333 | 2 | 2 | 21 | 22 | |
| | Combinatio | | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 0.8 | 2.5 | 1.3 | 14 | 14 | Combinatio block #5 | 3,4,5 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 4 | 2 | 4 | 14 | 14 | GHS Rating | 2 | 2 | | |
| | 2,4,5 | 1.0 | 1.0 | 2.3 | 2.0 | 22 | 22 | 3,4,6 | 1.0 | 1.0 | | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 2,4,6 | 1.0 | 1.0 | 2.3 | 1.7 | 21 | 22 | 3,5,6 | 1.0 | 1.0 | | |
| | GHS Rating | 2 | 2 | 2 | 4 | 21 | 22 | GHS Rating | 2 | 2 | | |
| | 2,5,6 | 1.0 | 1.0 | 2.3 | 1.7 | 22 | 22 | 4,5,6 | 1.0 | 1.0 | | |
| GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | | |

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|---------------------------|------------|--------------|---------|---------|----------|---------|------------|---------------------------|-------------|--------------|-------------------|------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZY | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | EPA | |
| | | | 48 | 1 | 4 | 1 | 2 | 2 | 2 | 37 | 21 | |
| | | | 72 | 1 | 3 | 1 | 3 | 2 | 1 | 32 | GHS | |
| | | | 7 days | 1 | 1 | 1 | 2 | 1 | 0 | 16 | 21 | |
| | | | 14 days | 1 | 1 | 0 | 1 | 1 | 1 | 11 | | |
| | | | 21 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 4 | HZY | 37 | 1 | 3.666667 | 1 | 2.33333333 | 2 | 1.666666667 | 21 | 21 | |
| | Combinatio | | | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris |
| Combinatio block #4 | 2,3,6 | 1.0 | 1.0 | 2.7 | 1.8 | 22 | 22 | Combinatio block #5 | 3,4,5 | 1.0 | 1.0 | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 2,4,5 | 1.0 | 1.0 | 2.7 | 2.0 | 22 | 22 | 3,4,6 | 1.0 | 1.0 | | |
| | GHS Rating | 2 | 2 | 2 | 2 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 2,4,6 | 1.0 | 1.0 | 2.5 | 1.8 | 22 | 22 | 3,5,6 | 1.0 | 1.0 | | |
| | GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | |
| | 2,5,6 | 1.0 | 1.0 | 2.7 | 1.8 | 22 | 22 | 4,5,6 | 1.0 | 1.0 | | |
| GHS Rating | 2 | 2 | 2 | 4 | 22 | 22 | GHS Rating | 2 | 2 | | | |

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| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
|----------------|-----------------|----------------|----------------|---------|----------|------|------------|----------------|-----------|---------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZX | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | EPA |
| | | | 48 | 1 | 4 | 1 | 3 | 2 | 2 | 2 | 39 | 22 |
| | | | 72 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | GHS |
| | | | 7 days | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 13 | 22 |
| | | | 14 days | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 9 | |
| | | | 21 days | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZX | 39 | 1 | 4 | 1 | 2.33333333 | 2 | 2 | 22 | 22 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 2 | 22 | |
| 2.5 | 2.0 | 22 | 22 | | | | | HZX | 1,2,4 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,2,5 | 2 | 22 | |
| 2.5 | 1.7 | 21 | 22 | | | | | | 1,2,6 | 2 | 22 | |
| 2 | 4 | 21 | 22 | | | | | | 1,3,4 | 2 | 22 | |
| 2.5 | 1.7 | 22 | 22 | | | | | | 1,3,5 | 2 | 22 | |
| 2 | 4 | 22 | 22 | | | | | | 1,3,6 | 2 | 22 | |
| 2.3 | 2.0 | 22 | 22 | | | | | | 1,4,5 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,4,6 | 2 | 22 | |
| | | | | | | | | | 1,5,6 | 2 | 22 | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 5 | HZY | 24 | 1 | 4 | 1 | 2 | 2 | 2 | 2 | 37 | EPA |
| | | | 48 | 1 | 4 | 1 | 3 | 2 | 2 | 2 | 39 | 22 |
| | | | 72 | 1 | 3 | 1 | 3 | 2 | 2 | 2 | 34 | GHS |
| | | | 7 days | 1 | 2 | 0 | 2 | 2 | 1 | 1 | 20 | 22 |
| | | | 14 days | 2 | 1 | 0 | 2 | 2 | 1 | 1 | 20 | |
| | | | 21 days | 2 | 1 | 0 | 2 | 2 | 1 | 1 | 20 | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 5 | HZY | 39 | 1 | 3.666667 | 1 | 2.66666667 | 2 | 2 | 22 | 22 | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | | Summary | 1,2,3 | 2 | 14 | |
| 2.7 | 2.0 | 22 | 22 | | | | | HZY | 1,2,4 | 2 | 21 | |
| 2 | 2 | 22 | 22 | | | | | | 1,2,5 | 2 | 22 | |
| 2.5 | 2.0 | 22 | 22 | | | | | | 1,2,6 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,3,4 | 2 | 21 | |
| 2.7 | 2.0 | 22 | 22 | | | | | | 1,3,5 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,3,6 | 2 | 22 | |
| 2.5 | 2.0 | 22 | 22 | | | | | | 1,4,5 | 2 | 22 | |
| 2 | 2 | 22 | 22 | | | | | | 1,4,6 | 2 | 22 | |
| | | | | | | | | | 1,5,6 | 2 | 22 | |

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Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
|--------|-----------|--------------|---------|---------|----------|----------|------------|--------------|-------------|---------|-------------------|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZX | 24 | 1 | 4 | 1 | 3 | 2 | 3 | 41 | EPA |
| | | | 48 | 1 | 2 | 1 | 2 | 1 | 2 | 25 | 14 |
| | | | 72 | 1 | 2 | 1 | 2 | 1 | 0 | 21 | GHS |
| | | | 7 days | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 14 |
| | | | 14 days | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 21 days | | | | | | | 0 | |
| | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZX | 41 | 1 | 2.666667 | 1 | 2.33333333 | 1.333333333 | 1.666666667 | 14 | 14 |
| 22 | | 2,3,4 | 2 | 22 | | 21 | | | | | |
| 22 | | 2,3,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,3,6 | 2 | 14 | | 14 | | | | | |
| 22 | | 2,4,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,4,6 | 2 | 22 | | 21 | | | | | |
| 22 | | 2,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,6 | 2 | 22 | | 21 | | | | | |
| 22 | | 3,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 4,5,6 | 2 | 22 | | 22 | | | | | |
| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR |
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | |
| 0.1 | 6 | HZY | 24 | 1 | 4 | 0 | 2 | 1 | 2 | 30 | EPA |
| | | | 48 | 1 | 4 | 0 | 2 | 1 | 1 | 28 | 22 |
| | | | 72 | 1 | 4 | 1 | 2 | 1 | 0 | 31 | GHS |
| | | | 7 days | 1 | 4 | 1 | 2 | 1 | 0 | 31 | 22 |
| | | | 14 days | 1 | 4 | 0 | 1 | 1 | 0 | 24 | |
| | | | 21 days | 1 | 1 | 0 | 1 | 0 | 0 | 7 | |
| | | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS |
| | 6 | HZY | 31 | 1 | 4 | 0.333333 | 2 | 1 | 1 | 22 | 22 |
| 14 | | 2,3,4 | 2 | 21 | | 21 | | | | | |
| 21 | | 2,3,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,3,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,4,5 | 2 | 22 | | 22 | | | | | |
| 21 | | 2,4,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 2,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,5 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,4,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 3,5,6 | 2 | 22 | | 22 | | | | | |
| 22 | | 4,5,6 | 2 | 22 | | 22 | | | | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 1 | HZZ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 72 | | | | | | | | | 0 |
| | | | 7 days | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | 0 |
| GHS Tissue | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 1 | HZZ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| Summary block used analysis of the twenty combinations | ANIMAL ID | | | | | | | | | | | |
| | 1 | HZZ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 2 | HZZ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 3 | HZZ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| | 4 | HZZ | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | |
| | 5 | HZZ | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | |
| 6 | HZZ | 2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0 | 2 | | |
| | Dose Vol | | 0.1 | | | | | | | | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | | |
|------------------------------|---------------------|----------------|-------------|----------------|-----------------|----------------|----------------|------------------------------|---------------------|----------------|-------------------|-----|---|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 2 | HZZ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS | |
| | | | 72 | | | | | | | | | 0 | |
| | | | 7 days | | | | | | | | | 0 | 0 |
| | | | 14 days | | | | | | | | | 0 | |
| | | | 21 days | | | | | | | | | 0 | |
| | | | | | | | | | | | | | |
| | 2 | HZZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | Combinations | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | Combinations | Opacity | Iris | | |
| Combina- tion block #1 | 1,2,3 | 0 | 0 | 0 | 0 | 0 | 0 | Combina- tion block #2 | 1,3,4 | 0 | 0 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | | |
| | 1,2,4 | 0 | 0 | 0.25 | 0 | 0 | 2 | | 1,3,5 | 0 | 0 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | | |
| | 1,2,5 | 0 | 0 | 0 | 0 | 0 | 0 | | 1,3,6 | 0 | 0 | | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | | |
| | 1,2,6 | 0 | 0 | 0.25 | 0 | 0 | 2 | | 1,4,5 | 0 | 0 | | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | GHS Rating | 4 | 4 | | | | |

IIVS Submission - In Vivo Data and Analysis for the Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|------------------------------|----------------|-------------|----------------|-----------------|----------------|----------------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 3 | HZZ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 72 | | | | | | | | | | 0 |
| | | | 7 days | | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | | 0 |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | 3 | HZZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Redness | Chemosis | DtC EPA | DtC GHS | Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | | | |
| 0.25 | 0 | 0 | 2 | Combina- tion block #3 | 1,4,6 | 0.0 | 0.0 | 0.5 | 0.0 | 0 | 2 | | |
| 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | |
| 0 | 0 | 0 | 0 | | 1,5,6 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | | |
| 4 | 4 | 0 | 0 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | |
| 0.25 | 0 | 0 | 2 | | 2,3,4 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | | |
| 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | |
| 0.25 | 0 | 0 | 2 | | 2,3,5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 0 | | |
| 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | 4 | 4 | 0 | 0 | | |

IIVS Submission - In Vivo Data and Analysis for the Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|------------------------------|------------|--------------|---------|----------|---------|---------|--------------|------------------------------|------------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 4 | HZZ | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | GHS |
| | | | 72 | | | | | | | | 0 | 2 |
| | | | 7 days | | | | | | | | 0 | |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 4 | HZZ | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| Combinatio | Opacity | Iris | Redness | Chemosis | DtC EPA | DtC GHS | Combinations | Opacity | Iris | | | |
| Combina- tion block #4 | 2,3,6 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | Combina- tion block #5 | 3,4,5 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | |
| | 2,4,5 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | | 3,4,6 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | |
| | 2,4,6 | 0.0 | 0.0 | 0.5 | 0.0 | 0 | 2 | | 3,5,6 | 0.0 | 0.0 | |
| | GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | | GHS Rating | 4 | 4 | |
| | 2,5,6 | 0.0 | 0.0 | 0.3 | 0.0 | 0 | 2 | | 4,5,6 | 0.0 | 0.0 | |
| GHS Rating | 4 | 4 | 4 | 4 | 0 | 2 | GHS Rating | 4 | 4 | | | |

IIVS Submission - In Vivo Data and Analysis for the Gettings et al. (1996) Study

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | | DRAIZE | DAYS-TO- CLEAR | |
|----------------|-----------------|----------------|----------------|---------|------|------|----------------|--------------|-----------|---------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | | |
| 0.1 | 5 | HZZ | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | | | GHS |
| | | | 7 days | | | | | | | | | | 0 |
| | | | 14 days | | | | | | | | | | 0 |
| | | | 21 days | | | | | | | | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | | |
| | 5 | HZZ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Redness | Chemosis | DtC EPA | DtC GHS | | | | Summary | 1,2,3 | | 4 | 0 | | |
| 0.3 | 0.0 | 0 | 2 | | | | HZZ | 1,2,4 | | 4 | 2 | | |
| 4 | 4 | 0 | 2 | | | | | 1,2,5 | | 4 | 0 | | |
| 0.5 | 0.0 | 0 | 2 | | | | | 1,2,6 | | 4 | 2 | | |
| 4 | 4 | 0 | 2 | | | | | 1,3,4 | | 4 | 2 | | |
| 0.3 | 0.0 | 0 | 2 | | | | | 1,3,5 | | 4 | 0 | | |
| 4 | 4 | 0 | 2 | | | | | 1,3,6 | | 4 | 2 | | |
| 0.5 | 0.0 | 0 | 2 | | | | | 1,4,5 | | 4 | 2 | | |
| 4 | 4 | 0 | 2 | | | | | 1,4,6 | | 4 | 2 | | |
| | | | | | | | | 1,5,6 | | 4 | 2 | | |

**IIVS Submission - In Vivo Data and Analysis for the
Gettings et al. (1996) Study**

| Volume | ANIMAL ID | TEST MATL | TIME | CORNEAL | | IRIS | REDNESS | CONJUNCTIVAL | | DRAIZE | DAYS-TO- CLEAR | |
|--------|-----------|--------------|---------|---------|------|------|---------|--------------|-----------|---------|-------------------|-----|
| | | | | OPACITY | AREA | | | CHEMOSIS | DISCHARGE | | | |
| 0.1 | 6 | HZZ | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | EPA | |
| | | | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 72 | | | | | | | | 0 | GHS |
| | | | 7 days | | | | | | | | 0 | 2 |
| | | | 14 days | | | | | | | | 0 | |
| | | | 21 days | | | | | | 0 | | | |
| | ANIMAL ID | MATL | MAS | OPACITY | AREA | IRIS | REDNESS | CHEMOSIS | DISCHARGE | DtC EPA | DtC GHS | |
| | 6 | HZZ | 2 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 2 | |
| 0 | | 2,3,4 | | 4 | 2 | 0 | | | | | | |
| 0 | | 2,3,5 | | 4 | 0 | 0 | | | | | | |
| 0 | | 2,3,6 | | 4 | 2 | 0 | | | | | | |
| 0 | | 2,4,5 | | 4 | 2 | 0 | | | | | | |
| 0 | | 2,4,6 | | 4 | 2 | 0 | | | | | | |
| 0 | | 2,5,6 | | 4 | 2 | 0 | | | | | | |
| 0 | | 3,4,5 | | 4 | 2 | 0 | | | | | | |
| 0 | | 3,4,6 | | 4 | 2 | 0 | | | | | | |
| 0 | | 3,5,6 | | 4 | 2 | 0 | | | | | | |
| 0 | | 4,5,6 | | 4 | 2 | 0 | | | | | | |

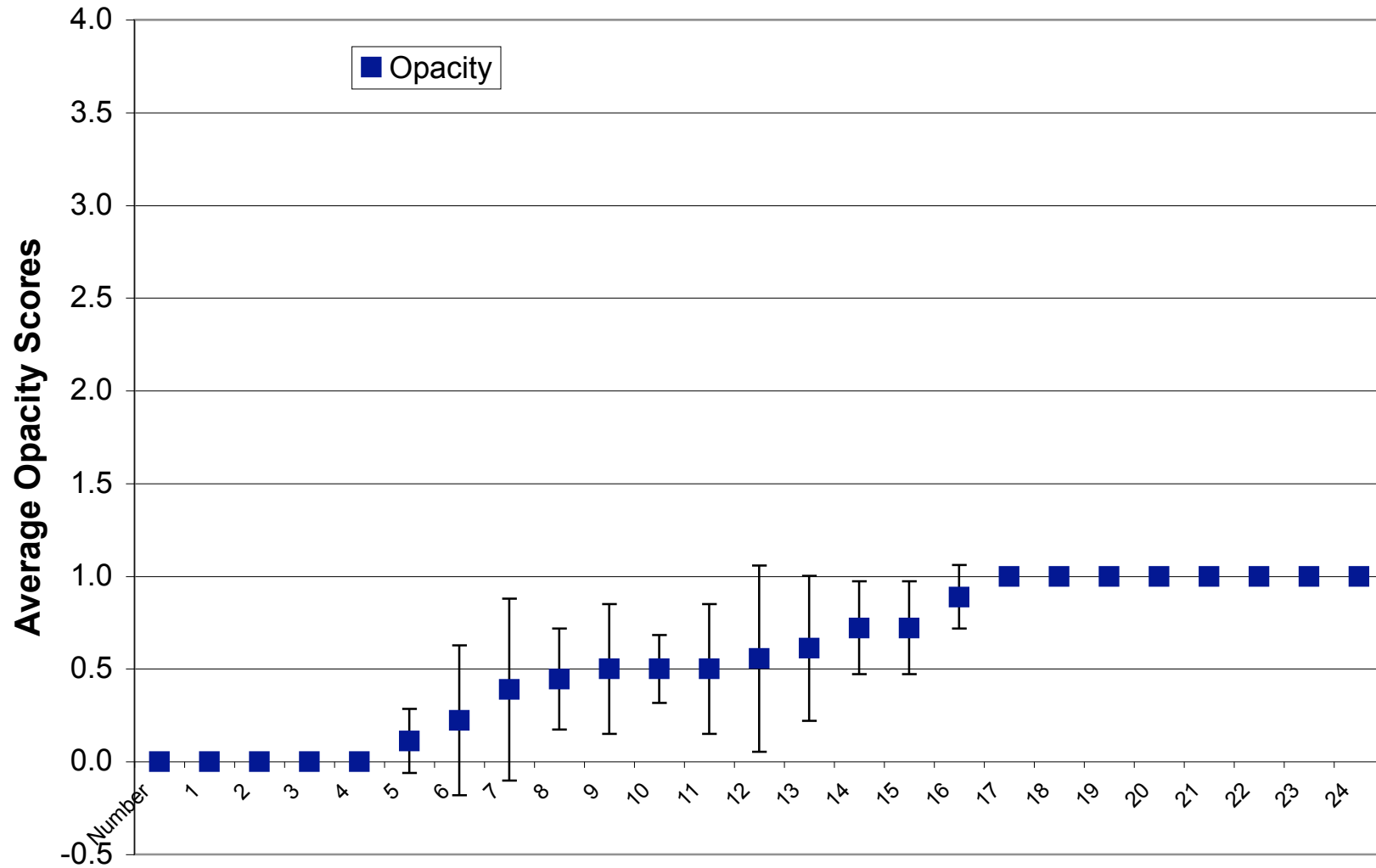
**Summary of Boot Strap Analysis for the
Gettings et al. (1996) Study**

Summary of the Animal Data

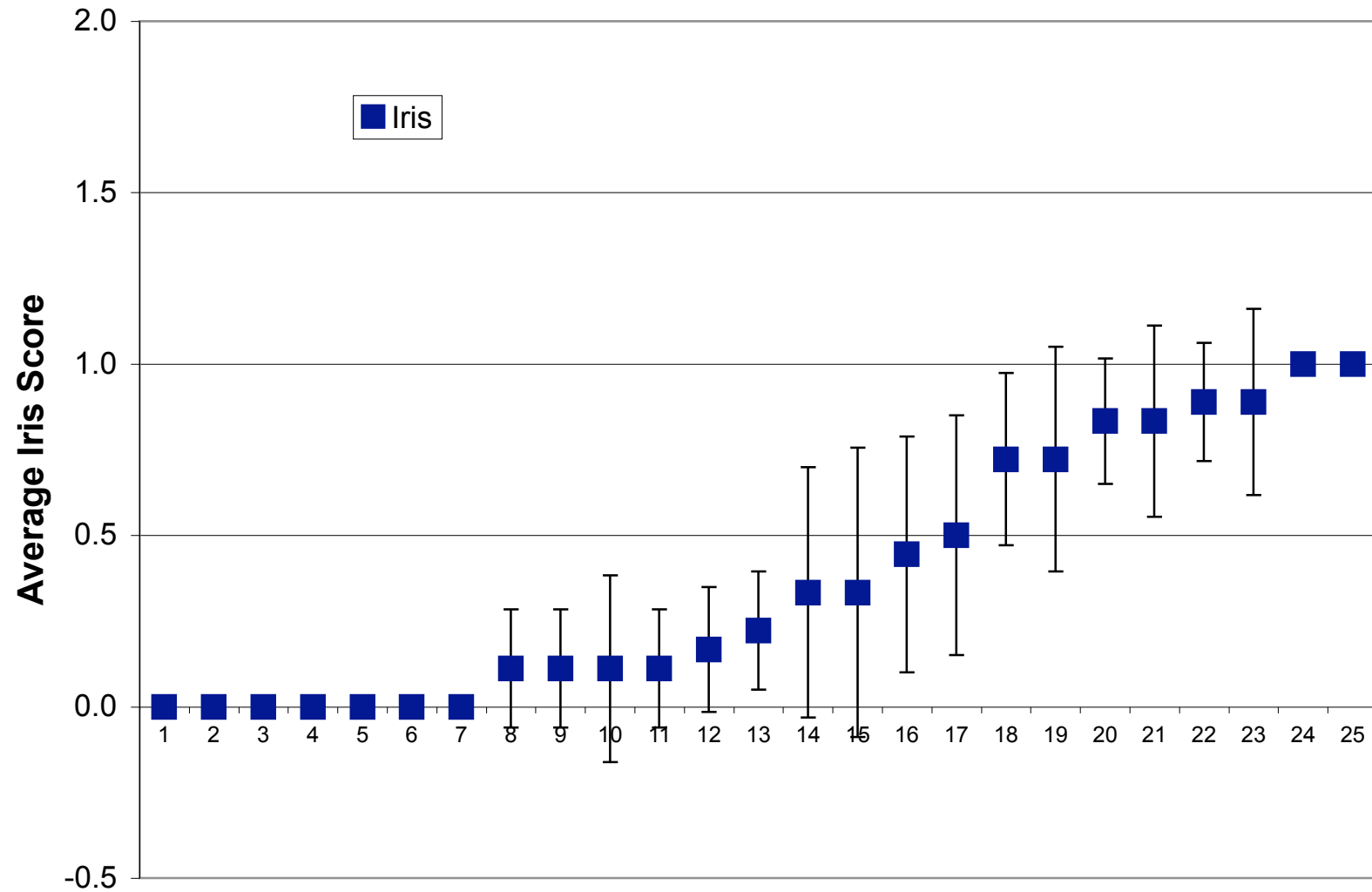
| Name | Material | GHS 1 | GHS 2a | GHS 2b | GHS NI | EPA 1 | EPA 2 | EPA 3 | EPA 4 | Mean OD490 | SD OD490 |
|-----------------|----------|-------|--------|--------|--------|-------|-------|-------|-------|------------|----------|
| Shampoo 7 | HZA | 16 | 4 | 0 | 0 | 16 | 4 | 0 | 0 | 0.41 | 0.16 |
| Liquid Soap 1 | HZB* | 0 | 0 | 4 | 16 | 0 | 0 | 20 | 0 | 0.20 | 0.02 |
| Shampoo 1 | HZC* | 0 | 0 | 10 | 10 | 0 | 0 | 20 | 0 | 0.96 | 0.31 |
| Shampoo 5 | HZD* | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.23 | 0.08 |
| Gel Cleaner | HZE | 10 | 0 | 0 | 10 | 10 | 0 | 10 | 0 | 0.19 | 0.05 |
| Baby Shampoo 2 | HZF | 16 | 4 | 0 | 0 | 16 | 4 | 0 | 0 | 0.42 | 0.08 |
| Shampoo 8 | HZG* | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.20 | 0.06 |
| Eye Makeup re. | HZH | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.02 | 0.02 |
| Skin Cleaner | HZI | 16 | 3 | 1 | 0 | 16 | 3 | 1 | 0 | 0.77 | 0.04 |
| Mild Shampoo | HZJ | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.05 | 0.03 |
| Bubble bath | HZK | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0.96 | 0.32 |
| Foam Bath | HZL | 19 | 0 | 1 | 0 | 16 | 0 | 4 | 0 | 0.91 | 0.26 |
| Shampoo 3 | HZM* | 0 | 0 | 10 | 10 | 0 | 0 | 10 | 10 | 0.21 | 0.05 |
| Shampoo 6 | HZN* | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.27 | 0.08 |
| Baby Shampoo 1 | HZP | 0 | 0 | 0 | 20 | 0 | 0 | 19 | 1 | 0.26 | 0.05 |
| Cleaning Gel | HZQ | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.16 | 0.05 |
| Facial Ci Foam | HZR* | 10 | 0 | 6 | 4 | 10 | 0 | 10 | 0 | 0.24 | 0.02 |
| Shower Gel | HZS | 19 | 1 | 0 | 0 | 19 | 1 | 0 | 0 | 1.55 | 0.09 |
| Polishing Scrub | HZT | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.00 | 0.00 |
| Hand Soap | HZU* | 0 | 0 | 4 | 16 | 0 | 0 | 20 | 0 | 0.29 | 0.09 |
| Shampoo 4 | HZV* | 0 | 0 | 4 | 16 | 0 | 0 | 20 | 0 | 0.27 | 0.04 |
| Liquid Soap 2 | HZW* | 0 | 0 | 16 | 4 | 0 | 0 | 20 | 0 | 0.35 | 0.10 |
| Shampoo 2 | HZX | 19 | 1 | 0 | 0 | 16 | 4 | 0 | 0 | 0.71 | 0.29 |
| Shampoo AntiD | HZY | 16 | 4 | 0 | 0 | 16 | 4 | 0 | 0 | 0.85 | 0.20 |
| Facial Cleaner | HZZ | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.00 | 0.00 |

| Name | Material | GHS 1 | GHS 2a | GHS 2b | GHS NI | EPA 1 | EPA 2 | EPA 3 | EPA 4 | Mean OD490 | SD OD490 |
|-----------------|----------|-------|--------|--------|--------|-------|-------|-------|-------|------------|----------|
| Polishing Scrub | HZT | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.001 | 0.001 |
| Facial Cleaner | HZZ | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.004 | 0.004 |
| Eye Makeup re. | HZH | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.020 | 0.016 |
| Mild Shampoo | HZJ | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0.050 | 0.025 |
| Cleaning Gel | HZQ | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.164 | 0.050 |
| Gel Cleaner | HZE | 10 | 0 | 0 | 10 | 10 | 0 | 10 | 0 | 0.194 | 0.048 |
| Shampoo 8 | HZG* | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.197 | 0.058 |
| Liquid Soap 1 | HZB* | 0 | 0 | 4 | 16 | 0 | 0 | 0 | 0 | 0.199 | 0.024 |
| Shampoo 3 | HZM* | 0 | 0 | 10 | 10 | 0 | 0 | 10 | 10 | 0.214 | 0.049 |
| Shampoo 5 | HZD* | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.231 | 0.084 |
| Facial Ci Foam | HZR* | 10 | 0 | 6 | 4 | 10 | 0 | 10 | 0 | 0.239 | 0.022 |
| Baby Shampoo 1 | HZP | 0 | 0 | 0 | 20 | 0 | 0 | 19 | 1 | 0.261 | 0.051 |
| Shampoo 6 | HZN* | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0 | 0.267 | 0.076 |
| Shampoo 4 | HZV* | 0 | 0 | 4 | 16 | 0 | 0 | 20 | 0 | 0.268 | 0.045 |
| Hand Soap | HZU* | 0 | 0 | 4 | 16 | 0 | 0 | 20 | 0 | 0.293 | 0.092 |
| Liquid Soap 2 | HZW* | 0 | 0 | 16 | 4 | 0 | 0 | 20 | 0 | 0.352 | 0.100 |
| Shampoo 7 | HZA | 16 | 4 | 0 | 0 | 16 | 4 | 0 | 0 | 0.406 | 0.156 |
| Baby Shampoo 2 | HZF | 16 | 4 | 0 | 0 | 16 | 4 | 0 | 0 | 0.425 | 0.082 |
| Shampoo 2 | HZX | 19 | 1 | 0 | 0 | 16 | 4 | 0 | 0 | 0.705 | 0.289 |
| Skin Cleaner | HZI | 16 | 3 | 1 | 0 | 16 | 3 | 1 | 0 | 0.769 | 0.036 |
| Shampoo AntiD | HZY | 16 | 4 | 0 | 0 | 16 | 4 | 0 | 0 | 0.847 | 0.199 |
| Foam Bath | HZL | 19 | 0 | 1 | 0 | 16 | 0 | 4 | 0 | 0.912 | 0.261 |
| Bubble bath | HZK | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0.956 | 0.324 |
| Shampoo 1 | HZC* | 0 | 0 | 10 | 10 | 0 | 0 | 20 | 0 | 0.957 | 0.306 |
| Shower Gel | HZS | 19 | 1 | 0 | 0 | 19 | 1 | 0 | 0 | 1.548 | 0.093 |

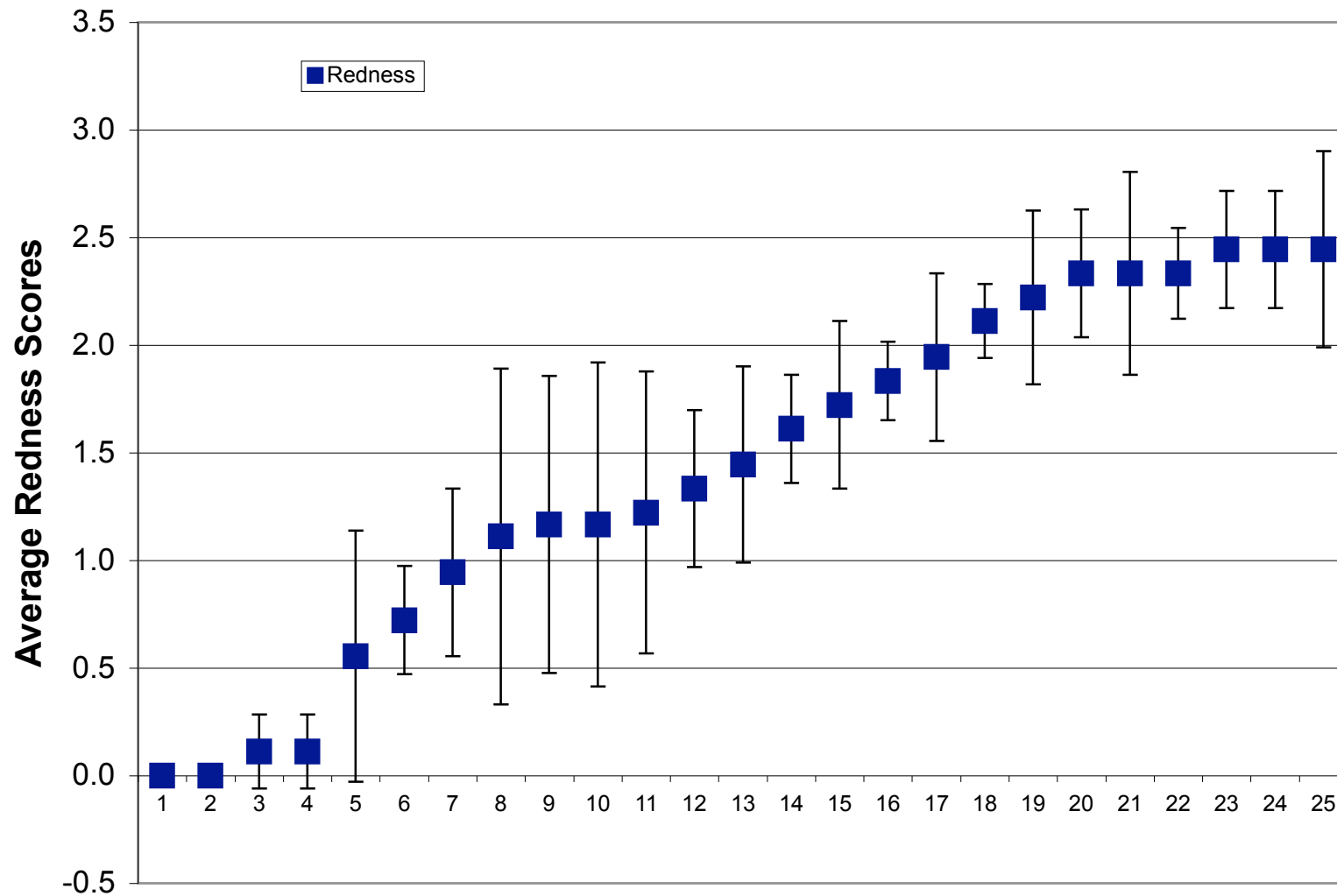
IIVS Submission - Analysis of In Vivo Data for Gettings et al. (1996)



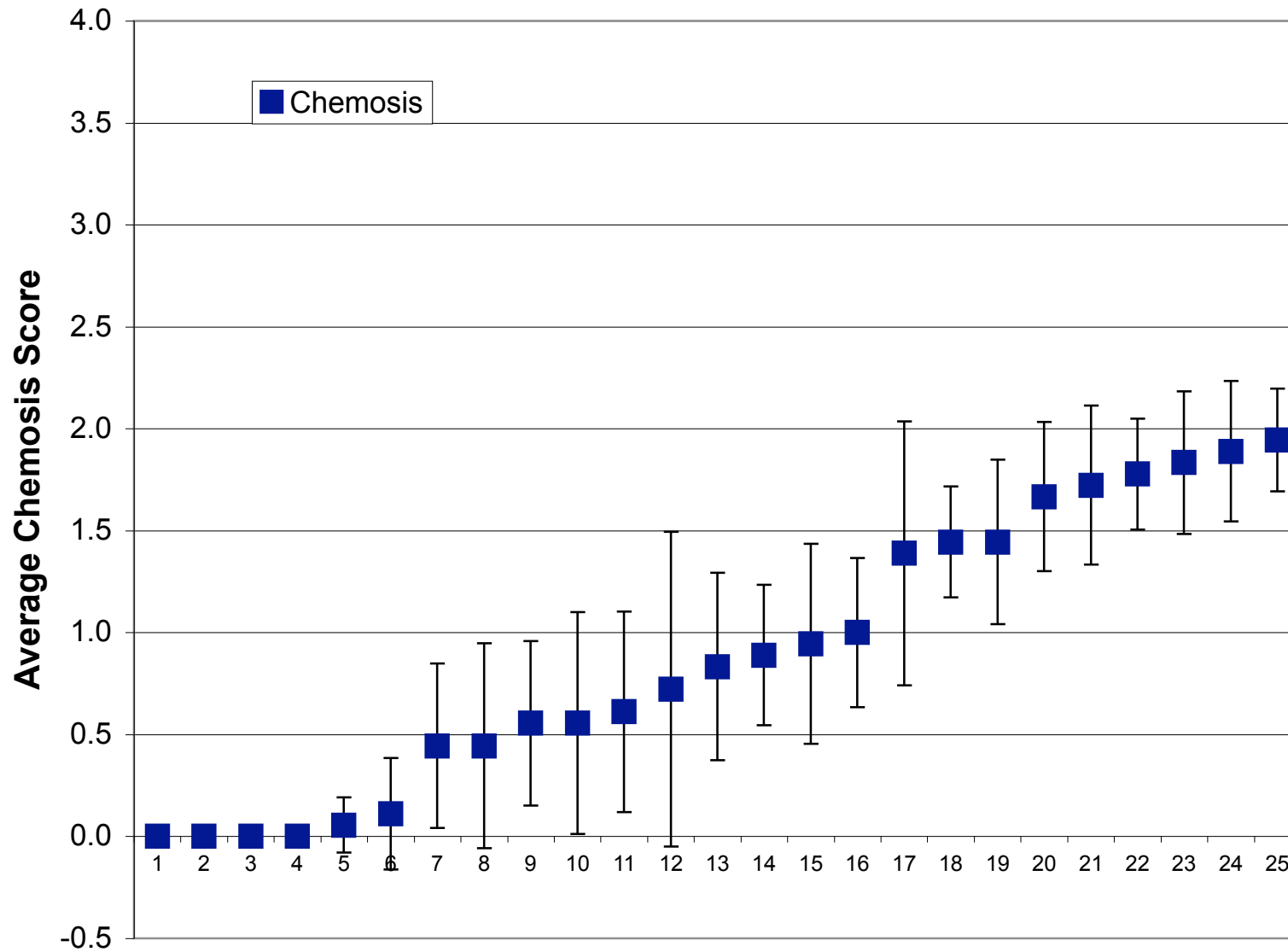
IIVS Submission - Analysis of In Vivo Data for Gettings et al. (1996)



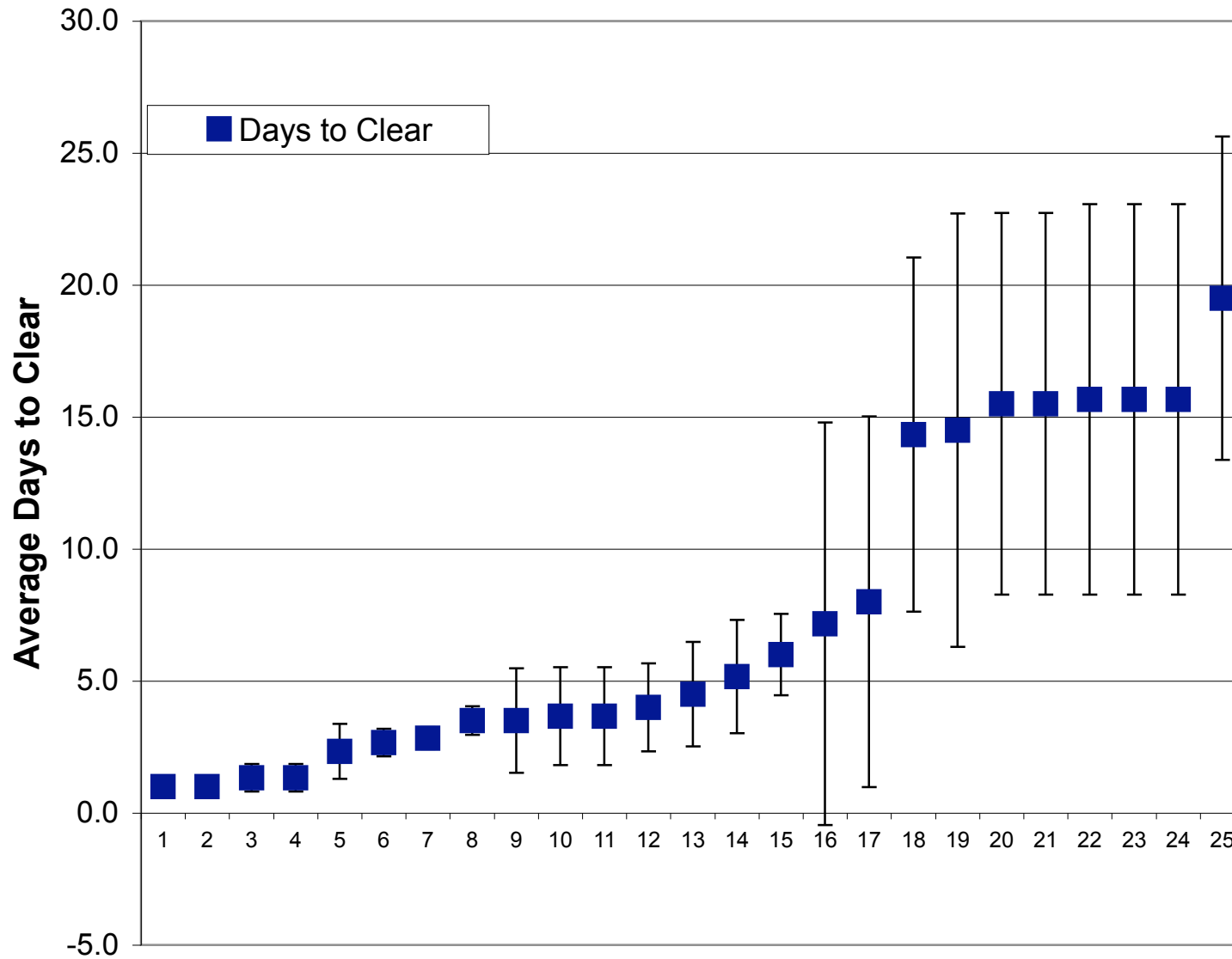
IIVS Submission - Analysis of In Vivo Data for Gettings et al. (1996)



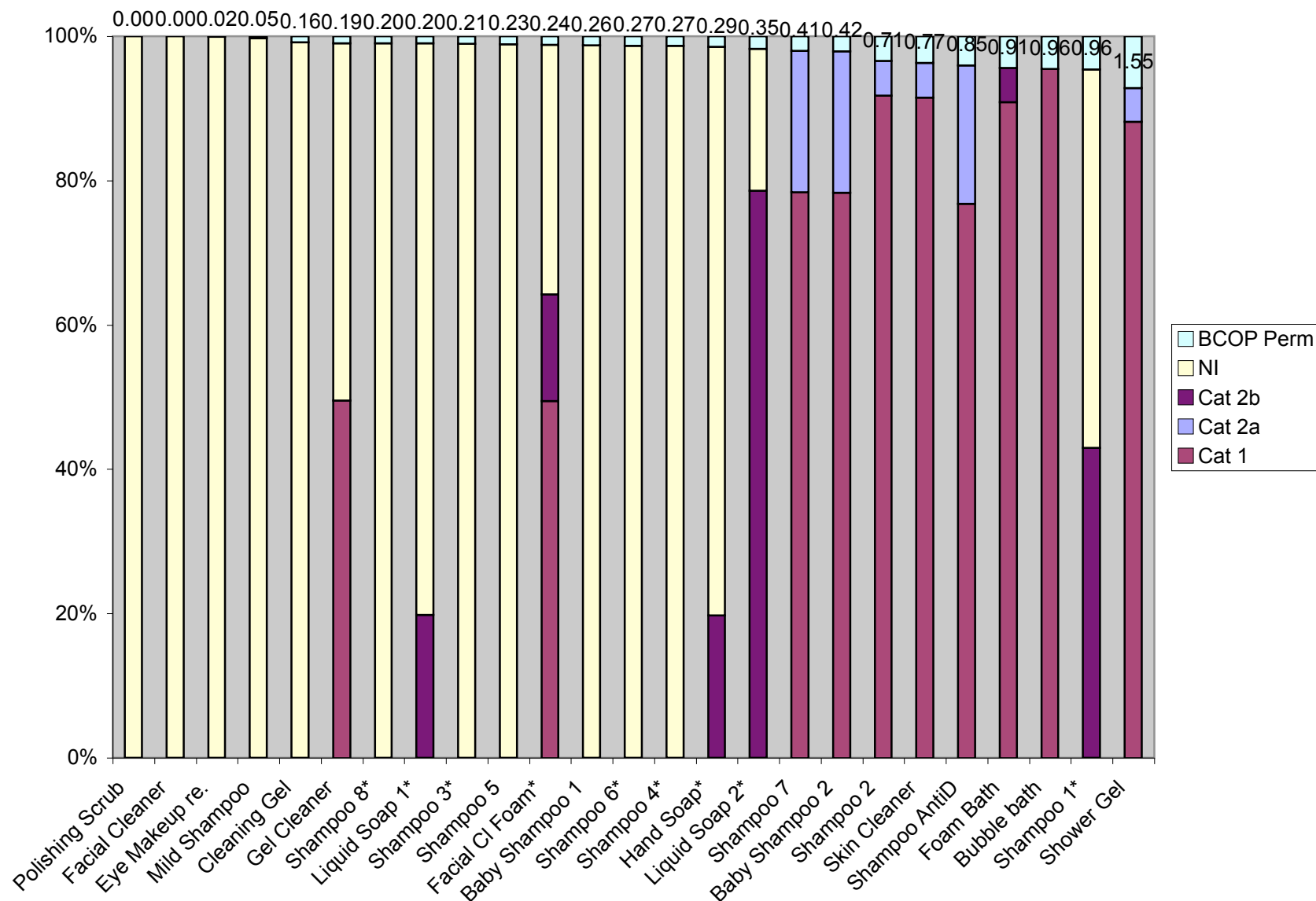
IIVS Submission - Analysis of In Vivo Data for Gettings et al. (1996)



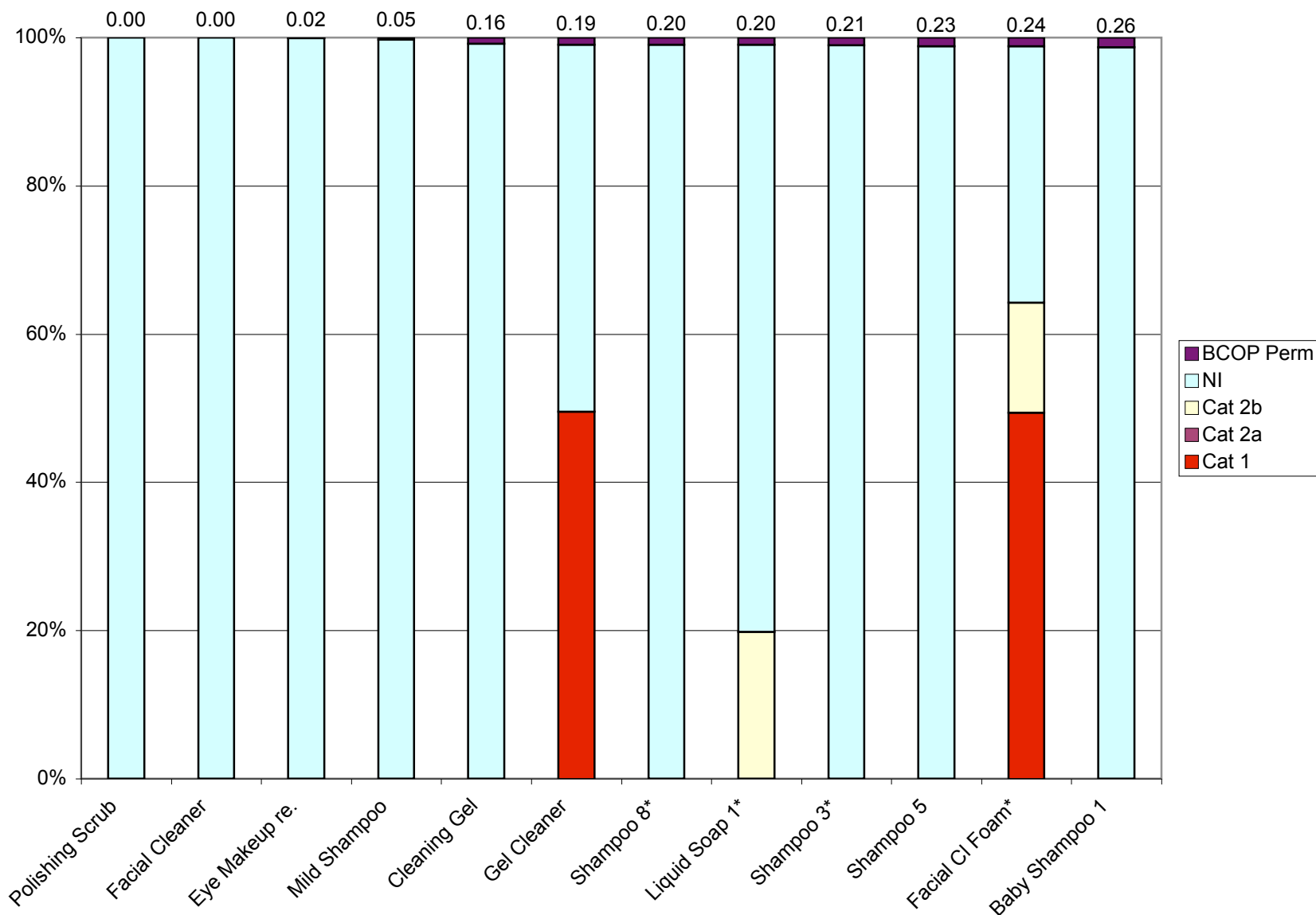
IIVS Submission - Analysis of In Vivo Data for Gettings et al. (1996)



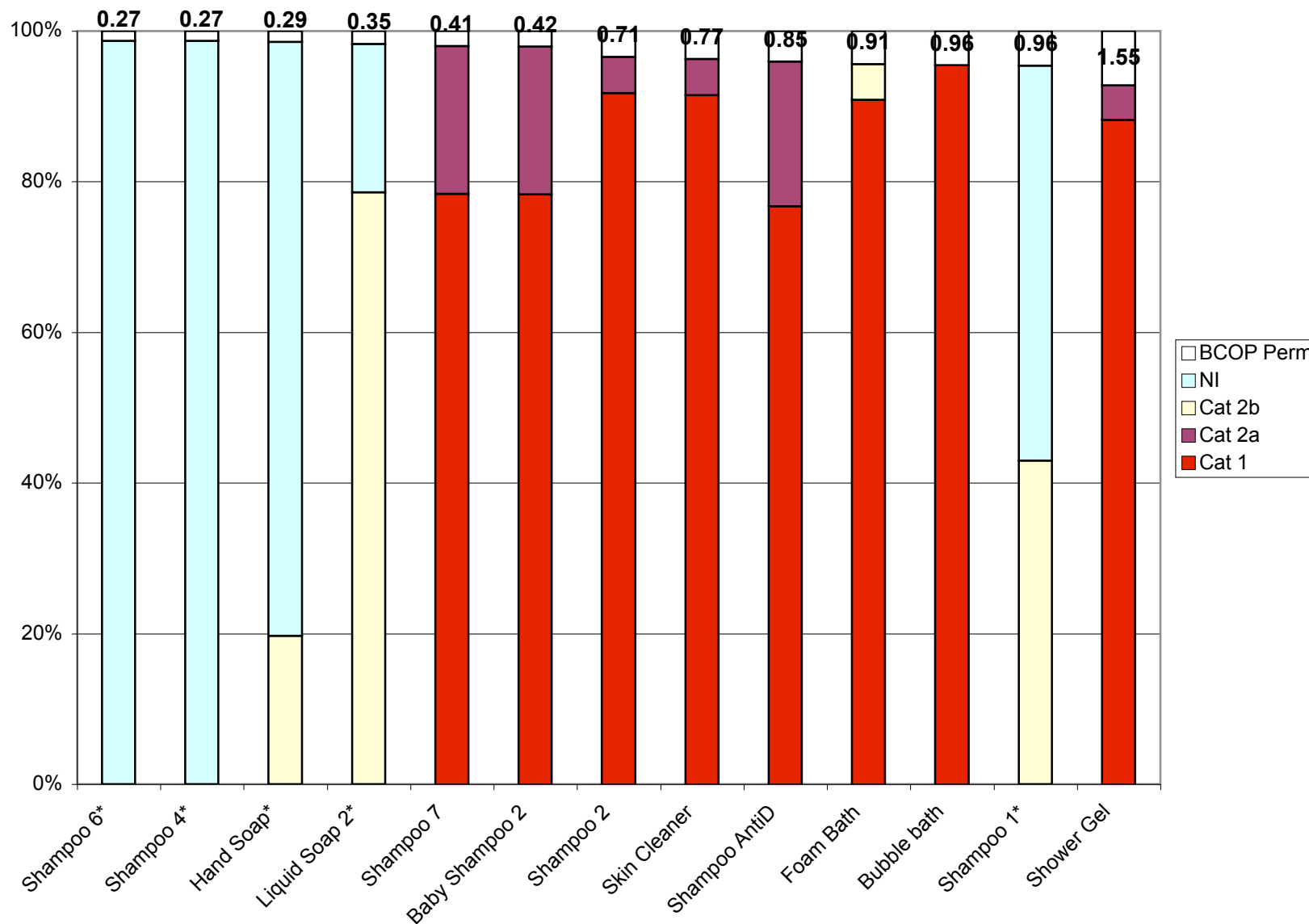
IIVS Submission - Comparison of BCOP Permeability Data with GHS Categories for In Vivo Data



IIVS Submission - Comparison of BCOP Permeability Data with GHS Categories for In Vivo Data



IIVS Submission - Comparison of BCOP Permeability Data with GHS Categories for In Vivo Data



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Appendix G6

Dataset Received from Johnson & Johnson Pharmaceutical Research and Development – A Division of Janssen Pharmaceutica N.V. (Laboratory No. 9 in Gautheron et al. 1994)

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Johnson & Johnson
PHARMACEUTICAL RESEARCH
& DEVELOPMENT
DIVISION OF JANSSEN PHARMACEUTICA N.V.



Pergamon

0887-2333(94)E0010-Q

Toxic. in Vitro Vol. 8, No. 3, pp. 381-392, 1994
Elsevier Science Ltd. Printed in Great Britain

INTERLABORATORY ASSESSMENT OF THE BOVINE CORNEAL OPACITY AND PERMEABILITY (BCOP) ASSAY*

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E. GILLIO TOS⁸, C. HAGEMANN⁹, P. VANPARYS¹⁰, G. DEKNUDT¹⁰, G. JACOBS¹¹, M. PRINSEN¹²,
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This document contains the individual cornea data collected in laboratory
no. 09 (Janssen Pharmaceutica) => 52 compounds were tested.

Compounds tested

Table 1. Test chemicals and suppliers

| Chemical | | CAS no.* | Supplier: catalogue no. |
|----------|--------------------------------------|------------|----------------------------|
| Code no. | Name | | |
| 1 | 2-Ethoxyethanol | 110-80-5 | Aldrich: 25,637-4 |
| 2 | Anthracene | 120-12-7 | Aldrich: 14,106-2 |
| 3 | Allyl alcohol | 107-18-6 | Aldrich: 24,053-2 |
| 4 | EDTA, di-potassium salt | 25102-12-9 | Aldrich: 22,600-9 |
| 5 | Hexane | 110-54-3 | Aldrich: 13,936-6 |
| 6 | 2,4-Pentanedione | 123-54-6 | Aldrich: P 775-4 |
| 7 | Phenylbutazone | 50-33-9 | Aldrich: 21,186-9 |
| 8 | 1-Nitropropane | 108-03-2 | Aldrich: N2,285-1 |
| 9 | 3-Glycidoxypropyltrimethoxysilane | 2530-83-8 | Aldrich: 23,578-4 |
| 10 | Aluminium hydroxide | 21645-51-2 | Aldrich: 23,918-6 |
| 11 | 1,2,4-Trimethylbenzene | 95-63-6 | Aldrich: 24,027-3 |
| 12 | 2-Mercaptopyrimidine | 1450-85-7 | Aldrich: 12,962-3 |
| 13 | Betaine monohydrate | 590-47-6 | Aldrich: 21,913-4 |
| 14 | Sodium oxalate | 62-76-0 | Aldrich: 22,343-3 |
| 15 | DL-Glutamic acid | 19285-83-7 | Aldrich: G 279-6 |
| 16 | Petroleum ether | 8032-32-4 | Aldrich: 26,173-4 |
| 17 | Butyrolactone | 96-48-0 | Aldrich: B10 360-84 |
| 18 | 2,4-Dichloro-5-sulfamoylbenzoic acid | 2736-23-4 | Aldrich: 14,739-7 |
| 19 | Furan | 110-00-9 | Aldrich: 18,592-2 |
| 20 | Imidazole | 288-32-4 | Aldrich: I 20-2 |
| 21 | 1-phenyl-3-pyrazolidone | 92-43-3 | Aldrich: 12,791-4 |
| 22 | 2-Aminophenol | 95-55-6 | Aldrich: A7 130-1 |
| 23 | Gluconolactone | 90-80-2 | Aldrich: G200-1 |
| 24 | 2-Methoxyethanol | 109-86-4 | Aldrich: 27,048-2 |
| 25 | Dimethyl sulfoxide | 67-68-5 | Aldrich: 27,043-1 |
| 26 | Magnesium carbonate | 56378-72-4 | Aldrich: 22,766-8 |
| 27 | Propyl-4-Hydroxybenzoate | 94-13-3 | Aldrich: P5 335-7 |
| 28 | Iminodibenzyl | 494-19-9 | Aldrich: I 130-8 |
| 29 | Octanol | 111-87-5 | Aldrich: 29,324-5 |
| 30 | Methylisobutyl ketone | 108-10-1 | Aldrich: 29,326-1 |
| 31 | Dibenzoyl-L-tartaric acid | 2743-38-6 | Aldrich: 34,584-9 |
| 32 | Ethanol | 64-17-5 | local vendor |
| 33 | Methanol | 67-56-1 | local vendor |
| 34 | Ethyl acetoacetate | 141-97-9 | Aldrich: 24,070-2 |
| 35 | Promethazine hydrochloride | 58-33-3 | Aldrich: 28,411-4 |
| 36 | Deoxycholic acid, sodium salt | 302-95-4 | Sigma: D-6750 |
| 37 | MYRJ-45 | | ICI: A-8563 |
| 38 | BRIJ-35 | 9002-92-0 | Sigma: P-1254 |
| 39 | Tetraaminopyrimidine sulfate | 5392-28-9 | Aldrich: T 380-7 |
| 40 | N-Lauroylsarcosine, sodium salt | 7631-98-3 | Sigma: L-5125 |
| 41 | Quinacrine | 69-05-6 | Sigma: Q-3251 |
| 42 | Hexadecyltrimethylammonium bromide | 57-09-0 | Sigma: H-5882 |
| 43 | Thiourea | 62-56-6 | Aldrich: 24,025-7 |
| 44 | Dimethylbiguanide | 657-24-9 | Sigma: D-5035 |
| 45 | Benzethonium chloride | 121-54-0 | Sigma: B-8879 |
| 46 | Triton X-155 | 9010-44-0 | Sigma: X-155 |
| 47 | 1,2,3-Trichloropropane | 96-18-4 | Aldrich: 11,012-4 |
| 48 | Cyclohexanone | 108-94-1 | Aldrich: C10 218-0 |
| 49 | Diacetone alcohol | 123-42-2 | Aldrich: H4 154-4 |
| 50 | Laurylsulfobetaine | 14933-08-5 | Sigma: D-4516 |
| 51 | Pyridine | 110-86-1 | Aldrich: 27,040-7 |
| 52 | Triethanolamine | 102-71-6 | Aldrich: T5 830-0 |

*Chemical Abstracts Service registry no.

EEC VALIDATION STUDY ON THE BOVINE CORNEA OPACITY-PERMEABILITY ASSAY

| BLIND CODE | CHEMICAL | L | OPACITY | | | PERMEABILITY | | IN VITRO SCORE | EXP. Nr. | Re- marks | |
|------------|---------------------------------------|----|-------------|-------------|------------|----------------|------|----------------|----------|-----------|-------|
| | | | Su | 10 min | 120 min | 240 min | O.D. | | | | µg/ml |
| | | | | | | | | | | | |
| 1 | 2-ethoxyethanol | L | 62.3 ± 2.3 | 61.7 ± 1.9 | | 1.515 ± 0.134 | 19.3 | 84.4 ± 1.2 | 5 | I | |
| 2 | anthracene | So | | | 1.4 ± 1.2 | 0.003 ± 0.007 | 0.0 | 1.4 ± 1.3 | 42 | C | |
| 3 | allyl alcohol | L | 97.6 ± 18.9 | 94.1 ± 18.9 | | 1.948 ± 0.455 | 24.7 | 123.3 ± 14.4 | 5 | I | |
| 4 | ethylenediaminetetraacetate DiK | So | | | 0.8 ± 0.5 | 0.010 ± 0.014 | 0.1 | 0.9 ± 0.6 | 42 | C | |
| 5 | hexane | L | 1.3 ± 0.8 | 1.3 ± 1.8 | | 0.002 ± 0.002 | 0 | 1.4 ± 1.8 | 6 | I | |
| 6 | 2,4-pentadione | L | 54.6 ± 4.7 | 49.1 ± 3.4 | | 0.084 ± 0.036 | 1.1 | 50.3 ± 3.4 | 6 | I | |
| 7 | phenylbutazone | So | | | 0.7 ± 0.4 | -0.008 ± 0.008 | 0 | 0.5 ± 0.4 | 42 | C | |
| 8 | 1-nitropropane | L | 1.5 ± 1.1 | 16.5 ± 1.7 | | 0.008 ± 0.018 | 0.1 | 16.6 ± 1.9 | 7 | I | |
| 9 | 3-glycidioxypropyltrimethoxysilane | L | 16.1 ± 5.2 | 16.6 ± 4.5 | | 0.065 ± 0.082 | 0.8 | 17.6 ± 4.7 | 7 | I | |
| 10 | aluminium hydroxide | So | | | 9.7 ± 2.3 | 0.012 ± 0.007 | 0.1 | 9.9 ± 2.3 | 43 | C | |
| 11 | 1,2,4-trimethylbenzene | L | 4.6 ± 0.9 | 12.5 ± 1.5 | | 0.579 ± 0.369 | 7.3 | 21.2 ± 4.5 | 8 | I | |
| 12 | 2-mercaptopyrimidine | So | | | -0.2 ± 0.4 | -0.004 ± 0.002 | 0 | -0.2 ± 0.4 | 43 | C | |
| 13 | betaine monohydrate | So | | | 3.1 ± 2.3 | 0.029 ± 0.014 | 0.1 | 3.5 ± 2.2 | 43 | C | |
| 14 | sodium oxalate | So | | | 1.7 ± 0.9 | 0.103 ± 0.042 | 0.6 | 3.2 ± 1.3 | 22 | C | |
| 15 | DL-glutamic acid | So | | | -0.2 ± 0.5 | -0.005 ± 0.005 | 0 | -0.2 ± 0.5 | 22 | C | |
| 16 | petroleum ether | L | 0.7 ± 1.1 | 1.4 ± 1.9 | | 0.015 ± 0.011 | 0.2 | 2.1 ± 1.9 | 8 | I | |
| 17 | butyrolactone | L | 32.3 ± 3.9 | 34.2 ± 3.1 | | 0.495 ± 0.199 | 6.3 | 41.6 ± 5.0 | 9 | I | |
| 18 | 2,4-dichloro-5-sulfamoyl-benzoic acid | So | | | 19.3 ± 4.8 | -0.010 ± 0.004 | 0 | 19.2 ± 4.7 | 25 | C | |
| 19 | furan | L | 15.2 ± 2.1 | 20.6 ± 2.5 | | 1.970 ± 0.197 | 24.9 | 50.2 ± 4.0 | 9 | I | |
| 20 | imidazole | So | | | 40.3 ± 9.9 | 1.598 ± 0.271 | 9.2 | 64.3 ± 11.2 | 25 | C | |

EEC VALIDATION STUDY ON THE BOVINE CORNEA OPACITY-PERMEABILITY ASSAY

| BLIND CODE | CHEMICAL | L | OPACITY | | | PERMEABILITY | | IN VITRO SCORE | EXP. Nr. | Re- marks |
|------------|---------------------------------|----|------------|------------|-------------|----------------|-------|----------------|----------|-----------|
| | | | 10 min | 120 min | 240 min | O.D. | µg/ml | | | |
| | | | | | | | | | | |
| 21 | 1-phenyl-3-pyrazolidone | So | | | 11.1 ± 1.0 | 0.143 ± 0.052 | 0.8 | 13.2 ± 1.6 | 40 | C |
| 22 | 2-aminophenol | So | | | 10.9 ± 1.4 | 0.144 ± 0.188 | 0.8 | 13.0 ± 2.5 | 40 | C |
| 23 | gluconolactone | So | | | 85.2 ± 5.6 | 0.154 ± 0.041 | 0.8 | 87.5 ± 5.3 | 26 | C |
| 24 | 2-methoxyethanol | L | 46.6 ± 8.4 | 45.1 ± 7.1 | | 0.800 ± 0.137 | 10.1 | 57.1 ± 8.9 | 10 | I |
| 25 | DMSO | L | 8.7 ± 2.6 | 6.3 ± 1.7 | | 0.204 ± 0.056 | 2.6 | 9.4 ± 1.4 | 10 | I |
| 26 | magnesium carbonate | So | | | 0.5 ± 0.5 | 0.016 ± 0.004 | 0.1 | 0.7 ± 0.5 | 26 | C |
| 27 | propyl-4-hydroxybenzoate | So | | | 5.2 ± 1.7 | 0.066 ± 0.059 | 0.4 | 6.2 ± 1.5 | 27 | C |
| 28 | iminodibenzyl | So | | | 0.2 ± 0.4 | -0.001 ± 0.003 | 0 | 0.2 ± 0.4 | 27 | C |
| 29 | octanol | L | 22.4 ± 2.2 | 27.7 ± 5.0 | | 2.212 ± 0.377 | 28.0 | 60.9 ± 6.9 | 11 | I |
| 30 | methyl isobutyl ketone | L | 10.6 ± 1.0 | 11.2 ± 2.7 | | 0.546 ± 0.244 | 6.8 | 19.4 ± 3.1 | 11 | I |
| 31 | dibenzoyl-L-tartaric acid | So | | | 75.2 ± 14.2 | 0.416 ± 0.116 | 2.4 | 81.5 ± 13.7 | 27 | C |
| 32 | ethanol | L | 23.9 ± 4.0 | 22.3 ± 4.1 | | 1.560 ± 0.316 | 19.8 | 45.7 ± 6.6 | 12 | I |
| 33 | methanol | L | 81.7 ± 5.6 | 73.7 ± 6.0 | | 1.698 ± 0.560 | 9.8 | 99.2 ± 12.8 | 13b | C |
| 34 | ethyl acetoacetate | L | 30.7 ± 2.8 | 24.0 ± 2.9 | | 0.117 ± 0.007 | 0.6 | 25.7 ± 3.8 | 14 | C |
| 35 | promethazine HCl | So | | | 134.9 ± 9.7 | 0.287 ± 0.216 | 1.6 | 139.2 ± 10.2 | 38 | C |
| 36 | deoxycholic acid sodium salt | Su | 10.8 ± 1.5 | 13.9 ± 2.6 | | 5.718 ± 0.511 | 32.6 | 99.6 ± 8.0 | 17 | C |
| 37 | MYRJ 45 | Su | -0.3 ± 0.4 | 0.4 ± 1.4 | | 0.005 ± 0.004 | 0 | 0.5 ± 1.4 | 17 | C |
| 38 | polyoxyethylene 23 lauryl ether | Su | 0.7 ± 0.0 | 1.1 ± 0.6 | | -0.002 ± 0.008 | 0 | 1.0 ± 0.7 | 18 | C |
| 39 | tetraaminopyrimidine sulfafate | So | | | 2.6 ± 1.4 | -0.003 ± 0.006 | 0 | 2.5 ± 1.4 | 38 | C |
| 40 | N-lauroylsarcosine sodium salt | Su | 3.4 ± 1.2 | 7.8 ± 0.9 | | 3.653 ± 0.496 | 21.0 | 62.6 ± 7.3 | 18 | C |

EEC VALIDATION STUDY ON THE BOVINE CORNEA OPACITY-PERMEABILITY ASSAY

| BLIND CODE | CHEMICAL | L | OPACITY | | | PERMEABILITY | | IN VITRO SCORE | EXP. Nr. | Re- marks | |
|------------|------------------------------------|----|------------|------------|------------|---------------|------|----------------|----------|-----------|-------|
| | | | Su | So | 120 min | 240 min | O.D. | | | | µg/ml |
| | | | | | | | | | | | |
| 41 | quinacrine | So | | | 57.0 ± 5.4 | 0.063 ± 0.040 | 0.4 | 57.9 ± 5.8 | 38 | C | |
| 42 | hexadecyltrimethylammonium bromide | Su | 11.3 ± 1.8 | 18.3 ± 3.6 | | 3.438 ± 0.562 | 19.8 | 69.9 ± 6.9 | 18 | C | |
| 43 | thiourea | So | | | 85.8 ± 9.2 | 4.373 ± 1.028 | 25.0 | 151.4 ± 20.7 | 39 | C | |
| 44 | dimethyl biguanide | So | | | 0.7 ± 1.8 | 0.097 ± 0.176 | 0.6 | 2.1 ± 2.6 | 39 | C | |
| 45 | benzethonium chloride | Su | 53.1 ± 3.8 | 84.6 ± 3.3 | | 5.420 ± 0.949 | 30.9 | 165.9 ± 14.5 | 19 | C | |
| 46 | Triton X-155 | Su | 1.4 ± 1.3 | 3.0 ± 1.6 | | 0.008 ± 0.014 | 0 | 3.1 ± 1.7 | 19 | C | |
| 47 | 1,2,3-trichloropropane | L | 4.1 ± 1.3 | 7.7 ± 1.9 | | 5.561 ± 1.398 | 31.7 | 91.1 ± 20.0 | 14 | C | |
| 48 | cyclohexanone | L | 57.9 ± 3.4 | 76.6 ± 3.9 | | 4.341 ± 0.551 | 24.9 | 141.7 ± 8.2 | 16 | C | |
| 49 | diacetone alcohol | L | 24.1 ± 3.6 | 31.1 ± 3.2 | | 4.119 ± 1.341 | 23.6 | 92.2 ± 22.0 | 17 | C | |
| 50 | laurylsulfobetaine | Su | 11.8 ± 2.6 | 16.2 ± 4.3 | | 5.742 ± 1.462 | 32.7 | 102.4 ± 24.8 | 41 | C | |
| 51 | pyridine | L | 39.3 ± 4.1 | 44.4 ± 3.3 | | 4.015 ± 0.849 | 23.0 | 104.7 ± 15.7 | 16 | C | |
| 52 | triethanolamine | L | 0.8 ± 0.7 | 2.6 ± 0.9 | | 0.025 ± 0.011 | 1.4 | 3.0 ± 1.0 | 16 | C | |

L = Liquid (100%)

Su = Surfactant (10%)

So = Solid (20%)

I = Incomplete medium (MEM with only 1% FBS) ----> Exp. Nr. 5 to 13a

C = Complete medium

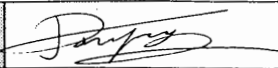
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 09 Mar 92
Experiment no. 5
Compound of the same pair no. 3

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | correc. | Permeability (OD) | | In-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------|-------------------|---------|----------------|
| | | C1 | 9 | 9 | 9.0 | C1 | 13 | 13 | 13.0 | | 0.003 | correc. | |
| 1 | MEM | C1 | 9 | 9 | 9.0 | C1 | 13 | 13 | 13.0 | | 0.003 | | 13.0 |
| 2 | | -9 | C2 | 0 | -4.5 | -14 | C2 | 0 | -7.0 | | 0.002 | | -7.0 |
| 3 | | -9 | 0 | C3 | -4.5 | -14 | 0 | C3 | -7.0 | | 0.004 | | -6.9 |
| mean | | | | | | | | | | | 0.003 | | -0.3 |
| ± S.D. | | | | | | | | | | | 0.001 | | 11.5 |

| 4 | compound no. | 56 | 65 | 66 | 62.3 | 51 | 66 | 66 | 61.0 | 61.3 | 1.447 | 1.444 | 83.0 |
|--------|---------------|------|----|----|------|------|----|----|------|------|-------|-------|-------|
| 5 | 1 | 59 | 68 | 68 | 65.0 | 54 | 69 | 68 | 63.7 | 64.0 | 1.502 | 1.498 | 86.5 |
| 6 | concentration | 54 | 64 | 64 | 60.7 | 50 | 64 | 65 | 59.7 | 60.0 | 1.669 | 1.666 | 85.0 |
| 7 | | 58 | 68 | 68 | 64.7 | 54 | 68 | 69 | 63.7 | 64.0 | 1.307 | 1.304 | 83.6 |
| 8 | | 100% | 56 | 65 | 65 | 62.0 | 51 | 66 | 66 | 61.0 | 61.3 | 1.537 | 1.534 |
| 9 | | 53 | 62 | 62 | 59.0 | 50 | 64 | 64 | 59.3 | 59.7 | 1.649 | 1.646 | 84.3 |
| mean | | | | | 62.3 | | | | 61.4 | 61.7 | 1.518 | 1.515 | 84.4 |
| ± S.D. | | | | | 2.3 | | | | 1.9 | 1.9 | 0.134 | 0.134 | 1.2 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 4 | compound no. | |
|--------|---------------|------|
| 5 | 1 | |
| 6 | concentration | |
| 7 | | 100% |
| 8 | | |
| 9 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 71 |
| 2 | B | 152 |
| | A | |
| 3 | B | 223 |
| | A | |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

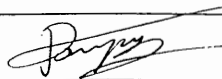
Lab. no. 09

Date: 25 Jun 92

Name: Ph. Vanparys

Experiment no. 42

Compound of the same pair no. 4 + 7

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|------|---------|
| C1 | | | | |
| 0 | 0 | 0 | 0.0 | |
| -1 | C2 | 0 | -0.5 | |
| -1 | 0 | C3 | -0.5 | |
| | | | | -0.3 |
| | | | | 0.3 |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.016 | | 0.2 |
| 0.023 | | -0.2 |
| 0.018 | | -0.2 |
| 0.019 | | -0.1 |
| 0.004 | | 0.3 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 2 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 2 | 3 | 3 | 2.7 | 3.0 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| 1 | 1 | 2 | 1.3 | 1.7 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| 2 | 2 | 3 | 2.3 | 2.7 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| | | | | 1.1 |
| | | | | 1.4 |
| | | | | 1.2 |
| | | | | 1.2 |

| | | |
|-------|--------|-----|
| 0.020 | 0.001 | 3.0 |
| 0.010 | -0.009 | 0.2 |
| 0.024 | 0.005 | 1.7 |
| 0.023 | 0.004 | 0.4 |
| 0.026 | 0.007 | 2.8 |
| 0.029 | 0.010 | 0.5 |
| 0.022 | 0.003 | 1.4 |
| 0.007 | 0.007 | 1.3 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -170 |
| 3 | B | 248 |
| | A | -259 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 2 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

pH: 8.12

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

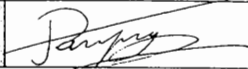
Lab. no. 09

Date: 09 Mar 92

Name: Ph. Vanparys

Experiment no. 5

Compound of the same pair no. 1

Signature: 

| cor-nea | treatment | opacity at 10 min. | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|--------------------|----|----|------|--------------------|----|----|------|-------------------|---------|----------------|
| | | C1 | C2 | C3 | mean | C1 | C2 | C3 | mean | correc. | correc. | |
| 1 | MEM | C1 | 9 | 9 | 9.0 | C1 | 13 | 13 | 13.0 | | 0.003 | 13.0 |
| 2 | | C2 | -9 | 0 | -4.5 | C2 | 0 | | -7.0 | | 0.002 | -7.0 |
| 3 | | C3 | -9 | 0 | -4.5 | C3 | 0 | | -7.0 | | 0.004 | -6.9 |
| mean | | | | | 0.0 | | | | -0.3 | | 0.003 | -0.3 |
| ± S.D. | | | | | 7.8 | | | | 11.5 | | 0.001 | 11.5 |

| cor-nea | treatment | opacity at 10 min. | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | | |
|---------|---------------|--------------------|-----|------|-------|--------------------|-----|------|-------|-------------------|-------|----------------|-------|-------|
| 10 | compound no. | 115 | 123 | 123 | 120.3 | 106 | 122 | 121 | 116.3 | 116.7 | 1.555 | | 1.552 | 139.9 |
| 11 | 3 | 109 | 118 | 119 | 115.3 | 102 | 117 | 117 | 112.0 | 112.3 | 1.957 | 1.953 | 141.6 | |
| 12 | concentration | 88 | 97 | 97 | 94.0 | 80 | 95 | 95 | 90.0 | 90.3 | 1.859 | 1.856 | 118.2 | |
| 13 | | 96 | 105 | 105 | 102.0 | 88 | 102 | 102 | 97.3 | 97.7 | 1.581 | 1.578 | 121.3 | |
| 14 | | 100% | 77 | 86 | 86 | 83.0 | 69 | 85 | 85 | 79.7 | 80.0 | 1.948 | 1.945 | 109.2 |
| 15 | | | 65 | 74 | 74 | 71.0 | 57 | 72 | 72 | 67.0 | 67.3 | 2.807 | 2.804 | 109.4 |
| mean | | | | | 97.6 | | | | 93.7 | 94.1 | 1.951 | 1.948 | 123.3 | |
| ± S.D. | | | | 18.9 | | | | 18.9 | 18.9 | 0.455 | 0.455 | 14.4 | | |

| cor-nea | treatment | opacity at 10 min. | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|--------------------|----|---|------|--------------------|----|----|------|-------------------|-------|----------------|
| 1 | MEM | C1 | 9 | 9 | 9.0 | C1 | 13 | 13 | 13.0 | | 0.003 | |
| 2 | | C2 | -9 | 0 | -4.5 | C2 | 0 | | -7.0 | | 0.002 | -7.0 |
| 3 | | C3 | -9 | 0 | -4.5 | C3 | 0 | | -7.0 | | 0.004 | -6.9 |
| mean | | | | | 0.0 | | | | -0.3 | | 0.003 | -0.3 |
| ± S.D. | | | | | 7.8 | | | | 11.5 | | 0.001 | 11.5 |

| cor-nea | treatment | opacity at 10 min. | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | | |
|---------|---------------|--------------------|-----|------|-------|--------------------|-----|------|-------|-------------------|-------|----------------|-------|-------|
| 10 | compound no. | 115 | 123 | 123 | 120.3 | 106 | 122 | 121 | 116.3 | 116.7 | 1.555 | | 1.552 | 139.9 |
| 11 | 3 | 109 | 118 | 119 | 115.3 | 102 | 117 | 117 | 112.0 | 112.3 | 1.957 | 1.953 | 141.6 | |
| 12 | concentration | 88 | 97 | 97 | 94.0 | 80 | 95 | 95 | 90.0 | 90.3 | 1.859 | 1.856 | 118.2 | |
| 13 | | 96 | 105 | 105 | 102.0 | 88 | 102 | 102 | 97.3 | 97.7 | 1.581 | 1.578 | 121.3 | |
| 14 | | 100% | 77 | 86 | 86 | 83.0 | 69 | 85 | 85 | 79.7 | 80.0 | 1.948 | 1.945 | 109.2 |
| 15 | | | 65 | 74 | 74 | 71.0 | 57 | 72 | 72 | 67.0 | 67.3 | 2.807 | 2.804 | 109.4 |
| mean | | | | | 97.6 | | | | 93.7 | 94.1 | 1.951 | 1.948 | 123.3 | |
| ± S.D. | | | | 18.9 | | | | 18.9 | 18.9 | 0.455 | 0.455 | 14.4 | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 71 |
| 2 | B | 152 |
| | A | |
| 3 | B | 223 |
| | A | |

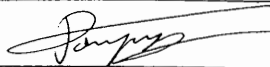
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 25 Jun 92
Experiment no. 42
Compound of the same pair no. 2 + 7

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|------|---------|
| C1 | 0 | 0 | 0.0 | |
| -1 | C2 | 0 | -0.5 | |
| -1 | 0 | C3 | -0.5 | |
| | | | | -0.3 |
| | | | | 0.3 |

| Permeability (OD) | correc. | in-vitro score |
|-------------------|---------|----------------|
| 0.016 | | 0.2 |
| 0.023 | | -0.2 |
| 0.018 | | -0.2 |
| 0.019 | | -0.1 |
| 0.004 | | 0.3 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 4 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 0 | 0 | 0 | 0.0 | 0.3 |
| 0 | 1 | 1 | 0.7 | 1.0 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| 0 | 1 | 1 | 0.7 | 1.0 |
| 1 | 1 | 2 | 1.3 | 1.7 |
| | | | | 0.4 |
| | | | | 0.8 |
| | | | | 0.5 |
| | | | | 0.5 |

| | | |
|-------|--------|-----|
| 0.043 | 0.024 | 0.7 |
| 0.039 | 0.020 | 1.3 |
| 0.014 | -0.004 | 0.3 |
| 0.015 | -0.004 | 0.3 |
| 0.043 | 0.024 | 1.4 |
| 0.019 | 0.000 | 1.7 |
| 0.029 | 0.010 | 0.9 |
| 0.014 | 0.014 | 0.6 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 4 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

pH: 5.2

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -170 |
| 3 | B | 248 |
| | A | -259 |

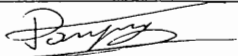
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 19 Mar 92
Experiment no. 6
Compound of the same pair no. 6

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------|-------------------|--|----------------|
| | | C1 | 4 | 4 | 4.0 | C1 | 4 | 4 | 4.0 | correc. | correc. | | |
| 1 | MEM | C1 | 4 | 4 | 4.0 | C1 | 4 | 4 | 4.0 | | 0.003 | | 4.0 |
| 2 | | -2 | C2 | 0 | -1.0 | -2 | C2 | 0 | -1.0 | | 0.003 | | -1.0 |
| 3 | | -2 | 0 | C3 | -1.0 | -2 | 0 | C3 | -1.0 | | 0.001 | | -1.0 |
| mean | | | | | 0.7 | | | | 0.7 | | 0.002 | | 0.7 |
| ± S.D. | | | | | 2.9 | | | | 2.9 | | 0.001 | | 2.9 |

| 4 | compound no. | 0 | 2 | 2 | 1.3 | 0 | 2 | 2 | 1.3 | 0.7 | 0.004 | 0.002 | 0.7 |
|--------|---------------|------|----|---|-----|-----|----|---|-----|------|-------|-------|-------|
| 5 | 5 | 0 | 2 | 2 | 1.3 | 3 | 6 | 6 | 5.0 | 4.3 | 0.004 | 0.002 | 4.4 |
| 6 | concentration | 1 | 3 | 3 | 2.3 | 1 | 4 | 4 | 3.0 | 2.3 | 0.002 | 0.000 | 2.3 |
| 7 | | -1 | 1 | 1 | 0.3 | -1 | 1 | 1 | 0.3 | -0.3 | 0.009 | 0.007 | -0.2 |
| 8 | | 100% | -1 | 1 | 1 | 0.3 | -1 | 1 | 1 | 0.3 | -0.3 | 0.005 | 0.003 |
| 9 | | 0 | 3 | 3 | 2.0 | 0 | 3 | 3 | 2.0 | 1.3 | 0.004 | 0.002 | 1.4 |
| mean | | | | | 1.3 | | | | 2.0 | 1.3 | 0.005 | 0.002 | 1.4 |
| ± S.D. | | | | | 0.8 | | | | 1.8 | 1.8 | 0.002 | 0.002 | 1.8 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 4 | compound no. |
|--------|---------------|
| 5 | 5 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -68 |
| 2 | B | 158 |
| | A | -152 |
| 3 | B | 254 |
| | A | -235 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

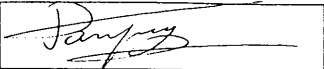
Lab. no. 09

Date: 19 Mar 92

Name: Ph. Vanparys

Experiment no. 6

Compound of the same pair no. 5

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 10 min | | | |
|-------------------|----|----|------|
| C1 | 4 | 4 | 4.0 |
| -2 | C2 | 0 | -1.0 |
| -2 | 0 | C3 | -1.0 |
| mean | | | 0.7 |
| ± S.D. | | | 2.9 |

| opacity at 120 min | | | | correc. |
|--------------------|----|----|------|---------|
| C1 | 4 | 4 | 4.0 | |
| -2 | C2 | 0 | -1.0 | |
| -2 | 0 | C3 | -1.0 | |
| mean | | | 0.7 | |
| ± S.D. | | | 2.9 | |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.003 | | 4.0 |
| 0.003 | | -1.0 |
| 0.001 | | -1.0 |
| 0.002 | | 0.7 |
| 0.001 | | 2.9 |

| 10 | compound no. | |
|--------|---------------|------|
| 11 | 6 | |
| 12 | concentration | |
| 13 | | 100% |
| 14 | | |
| 15 | | |
| mean | | |
| ± S.D. | | |

| | | | |
|--------|----|----|------|
| 47 | 50 | 49 | 48.7 |
| 51 | 54 | 54 | 53.0 |
| 52 | 55 | 55 | 54.0 |
| 50 | 53 | 53 | 52.0 |
| 60 | 63 | 63 | 62.0 |
| 56 | 59 | 58 | 57.7 |
| mean | | | 54.6 |
| ± S.D. | | | 4.7 |

| | | | | |
|--------|----|----|------|------|
| 43 | 46 | 46 | 45.0 | 44.3 |
| 46 | 49 | 49 | 48.0 | 47.3 |
| 50 | 52 | 52 | 51.3 | 50.7 |
| 47 | 50 | 50 | 49.0 | 48.3 |
| 53 | 56 | 56 | 55.0 | 54.3 |
| 48 | 51 | 51 | 50.0 | 49.3 |
| mean | | | 49.7 | 49.1 |
| ± S.D. | | | 3.4 | 3.4 |

| | | |
|-------|-------|------|
| 0.077 | 0.075 | 45.5 |
| 0.048 | 0.046 | 48.0 |
| 0.135 | 0.133 | 52.7 |
| 0.125 | 0.123 | 50.2 |
| 0.057 | 0.055 | 55.2 |
| 0.076 | 0.074 | 50.4 |
| 0.086 | 0.084 | 50.3 |
| 0.036 | 0.036 | 3.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 10 | compound no. | |
|--------|---------------|------|
| 11 | 6 | |
| 12 | concentration | |
| 13 | | 100% |
| 14 | | |
| 15 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 68 |
| 2 | B | 158 |
| | A | 152 |
| 3 | B | 254 |
| | A | 235 |

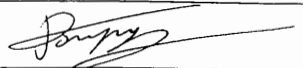
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. **09**

Date: 25 Jun 92
 Experiment no. 42
 Compound of the same pair no. 2 + 4

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|------|---------|
| C1 | 0 | 0 | 0.0 | |
| •-1 | C2 | 0 | -0.5 | |
| -1 | 0 | C3 | -0.5 | |
| | | | | -0.3 |
| | | | | 0.3 |

| Permeability (OD) | correc. | in-vitro score |
|-------------------|---------|----------------|
| 0.016 | | 0.2 |
| 0.023 | | -0.2 |
| 0.018 | | -0.2 |
| 0.019 | | -0.1 |
| 0.004 | | 0.3 |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 7 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 0 | 0 | 0 | 0.0 | 0.3 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| 0 | 0 | 0 | 0.0 | 0.3 |
| 0 | 1 | 1 | 0.7 | 1.0 |
| 0 | 0 | 1 | 0.3 | 0.7 |
| 1 | 1 | 1 | 1.0 | 1.3 |
| | | | | 0.3 |
| | | | | 0.7 |
| | | | | 0.4 |
| | | | | 0.4 |

| | | |
|-------|--------|-----|
| 0.014 | -0.005 | 0.3 |
| 0.006 | -0.012 | 0.1 |
| 0.003 | -0.015 | 0.1 |
| 0.011 | -0.007 | 0.9 |
| 0.024 | 0.005 | 0.7 |
| 0.006 | -0.013 | 1.1 |
| 0.011 | -0.008 | 0.5 |
| 0.008 | 0.008 | 0.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 7 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

pH: not enough compound for a determination.
 Compound no. 7 was washed away 4 times instead of 3 times.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -170 |
| 3 | B | 248 |
| | A | -259 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 20 Mar 92

Name: Ph. Vanparys

Experiment no. 7

Compound of the same pair no. 9


Signature:

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------------------------|----------------|
| | | C1 | | | | C1 | | | | | |
| 1 | MEM | C1 | 0 | -4 | -2.0 | C1 | -2 | -4 | -3.0 | 0.004 | -2.9 |
| 2 | | 0 | C2 | -4 | -2.0 | 1 | C2 | -2 | -0.5 | 0.002 | -0.5 |
| 3 | | 3 | 3 | C3 | 3.0 | 3 | 1 | C3 | 2.0 | 0.003 | 2.0 |
| mean | | | | | | | | | | 0.003 | -0.5 |
| ± S.D. | | | | | | | | | | 0.001 | 2.5 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score | | |
|---------|---------------|-------------------|---|----|------|--------------------|----|----|------|---------------------------|----------------|--------|-------|
| 4 | compound no. | 3 | 4 | 0 | 2.3 | 20 | 18 | 16 | 18.0 | 18.5 | 0.001 | -0.002 | 18.5 |
| 5 | 8 | 3 | 3 | 0 | 2.0 | 16 | 14 | 12 | 14.0 | 14.5 | 0.005 | 0.002 | 14.5 |
| 6 | concentration | 3 | 4 | 0 | 2.3 | 18 | 16 | 15 | 16.3 | 16.8 | 0.002 | -0.001 | 16.8 |
| 7 | | 0 | 1 | -2 | -0.3 | 20 | 18 | 16 | 18.0 | 18.5 | 0.048 | 0.045 | 19.2 |
| 8 | | 100% | 3 | 3 | 0 | 2.0 | 17 | 15 | 13 | 15.0 | 15.5 | 0.007 | 0.004 |
| 9 | | 1 | 2 | -1 | 0.7 | 17 | 14 | 13 | 14.7 | 15.2 | 0.003 | 0.000 | 15.2 |
| mean | | | | | 1.5 | | | | 16.0 | 16.5 | 0.011 | 0.008 | 16.6 |
| ± S.D. | | | | | 1.1 | | | | 1.7 | 1.7 | 0.018 | 0.018 | 1.9 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

→ 3 very small air-bubbles



| cor-nea | treatment |
|---------|---------------|
| 4 | compound no. |
| 5 | 8 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -152 |
| 3 | B | 254 |
| | A | -235 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 20 Mar 92

Name: Ph. Vanparys

Experiment no. 7

Compound of the same pair no. 8

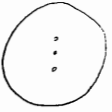
Signature:

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | In-vitro score |
|---------|-----------|-------------------|----|-----|------|--------------------|----|-----|-------|---------------------------|----------------|
| | | C1 | | | | C1 | | | | | |
| 1 | MEM | C1 | 0 | -4 | -2.0 | C1 | -2 | -4 | -3.0 | 0.004 | -2.9 |
| 2 | | 0 | C2 | -4 | -2.0 | • 1 | C2 | -2 | -0.5 | 0.002 | -0.5 |
| 3 | | 3 | 3 | C3 | 3.0 | 3 | 1 | C3 | 2.0 | 0.003 | 2.0 |
| mean | | | | | -0.3 | | | | -0.5 | 0.003 | -0.5 |
| ± S.D. | | | | 2.9 | | | | 2.5 | 0.001 | 2.5 | |

| 10 | compound no. | 21 | 21 | 18 | 20.0 | 21 | 19 | 17 | 19.0 | 19.5 | 0.216 | 0.213 | 22.7 | |
|--------|---------------|------|----|------|------|-----|----|------|------|-------|-------|-------|-------|------|
| 11 | 9 | 20 | 20 | 17 | 19.0 | 23 | 20 | 19 | 20.7 | 21.2 | 0.018 | 0.015 | 21.4 | |
| 12 | concentration | 21 | 22 | 18 | 20.3 | 22 | 20 | 18 | 20.0 | 20.5 | 0.008 | 0.005 | 20.6 | |
| 13 | | 16 | 16 | 12 | 14.7 | 14 | 12 | 10 | 12.0 | 12.5 | 0.114 | 0.111 | 14.2 | |
| 14 | | 100% | 8 | 8 | 4 | 6.7 | 12 | 10 | 8 | 10.0 | 10.5 | 0.026 | 0.023 | 10.8 |
| 15 | | 17 | 17 | 13 | 15.7 | 17 | 15 | 13 | 15.0 | 15.5 | 0.028 | 0.025 | 15.9 | |
| mean | | | | 16.1 | | | | 16.1 | 16.6 | 0.068 | 0.065 | 17.6 | | |
| ± S.D. | | | | 5.2 | | | | 4.5 | 4.5 | 0.082 | 0.082 | 4.7 | | |


| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

→ 3 very small air-bubbles



| 10 | compound no. |
|--------|---------------|
| 11 | 9 |
| 12 | concentration |
| 13 | |
| 14 | |
| 15 | |
| mean | |
| ± S.D. | |

→ small area which is not opaque



| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 152 |
| 3 | B | 254 |
| | A | 235 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

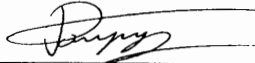
Lab. no. 09

Date: 26 Jun 92

Name: Ph. Vanparys

Experiment no. 43

Compound of the same pair no. 12 + 13

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| • 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | 0.0 | |
| | | | 0.0 | |

| Permeability (OD) | correc. | in-vitro score |
|-------------------|---------|----------------|
| 0.012 | | 0.2 |
| 0.010 | | 0.2 |
| 0.022 | | 0.3 |
| 0.015 | | 0.2 |
| 0.006 | | 0.1 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 10 |
| 6 | |
| 7 | concentration |
| 8 | 20% |
| 9 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 9 | 9 | 8 | 8.7 | 8.7 |
| 10 | 10 | 9 | 9.7 | 9.7 |
| 10 | 10 | 10 | 10.0 | 10.0 |
| 13 | 13 | 13 | 13.0 | 13.0 |
| 6 | 6 | 6 | 6.0 | 6.0 |
| 11 | 11 | 11 | 11.0 | 11.0 |
| | | | 9.7 | 9.7 |
| | | | 2.3 | 2.3 |

| | | |
|-------|-------|------|
| 0.027 | 0.012 | 8.9 |
| 0.019 | 0.004 | 9.7 |
| 0.030 | 0.015 | 10.2 |
| 0.026 | 0.011 | 13.2 |
| 0.037 | 0.022 | 6.3 |
| 0.020 | 0.006 | 11.1 |
| 0.026 | 0.012 | 9.9 |
| 0.007 | 0.007 | 2.3 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -262 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 10 |
| 6 | |
| 7 | concentration |
| 8 | 20% |
| 9 | |
| mean | |
| ± S.D. | |

pH: not enough compound for a pH determination.

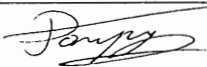
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 23 Mar 92
Experiment no. 8
Compound of the same pair no. 16

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|---------|----------------|
| | | C1 | | | | C1 | | | | correc. | correc. | |
| 1 | MEM | C1 | -1 | 0 | -0.5 | C1 | -3 | -2 | -2.5 | | -0.003 | -2.5 |
| 2 | | 0 | C2 | 0 | 0.0 | 2 | C2 | 0 | 1.0 | | -0.005 | 0.9 |
| 3 | | 0 | -1 | C3 | -0.5 | 1 | -1 | C3 | 0.0 | | -0.002 | 0.0 |
| mean | | | | | | | | | | | -0.003 | -0.6 |
| ± S.D. | | | | | | | | | | | 0.002 | 1.8 |

| cor-nea | treatment | compound no. | concentration | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | |
|---------|-----------|--------------|---------------|-------------------|----|----|-----|--------------------|------|-------|-------|-------------------|---------|----------------|------|
| | | | | C1 | | | | C1 | | | | correc. | correc. | | |
| 4 | MEM | 11 | 100% | 6 | 6 | 6 | 6.0 | 14 | 10 | 11 | 11.7 | 12.2 | 0.337 | 0.340 | 17.3 |
| 5 | | | | 5 | 4 | 5 | 4.7 | 15 | 12 | 13 | 13.3 | 13.8 | 0.529 | 0.532 | 21.8 |
| 6 | | | | 4 | 3 | 4 | 3.7 | 14 | 11 | 11 | 12.0 | 12.5 | 0.380 | 0.383 | 18.3 |
| 7 | | | | 5 | 4 | 5 | 4.7 | 14 | 11 | 12 | 12.3 | 12.8 | 0.783 | 0.786 | 24.6 |
| 8 | | | | 4 | 3 | 4 | 3.7 | 11 | 8 | 9 | 9.3 | 9.8 | 1.213 | 1.216 | 28.1 |
| 9 | 5 | 4 | 5 | 4.7 | 15 | 12 | 13 | 13.3 | 13.8 | 0.209 | 0.212 | 17.0 | | | |
| mean | | | | | | | | | | | 0.575 | 0.579 | 21.2 | | |
| ± S.D. | | | | | | | | | | | 0.369 | 0.369 | 4.5 | | |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| cor-nea | treatment | compound no. | concentration |
|---------|-----------|--------------|---------------|
| 4 | MEM | 11 | 100% |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| mean | | | |
| ± S.D. | | | |

rinsed 4 times instead off 3 times

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 168 |
| 3 | B | 253 |
| | A | 260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 26 Jun 92

Name: Ph. Vanparys

Experiment no. 43

Compound of the same pair no. 10 + 13

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | Permeability (OD) | | in-vitro score |
|--------------------|----|----|-----|---------|-------------------|--|----------------|
| | | | | correc. | correc. | | |
| C1 | 0 | 0 | 0.0 | | 0.012 | | 0.2 |
| • 0 | C2 | 0 | 0.0 | | 0.010 | | 0.2 |
| 0 | 0 | C3 | 0.0 | | 0.022 | | 0.3 |
| | | | 0.0 | | 0.015 | | 0.2 |
| | | | 0.0 | | 0.007 | | 0.1 |

| | | |
|--------|---------------|-----|
| 10 | compound no. | |
| 11 | 12 | |
| 12 | concentration | |
| 13 | | |
| 14 | | 20% |
| 15 | | |
| mean | | |
| ± S.D. | | |

| | | | | | | | |
|----|----|----|------|------|-------|--------|------|
| 0 | 0 | 0 | 0.0 | 0.0 | 0.010 | -0.005 | -0.1 |
| 0 | 0 | 0 | 0.0 | 0.0 | 0.011 | -0.004 | -0.1 |
| 0 | 0 | 0 | 0.0 | 0.0 | 0.008 | -0.006 | -0.1 |
| 0 | 0 | 0 | 0.0 | 0.0 | 0.016 | 0.001 | 0.0 |
| 0 | 0 | 0 | 0.0 | 0.0 | 0.010 | -0.005 | -0.1 |
| -1 | -1 | -1 | -1.0 | -1.0 | 0.011 | -0.004 | -1.1 |
| | | | -0.2 | -0.2 | 0.011 | -0.004 | -0.2 |
| | | | 0.4 | 0.4 | 0.002 | 0.002 | 0.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -262 |

| | | |
|--------|---------------|-----|
| 10 | compound no. | |
| 11 | 12 | |
| 12 | concentration | |
| 13 | | |
| 14 | | 20% |
| 15 | | |
| mean | | |
| ± S.D. | | |

pH: 6.84

Compound No.12 was washed away 4 times instead of 3 times.

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. **09**

Date: 26 Jun 92
 Experiment no. 43
 Compound of the same pair no. 10 + 12

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | correc. |
|--------------------|----|----|-----|-----|---------|
| C1 | 0 | 0 | 0.0 | | |
| 0 | C2 | 0 | 0.0 | | |
| 0 | 0 | C3 | 0.0 | | |
| | | | | 0.0 | |
| | | | | 0.0 | |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.012 | | 0.2 |
| 0.010 | | 0.2 |
| 0.022 | | 0.3 |
| 0.015 | | 0.2 |
| 0.006 | | 0.1 |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 13 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 7 | 7 | 6 | 6.7 | 6.7 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| 5 | 5 | 5 | 5.0 | 5.0 |
| 2 | 2 | 1 | 1.7 | 1.7 |
| 3 | 3 | 3 | 3.0 | 3.0 |
| | | | 3.1 | 3.1 |
| | | | 2.3 | 2.3 |

| | | |
|-------|-------|-----|
| 0.030 | 0.015 | 6.9 |
| 0.041 | 0.026 | 1.4 |
| 0.041 | 0.027 | 1.4 |
| 0.034 | 0.020 | 5.3 |
| 0.070 | 0.055 | 2.5 |
| 0.043 | 0.029 | 3.4 |
| 0.043 | 0.029 | 3.5 |
| 0.014 | 0.014 | 2.2 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 13 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

pH: 8.24

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 170 |
| 3 | B | 250 |
| | A | 262 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet


Lab. no. 09

Date: 27 Apr 92

Name: Ph. Vanparys

Experiment no. 22

Compound of the same pair no. 15

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | correc. |
|--------------------|----|----|------|--|---------|
| C1 | 0 | 2 | 1.0 | | |
| 0 | C2 | 1 | 0.5 | | |
| -3 | -2 | C3 | -2.5 | | |
| | | | -0.3 | | |
| | | | 1.9 | | |

| Permeability (OD) | | In-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.016 | | 1.2 |
| 0.014 | | 0.7 |
| 0.015 | | -2.3 |
| 0.015 | | -0.1 |
| 0.001 | | 1.9 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 14 |
| 6 | |
| 7 | concentration |
| 8 | 20% |
| 9 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|---|---|-----|-----|
| -1 | 0 | 1 | 0.0 | 0.3 |
| 0 | 0 | 2 | 0.7 | 1.0 |
| 1 | 1 | 4 | 2.0 | 2.3 |
| 0 | 1 | 3 | 1.3 | 1.7 |
| 1 | 1 | 3 | 1.7 | 2.0 |
| 1 | 2 | 4 | 2.3 | 2.7 |
| | | | 1.3 | 1.7 |
| | | | 0.9 | 0.9 |

| | | |
|-------|-------|-----|
| 0.106 | 0.092 | 1.7 |
| 0.042 | 0.028 | 1.4 |
| 0.122 | 0.108 | 3.9 |
| 0.143 | 0.128 | 3.6 |
| 0.164 | 0.150 | 4.2 |
| 0.129 | 0.115 | 4.4 |
| 0.118 | 0.103 | 3.2 |
| 0.042 | 0.042 | 1.3 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 14 |
| 6 | |
| 7 | concentration |
| 8 | 20% |
| 9 | |
| mean | |
| ± S.D. | |

Compound 14 was warmed up to 32°C and stirred on a magnetic stirrer.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -168 |
| 3 | B | 248 |
| | A | -257 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

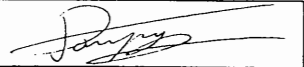
Lab. no. 09

Date: 27 Apr 92

Name: Ph. Vanparys

Experiment no. 22

Compound of the same pair no. 14

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|------|---------|
| C1 | 0 | 2 | 1.0 | |
| 0 | C2 | 1 | 0.5 | |
| -3 | -2 | C3 | -2.5 | |
| | | | | -0.3 |
| | | | | 1.9 |

| Permeability (OD) | correc. | In-vitro score |
|-------------------|---------|----------------|
| 0.016 | | |
| 0.014 | | |
| 0.015 | | |
| 0.015 | | |
| 0.001 | | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 15 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|---|------|------|
| -1 | 0 | 1 | 0.0 | 0.3 |
| -2 | -1 | 0 | -1.0 | -0.7 |
| -1 | 0 | 1 | 0.0 | 0.3 |
| -2 | -1 | 0 | -1.0 | -0.7 |
| -1 | 0 | 1 | 0.0 | 0.3 |
| -2 | -1 | 0 | -1.0 | -0.7 |
| | | | | -0.5 |
| | | | | -0.2 |
| | | | | 0.5 |
| | | | | 0.5 |

| | | |
|-------|--------|------|
| 0.011 | -0.004 | 0.3 |
| 0.018 | 0.003 | -0.6 |
| 0.003 | -0.012 | 0.2 |
| 0.010 | -0.005 | -0.7 |
| 0.008 | -0.006 | 0.2 |
| 0.006 | -0.008 | -0.8 |
| 0.009 | -0.005 | -0.2 |
| 0.005 | 0.005 | 0.5 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 15 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

Compound 15 was warmed up to 32°C and stirred on a magnetic stirrer.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -168 |
| 3 | B | 248 |
| | A | -257 |

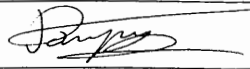
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Name: Ph. Vanparys

Date: 23 Mar 92
Experiment no. 8
Compound of the same pair no. 11

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | correc. | Permeability (OD) | | In-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------|-------------------|--|----------------|
| | | C1 | -1 | 0 | -0.5 | C1 | -3 | -2 | -2.5 | | correc. | | |
| 1 | MEM | C1 | -1 | 0 | -0.5 | C1 | -3 | -2 | -2.5 | | -0.003 | | -2.5 |
| 2 | | 0 | C2 | 0 | 0.0 | 2 | C2 | 0 | 1.0 | | -0.005 | | 0.9 |
| 3 | | 0 | -1 | C3 | -0.5 | 1 | -1 | C3 | 0.0 | | -0.002 | | 0.0 |
| mean | | | | | | | | | | | -0.003 | | -0.6 |
| ± S.D. | | | | | | | | | | | 0.002 | | 1.8 |

| 10 | compound no. | 1 | 0 | 0 | 0.3 | 5 | 1 | 2 | 2.7 | 3.2 | 0.003 | 0.006 | 3.3 |
|--------|---------------|------|----|---|------|-----|----|----|------|------|-------|-------|-------|
| | | | | | | | | | | | | | |
| 12 | concentration | 3 | 2 | 3 | 2.7 | 5 | 2 | 3 | 3.3 | 3.8 | 0.032 | 0.035 | 4.4 |
| 13 | | 0 | 0 | 0 | 0.0 | 4 | 0 | 1 | 1.7 | 2.2 | 0.005 | 0.008 | 2.3 |
| 14 | | 100% | 2 | 1 | 1 | 1.3 | 4 | 1 | 2 | 2.3 | 2.8 | 0.003 | 0.006 |
| 15 | | 0 | -1 | 0 | -0.3 | 0 | -3 | -2 | -1.7 | -1.2 | 0.009 | 0.012 | -1.0 |
| mean | | | | | 0.7 | | | | 1.4 | 1.9 | 0.012 | 0.015 | 2.1 |
| ± S.D. | | | | | 1.1 | | | | 1.9 | 1.9 | 0.011 | 0.011 | 1.9 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 10 | compound no. | |
|--------|---------------|------|
| 11 | 16 | |
| 12 | concentration | |
| 13 | | |
| 14 | | 100% |
| 15 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -168 |
| 3 | B | 253 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

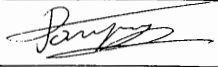
Lab. no. 09

Date: 26 Mar 92

Name: Ph. Vanparys

Experiment no. 9

Compound of the same pair no. 19

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|
| | | C1 | | | | C1 | | | | correc. | | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | -1 | 0 | -0.5 | | 0.000 | -0.5 |
| 2 | | 0 | C2 | 1 | 0.5 | 1 | C2 | 2 | 1.5 | | 0.005 | 1.6 |
| 3 | | 0 | -1 | C3 | -0.5 | 0 | -2 | C3 | -1.0 | | 0.038 | -0.4 |
| mean | | | | | 0.0 | | | | 0.0 | | 0.014 | 0.2 |
| ± S.D. | | | | | 0.5 | | | | 1.3 | | 0.021 | 1.2 |

| 4 | compound no. | 31 | 31 | 32 | 31.3 | 35 | 34 | 36 | 35.0 | 35.0 | 0.394 | 0.380 | 40.7 |
|--------|---------------|------|----|----|------|------|----|----|------|------|-------|-------|-------|
| 5 | 17 | 32 | 31 | 32 | 31.7 | 34 | 32 | 34 | 33.3 | 33.3 | 0.520 | 0.506 | 40.9 |
| 6 | concentration | 27 | 26 | 28 | 27.0 | 31 | 30 | 32 | 31.0 | 31.0 | 0.305 | 0.291 | 35.4 |
| 7 | | 32 | 31 | 32 | 31.7 | 32 | 30 | 33 | 31.7 | 31.7 | 0.761 | 0.747 | 42.9 |
| 8 | | 100% | 39 | 38 | 40 | 39.0 | 40 | 38 | 41 | 39.7 | 39.7 | 0.735 | 0.721 |
| 9 | | 33 | 32 | 34 | 33.0 | 35 | 33 | 36 | 34.7 | 34.7 | 0.340 | 0.326 | 39.6 |
| mean | | | | | 32.3 | | | | 34.2 | 34.2 | 0.509 | 0.495 | 41.6 |
| ± S.D. | | | | | 3.9 | | | | 3.1 | 3.1 | 0.199 | 0.199 | 5.0 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 4 | compound no. | |
|--------|---------------|------|
| 5 | 17 | |
| 6 | concentration | |
| 7 | | |
| 8 | | 100% |
| 9 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -166 |
| 3 | B | 244 |
| | A | -254 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

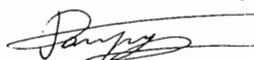
Lab. no. 09

Date: 07 May 92

Name: Ph. Vanparys

Experiment no. 25

Compound of the same pair no. 20 + 21

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | | 0.0 |
| | | | | 0.0 |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.021 | | 0.3 |
| 0.012 | | 0.2 |
| 0.010 | | 0.1 |
| 0.014 | | 0.2 |
| 0.006 | | 0.1 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 18 |
| 6 | |
| 7 | concentration |
| 8 | 20% |
| 9 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 24 | 24 | 24 | 24.0 | 24.0 |
| 21 | 21 | 21 | 21.0 | 21.0 |
| 15 | 16 | 15 | 15.3 | 15.3 |
| 12 | 12 | 11 | 11.7 | 11.7 |
| 22 | 22 | 22 | 22.0 | 22.0 |
| 22 | 22 | 22 | 22.0 | 22.0 |
| | | | 19.3 | 19.3 |
| | | | 4.8 | 4.8 |

| | | |
|-------|--------|------|
| 0.004 | -0.011 | 23.8 |
| 0.000 | -0.014 | 20.8 |
| 0.003 | -0.011 | 15.2 |
| 0.011 | -0.003 | 11.6 |
| 0.002 | -0.012 | 21.8 |
| 0.006 | -0.008 | 21.9 |
| 0.004 | -0.010 | 19.2 |
| 0.004 | 0.004 | 4.7 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 170 |
| 3 | B | 250 |
| | A | 260 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 18 |
| 6 | |
| 7 | concentration |
| 8 | 20% |
| 9 | |
| mean | |
| ± S.D. | |

Compound 18 was warmed up to 32 °C and stirred on a magnetic stirrer.


EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 26 Mar 92
Experiment no. 9
Compound of the same pair no. 17

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|
| | | C1 | | | | | | | | correc. | | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | -1 | 0 | -0.5 | | 0.000 | -0.5 |
| 2 | | 0 | C2 | 1 | 0.5 | 1 | C2 | 2 | 1.5 | | 0.005 | 1.6 |
| 3 | | 0 | -1 | C3 | -0.5 | 0 | -2 | C3 | -1.0 | | 0.038 | -0.4 |
| mean | | | | | 0.0 | | | | 0.0 | | 0.014 | 0.2 |
| ± S.D. | | | | | 0.5 | | | | 1.3 | | 0.021 | 1.2 |

| | compound no. | 18 | 17 | 19 | 18.0 | 24 | 23 | 25 | 24.0 | 24.0 | 1.900 | 1.886 | 52.3 |
|--------|---------------|----|----|----|------|----|----|----|------|------|-------|-------|------|
| 10 | 19 | 17 | 16 | 18 | 17.0 | 23 | 21 | 24 | 22.7 | 22.7 | 2.288 | 2.274 | 56.8 |
| 11 | | 15 | 14 | 15 | 14.7 | 20 | 18 | 21 | 19.7 | 19.7 | 1.829 | 1.815 | 46.9 |
| 12 | | 13 | 13 | 14 | 13.3 | 20 | 18 | 20 | 19.3 | 19.3 | 1.785 | 1.771 | 45.9 |
| 13 | | 16 | 15 | 16 | 15.7 | 21 | 20 | 22 | 21.0 | 21.0 | 1.944 | 1.930 | 49.9 |
| 14 | | 13 | 12 | 13 | 12.7 | 17 | 16 | 18 | 17.0 | 17.0 | 2.157 | 2.143 | 49.1 |
| 15 | concentration | | | | | | | | | | | | |
| mean | 100% | | | | 15.2 | | | | 20.6 | 20.6 | 1.984 | 1.970 | 50.2 |
| ± S.D. | | | | | 2.1 | | | | 2.5 | 2.5 | 0.197 | 0.197 | 4.0 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. | |
|--------|--------------|---------------|
| 10 | 19 | |
| 11 | | |
| 12 | | |
| 13 | | concentration |
| 14 | | 100% |
| 15 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -166 |
| 3 | B | 244 |
| | A | -254 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

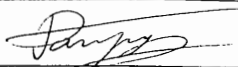
Lab. no. 09

Date: 07 May 92

Name: Ph. Vanparys

Experiment no. 25

Compound of the same pair no. 18 + 21

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | 0.0 | |
| | | | 0.0 | |

| Permeability (OD) | correc. | In-vitro score |
|-------------------|---------|----------------|
| 0.021 | | 0.3 |
| 0.012 | | 0.2 |
| 0.010 | | 0.1 |
| 0.014 | | 0.2 |
| 0.006 | | 0.1 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 20 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 43 | 41 | 41 | 41.7 | 41.7 |
| 33 | 33 | 32 | 32.7 | 32.7 |
| 28 | 28 | 27 | 27.7 | 27.7 |
| 52 | 53 | 51 | 52.0 | 52.0 |
| 37 | 37 | 36 | 36.7 | 36.7 |
| 51 | 52 | 51 | 51.3 | 51.3 |
| | | | 40.3 | 40.3 |
| | | | 9.9 | 9.9 |

| | | |
|-------|-------|------|
| 2.110 | 2.096 | 73.1 |
| 1.430 | 1.416 | 53.9 |
| 1.427 | 1.412 | 48.9 |
| 1.400 | 1.386 | 72.8 |
| 1.694 | 1.680 | 61.9 |
| 1.612 | 1.597 | 75.3 |
| 1.612 | 1.598 | 64.3 |
| 0.271 | 0.271 | 11.2 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 20 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

Compound 20 was warmed up to 32 °C en stirred on a magnetic stirrer.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -260 |

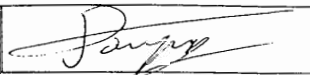
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. **09**

Date: 18 Jun 92
 Experiment no. 40
 Compound of the same pair no. 14 + 22

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|------|---------|
| C1 | 0 | 0 | 0.0 | |
| -1 | C2 | 0 | -0.5 | |
| 0 | 0 | C3 | 0.0 | |
| | | | | -0.2 |
| | | | | 0.3 |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.025 | | 0.4 |
| 0.019 | | -0.2 |
| 0.018 | | 0.3 |
| 0.020 | | 0.1 |
| 0.004 | | 0.3 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 21 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 10 | 12 | 12 | 11.3 | 11.5 |
| 10 | 12 | 12 | 11.3 | 11.5 |
| 9 | 10 | 10 | 9.7 | 9.8 |
| 10 | 12 | 11 | 11.0 | 11.2 |
| 9 | 10 | 10 | 9.7 | 9.8 |
| 12 | 13 | 12 | 12.3 | 12.5 |
| | | | 10.9 | 11.1 |
| | | | 1.0 | 1.0 |

| | | |
|-------|-------|------|
| 0.176 | 0.156 | 13.8 |
| 0.113 | 0.093 | 12.9 |
| 0.131 | 0.110 | 11.5 |
| 0.134 | 0.114 | 12.9 |
| 0.165 | 0.145 | 12.0 |
| 0.258 | 0.237 | 16.1 |
| 0.163 | 0.143 | 13.2 |
| 0.052 | 0.052 | 1.6 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 21 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

pH: 7.41
 Compound No. 21 was washed away 4 times instead of 3 times.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -170 |
| 3 | B | 249 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

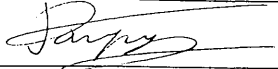
Lab. no. 09

Date: 18 Jun 92

Name: Ph. Vanparys

Experiment no. 40

Compound of the same pair no. 14 + 21

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | correc. | Permeability (OD) | | in-vitro score |
|--------------------|----|----|------|--|---------|-------------------|--|----------------|
| | | | | | | correc. | | |
| C1 | 0 | 0 | 0.0 | | | 0.025 | | 0.4 |
| -1 | C2 | 0 | -0.5 | | | 0.019 | | -0.2 |
| 0 | 0 | C3 | 0.0 | | | 0.018 | | 0.3 |
| | | | -0.2 | | | 0.020 | | 0.1 |
| | | | 0.3 | | | 0.004 | | 0.3 |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 22 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

| | | | | | | | |
|----|----|----|------|------|-------|-------|------|
| 8 | 10 | 9 | 9.0 | 9.2 | 0.113 | 0.093 | 10.6 |
| 10 | 11 | 11 | 10.7 | 10.8 | 0.076 | 0.056 | 11.7 |
| 12 | 12 | 12 | 12.0 | 12.2 | 0.086 | 0.065 | 13.1 |
| 10 | 11 | 11 | 10.7 | 10.8 | 0.059 | 0.039 | 11.4 |
| 12 | 13 | 13 | 12.7 | 12.8 | 0.104 | 0.083 | 14.1 |
| 9 | 9 | 10 | 9.3 | 9.5 | 0.546 | 0.526 | 17.4 |
| | | | 10.7 | 10.9 | 0.164 | 0.144 | 13.0 |
| | | | 1.4 | 1.4 | 0.188 | 0.188 | 2.5 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 170 |
| 3 | B | 249 |
| | A | 260 |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 22 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

pH: 7.88


EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 08 May 92
Experiment no. 26
Compound of the same pair no. 22 + 26

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | Permeability (OD) | | in-vitro score |
|--------------------|----|----|-----|-----|-------------------|--|----------------|
| | | | | | correc. | | |
| C1 | 0 | 0 | 0.0 | | 0.017 | | 0.3 |
| 0 | C2 | 0 | 0.0 | | 0.031 | | 0.5 |
| 0 | 0 | C3 | 0.0 | | 0.012 | | 0.2 |
| | | | | 0.0 | 0.020 | | 0.3 |
| | | | | 0.0 | 0.010 | | 0.1 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 23 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | | | | |
|----|----|----|------|------|-------|-------|------|
| 87 | 89 | 90 | 88.7 | 88.7 | 0.192 | 0.171 | 91.2 |
| 85 | 87 | 88 | 86.7 | 86.7 | 0.201 | 0.181 | 89.4 |
| 76 | 78 | 80 | 78.0 | 78.0 | 0.163 | 0.143 | 80.1 |
| 77 | 79 | 80 | 78.7 | 78.7 | 0.230 | 0.210 | 81.8 |
| 85 | 87 | 92 | 88.0 | 88.0 | 0.120 | 0.100 | 89.5 |
| 89 | 91 | 94 | 91.3 | 91.3 | 0.138 | 0.118 | 93.1 |
| | | | 85.2 | 85.2 | 0.174 | 0.154 | 87.5 |
| | | | 5.6 | 5.6 | 0.041 | 0.041 | 5.3 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

Fluorescein leakage into the waterbath

O.D. versus C1
 measured 8 min. after
 first measurement.

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 23 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

Compound No. 23 was warmed up to 32°C
 and stirred on a magnetic stirrer.

106
 101
 92
 91
 107
 104

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 171 |
| 3 | B | 251 |
| | A | 260 |

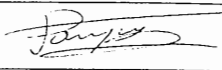
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 27 Mar 92
Experiment no. 10
Compound of the same pair no. 25

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|-----|------|--------------------|----|-----|------|-------------------|-----|----------------|
| | | C1 | 1 | 2 | 1.5 | C1 | 1 | 1 | 1.0 | correc. | | |
| 1 | MEM | C1 | 1 | 2 | 1.5 | C1 | 1 | 1 | 1.0 | | | 1.1 |
| 2 | | -1 | C2 | 1 | 0.0 | -2 | C2 | 0 | -1.0 | | | -1.0 |
| 3 | | -2 | 0 | C3 | -1.0 | -2 | 0 | C3 | -1.0 | | | -0.9 |
| mean | | | | | 0.2 | | | | -0.3 | | | -0.3 |
| ± S.D. | | | | 1.3 | | | | 1.2 | | | 1.2 | |
| | | | | | | | | | | 0.005 | | |
| | | | | | | | | | | 0.001 | | |
| | | | | | | | | | | 0.004 | | |
| | | | | | | | | | | 0.003 | | |
| | | | | | | | | | | 0.002 | | |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | | |
|---------|---------------|-------------------|----|------|------|--------------------|----|------|------|-------------------|-------|----------------|-------|------|
| | | C1 | 1 | 2 | 1.5 | C1 | 1 | 1 | 1.0 | correc. | | | | |
| 4 | compound no. | 49 | 51 | 52 | 50.7 | 47 | 49 | 49 | 48.3 | 48.7 | 0.882 | 0.879 | 61.8 | |
| 5 | 24 | 40 | 42 | 43 | 41.7 | 38 | 40 | 40 | 39.3 | 39.7 | 0.688 | 0.685 | 49.9 | |
| 6 | concentration | 52 | 53 | 55 | 53.3 | 51 | 53 | 53 | 52.3 | 52.7 | 0.754 | 0.751 | 63.9 | |
| 7 | | 36 | 38 | 39 | 37.7 | 36 | 38 | 38 | 37.3 | 37.7 | 0.735 | 0.732 | 48.6 | |
| 8 | | 100% | 56 | 58 | 59 | 57.7 | 51 | 53 | 53 | 52.3 | 52.7 | 1.047 | 1.044 | 68.3 |
| 9 | | 37 | 39 | 40 | 38.7 | 37 | 40 | 39 | 38.7 | 39.0 | 0.716 | 0.713 | 49.7 | |
| mean | | | | 46.6 | | | | 44.7 | 45.1 | 0.804 | 0.800 | 57.1 | | |
| ± S.D. | | | | 8.4 | | | | 7.1 | 7.1 | 0.137 | 0.137 | 8.6 | | |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| cor-nea | treatment |
|---------|---------------|
| 4 | compound no. |
| 5 | 24 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -166 |
| 3 | B | 249 |
| | A | -255 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 27 Mar 92
Experiment no. 10
Compound of the same pair no. 24

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|--|----------------|
| | | C1 | 1 | 2 | 1.5 | C1 | 1 | 1 | 1.0 | correc. | | |
| 1 | MEM | C1 | 1 | 2 | 1.5 | C1 | 1 | 1 | 1.0 | 0.005 | | 1.1 |
| 2 | | -1 | C2 | 1 | 0.0 | -2 | C2 | 0 | -1.0 | 0.001 | | -1.0 |
| 3 | | -2 | 0 | C3 | -1.0 | -2 | 0 | C3 | -1.0 | 0.004 | | -0.9 |
| mean | | | | | 0.2 | | | | -0.3 | 0.003 | | -0.3 |
| ± S.D. | | | | | 1.3 | | | | 1.2 | 0.002 | | 1.2 |

| 10 | compound no. | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | |
|--------|---------------|-------------------|----|----|------|--------------------|---|---|-----|-------------------|-------|----------------|-------|
| | | 10 | 11 | 12 | 11.0 | 5 | 7 | 7 | 6.3 | 6.7 | 0.221 | | 0.218 |
| 11 | 25 | 5 | 7 | 7 | 6.3 | 4 | 6 | 5 | 5.0 | 5.3 | 0.162 | 0.159 | 7.7 |
| 12 | concentration | 10 | 12 | 12 | 11.3 | 7 | 9 | 9 | 8.3 | 8.7 | 0.199 | 0.196 | 11.6 |
| 13 | | 4 | 5 | 6 | 5.0 | 2 | 5 | 4 | 3.7 | 4.0 | 0.294 | 0.291 | 8.4 |
| 14 | | 100% | 8 | 10 | 11 | 9.7 | 4 | 6 | 6 | 5.3 | 5.7 | 0.233 | 0.230 |
| 15 | | 8 | 9 | 10 | 9.0 | 6 | 8 | 8 | 7.3 | 7.7 | 0.137 | 0.134 | 9.7 |
| mean | | | | | 8.7 | | | | 6.0 | 6.3 | 0.208 | 0.204 | 9.4 |
| ± S.D. | | | | | 2.6 | | | | 1.7 | 1.7 | 0.056 | 0.056 | 1.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 10 | compound no. | |
|--------|---------------|------|
| 11 | 25 | |
| 12 | concentration | |
| 13 | | |
| 14 | | 100% |
| 15 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 166 |
| 3 | B | 249 |
| | A | 255 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

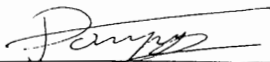
Lab. no. 09

Date: 08 May 92

Name: Ph. Vanparys

Experiment no. 26

Compound of the same pair no. 22 + 23

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | | 0.0 |
| | | | | 0.0 |

| Permeability (OD) | correc. | In-vitro score |
|-------------------|---------|----------------|
| correc. | | |
| 0.017 | | 0.3 |
| 0.031 | | 0.5 |
| 0.012 | | 0.2 |
| 0.020 | | 0.3 |
| 0.010 | | 0.1 |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 26 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 1 | 1 | 1 | 1.0 | 1.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| | | | 0.5 | 0.5 |
| | | | 0.5 | 0.5 |

| | | |
|-------|-------|-----|
| 0.040 | 0.020 | 1.3 |
| 0.035 | 0.015 | 0.2 |
| 0.044 | 0.023 | 0.4 |
| 0.032 | 0.012 | 1.2 |
| 0.035 | 0.015 | 0.2 |
| 0.035 | 0.014 | 1.2 |
| 0.037 | 0.016 | 0.7 |
| 0.004 | 0.004 | 0.5 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

Fluorescein leakage into the waterbath.

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 26 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

Compound No. 26 was warmed up to 32°C and stirred on a magnetic stirrer.
Anterior chambers were opened for treatment and washing.
Glass of the anterior chamber No. 17 was found to be cracked at the end of the fluorescein incubation period.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 171 |
| 3 | B | 251 |
| | A | 260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

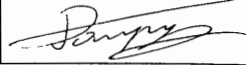
Lab. no. 09

Date: 11 May 92

Name: Ph. Vanparys

Experiment no. 27

Compound of the same pair no. 28 + 31

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | 0.0 | |
| | | | 0.0 | |

| Permeability (OD) | correc. | in-vitro score |
|-------------------|---------|----------------|
| 0.013 | | 0.2 |
| 0.020 | | 0.3 |
| 0.010 | | 0.2 |
| 0.014 | | 0.2 |
| 0.005 | | 0.1 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 27 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 8 | 8 | 8 | 8.0 | 8.0 |
| 4 | 4 | 4 | 4.0 | 4.0 |
| 6 | 6 | 7 | 6.3 | 6.3 |
| 4 | 4 | 4 | 4.0 | 4.0 |
| 4 | 5 | 5 | 4.7 | 4.7 |
| 4 | 4 | 4 | 4.0 | 4.0 |
| | | | 5.2 | 5.2 |
| | | | 1.7 | 1.7 |

| | | |
|-------|-------|-----|
| 0.023 | 0.008 | 8.1 |
| 0.183 | 0.169 | 6.5 |
| 0.077 | 0.063 | 7.3 |
| 0.028 | 0.014 | 4.2 |
| 0.103 | 0.089 | 6.0 |
| 0.067 | 0.053 | 4.8 |
| 0.080 | 0.066 | 6.2 |
| 0.059 | 0.059 | 1.5 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

Glass of the anterior chamber No. 3 was found to be cracked at the end of the fluorescein incubation period.

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 27 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | |
| mean | |
| ± S.D. | |

Fluorescein leakage from chamber No. 5.
Compound No. 27 was warmed up to 32°C and stirred on a magnetic stirrer.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -171 |
| 3 | B | 249 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

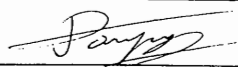
Lab. no. **09**

Date: 11 May 92

Name: Ph. Vanparys

Experiment no. 27

Compound of the same pair no. 27 + 31

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | correc. |
|--------------------|----|----|-----|-----|---------|
| C1 | 0 | 0 | 0.0 | | |
| 0 | C2 | 0 | 0.0 | | |
| 0 | 0 | C3 | 0.0 | | |
| | | | | 0.0 | |
| | | | | 0.0 | |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.013 | | 0.2 |
| 0.020 | | 0.3 |
| 0.010 | | 0.2 |
| 0.014 | | 0.2 |
| 0.005 | | 0.1 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 28 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 0 | 0 | 0 | 0.0 | 0.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| 0 | 0 | 0 | 0.0 | 0.0 |
| | | | | 0.2 |
| | | | | 0.2 |
| | | | | 0.4 |
| | | | | 0.4 |

| | | |
|-------|--------|------|
| 0.016 | 0.002 | 0.0 |
| 0.017 | 0.002 | 0.0 |
| 0.012 | -0.002 | 0.0 |
| 0.012 | -0.003 | 0.0 |
| 0.015 | 0.001 | 1.0 |
| 0.010 | -0.004 | -0.1 |
| 0.014 | -0.001 | 0.2 |
| 0.003 | 0.003 | 0.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

Glass of the anterior chamber No. 3 was found to be cracked at the end of the fluorescein incubation period.

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 28 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

Compound No. 28 was warmed up to 32°C and stirred on a magnetic stirrer

Fluorescein leakage from chamber No.13.

Compound No. 28 was washed away 6 times instead of 3 times

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -171 |
| 3 | B | 249 |
| | A | -260 |


EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 30 Mar 92
Experiment no. 11
Compound of the same pair no. 30

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|---------|----------------|
| | | C1 | -2 | -3 | -2.5 | C1 | -2 | -4 | -3.0 | correc. | correc. | |
| 1 | MEM | C1 | -2 | -3 | -2.5 | C1 | -2 | -4 | -3.0 | | 0.003 | -3.0 |
| 2 | | C2 | 0 | | 1.0 | 1 | C2 | -2 | -0.5 | | 0.002 | -0.5 |
| 3 | | 3 | 0 | C3 | 1.5 | 3 | 1 | C3 | 2.0 | | 0.003 | 2.0 |
| mean | | | | | 0.0 | | | | -0.5 | | 0.003 | -0.5 |
| ±S.D. | | | | | 2.2 | | | | 2.5 | | 0.001 | 2.5 |

| 4 | compound no. | 26 | 24 | 23 | 24.3 | 20 | 19 | 17 | 18.7 | 19.2 | 2.585 | 2.582 | 57.9 |
|-------|---------------|------|----|----|------|------|----|----|------|------|-------|-------|-------|
| 5 | 29 | 28 | 25 | 24 | 25.7 | 34 | 32 | 30 | 32.0 | 32.5 | 1.949 | 1.946 | 61.7 |
| 6 | concentration | 24 | 22 | 21 | 22.3 | 29 | 28 | 26 | 27.7 | 28.2 | 2.268 | 2.265 | 62.1 |
| 7 | | 23 | 21 | 20 | 21.3 | 32 | 31 | 29 | 30.7 | 31.2 | 2.688 | 2.685 | 71.4 |
| 8 | | 100% | 22 | 20 | 19 | 20.3 | 32 | 30 | 28 | 30.0 | 30.5 | 2.094 | 2.091 |
| 9 | | 22 | 20 | 19 | 20.3 | 26 | 24 | 23 | 24.3 | 24.8 | 1.703 | 1.700 | 50.3 |
| mean | | | | | 22.4 | | | | 27.2 | 27.7 | 2.215 | 2.212 | 60.9 |
| ±S.D. | | | | | 2.2 | | | | 5.0 | 5.0 | 0.377 | 0.377 | 6.9 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ±S.D. | |

| 4 | compound no. | |
|-------|---------------|------|
| 5 | 29 | |
| 6 | concentration | |
| 7 | | |
| 8 | | 100% |
| 9 | | |
| mean | | |
| ±S.D. | | |

the anterior compartment was rinsed 5-times instead of 3-times

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 157 |
| | A | 166 |
| 3 | B | 247 |
| | A | 256 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet


Lab. no. 09

Date: 30 Mar 92

Name: Ph. Vanparys

Experiment no. 11

Compound of the same pair no. 29

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|-----|------|--------------------|----|-----|-------|---------------------------|----------------|
| | | C1 | -2 | -3 | -2.5 | C1 | -2 | -4 | -3.0 | | |
| 1 | MEM | C1 | -2 | -3 | -2.5 | C1 | -2 | -4 | -3.0 | 0.003 | -3.0 |
| 2 | | 2 | C2 | 0 | 1.0 | 1 | C2 | -2 | -0.5 | 0.002 | -0.5 |
| 3 | | 3 | 0 | C3 | 1.5 | 3 | 1 | C3 | 2.0 | 0.003 | 2.0 |
| mean | | | | | 0.0 | | | | -0.5 | 0.003 | -0.5 |
| ± S.D. | | | | 2.2 | | | | 2.5 | 0.001 | 2.5 | |

| | compound no. | 13 | 11 | 10 | 11.3 | 13 | 11 | 9 | 11.0 | 11.5 | 0.507 | 0.504 | 19.1 | |
|--------|---------------|------|----|------|------|------|----|------|------|-------|-------|-------|-------|------|
| 10 | 30 | 13 | 11 | 10 | 11.3 | 13 | 11 | 9 | 11.0 | 11.5 | 0.507 | 0.504 | 19.1 | |
| 11 | | 13 | 11 | 10 | 11.3 | 16 | 14 | 12 | 14.0 | 14.5 | 0.398 | 0.395 | 20.4 | |
| 12 | concentration | 11 | 9 | 8 | 9.3 | 10 | 8 | 6 | 8.0 | 8.5 | 0.362 | 0.359 | 13.9 | |
| 13 | | 11 | 9 | 8 | 9.3 | 9 | 7 | 5 | 7.0 | 7.5 | 0.943 | 0.940 | 21.6 | |
| 14 | | 100% | 13 | 10 | 10 | 11.0 | 15 | 13 | 11 | 13.0 | 13.5 | 0.338 | 0.335 | 18.5 |
| 15 | | 13 | 10 | 10 | 11.0 | 13 | 11 | 9 | 11.0 | 11.5 | 0.743 | 0.740 | 22.6 | |
| mean | | | | 10.6 | | | | 10.7 | 11.2 | 0.549 | 0.546 | 19.4 | | |
| ± S.D. | | | | 1.0 | | | | 2.7 | 2.7 | 0.244 | 0.244 | 3.1 | | |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. | |
|--------|---------------|------|
| 10 | 30 | |
| 11 | | |
| 12 | concentration | |
| 13 | | |
| 14 | | 100% |
| 15 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 157 |
| | A | 166 |
| 3 | B | 247 |
| | A | 256 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

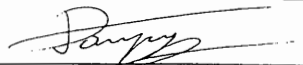
Lab. no. 09

Date: 11 May 92

Name: Ph. Vanparys

Experiment no. 27

Compound of the same pair no. 27 +28

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | | 0.0 |
| | | | | 0.0 |

| Permeability (OD) | | In-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.013 | | 0.2 |
| 0.020 | | 0.3 |
| 0.010 | | 0.2 |
| 0.014 | | 0.2 |
| 0.005 | | 0.1 |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 31 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 93 | 90 | 87 | 90.0 | 90.0 |
| 84 | 81 | 78 | 81.0 | 81.0 |
| 57 | 53 | 51 | 53.7 | 53.7 |
| 67 | 63 | 61 | 63.7 | 63.7 |
| 87 | 88 | 88 | 87.7 | 87.7 |
| 78 | 75 | 73 | 75.3 | 75.3 |
| | | | 75.2 | 75.2 |
| | | | 14.2 | 14.2 |

| | | |
|-------|-------|------|
| 0.538 | 0.523 | 97.9 |
| 0.439 | 0.425 | 87.4 |
| 0.467 | 0.453 | 60.5 |
| 0.499 | 0.485 | 70.9 |
| 0.209 | 0.194 | 90.6 |
| 0.430 | 0.416 | 81.6 |
| 0.430 | 0.416 | 81.5 |
| 0.116 | 0.116 | 13.7 |

| cor-nea | treatment | |
|---------|---------------|--|
| 1 | MEM | Glass of the anterior chamber No. 3 was found to be cracked at the end of the fluorescein incubation period. |
| 2 | | |
| 3 | | |
| mean | | O.D. versus C1 |
| ± S.D. | | measured 4 min. after first measurement. |
| 16 | compound no. | Compound No. 31 was warmed up to 32°C |
| 17 | 31 | and stirred on a magnetic stirrer. |
| 18 | | |
| 19 | concentration | |
| 20 | 20% | |
| 21 | | Compound No. 31 was washed away 6 times instead of 3 times. |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 171 |
| 3 | B | 249 |
| | A | 260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet


Lab. no. 09

Date: 02 Apr 92

Name: Ph. Vanparys

Experiment no. 12

Compound of the same pair no. -

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|
| | | C1 | -2 | 0 | -1.0 | C1 | -2 | 0 | -1.0 | correc. | | |
| 1 | MEM | C1 | -2 | 0 | -1.0 | C1 | -2 | 0 | -1.0 | | 0.001 | -1.0 |
| 2 | | 1 | C2 | 2 | 1.5 | 1 | C2 | 2 | 1.5 | | 0.000 | 1.5 |
| 3 | | -1 | -3 | C3 | -2.0 | -2 | -4 | C3 | -3.0 | | 0.001 | -3.0 |
| mean | | | | | | | | | | | 0.001 | -0.8 |
| ± S.D. | | | | | | | | | | | 0.001 | 2.2 |

| | compound no. | 32 | 30 | 33 | 31.7 | 29 | 27 | 31 | 29.0 | 29.8 | 1.628 | 1.627 | 54.2 | |
|--------|---------------|------|----|----|------|------|----|----|------|------|-------|-------|-------|------|
| 10 | 32 | 23 | 21 | 24 | 22.7 | 20 | 19 | 22 | 20.3 | 21.2 | 1.908 | 1.907 | 49.8 | |
| 11 | | 23 | 22 | 24 | 23.0 | 21 | 19 | 22 | 20.7 | 21.5 | 1.687 | 1.686 | 46.8 | |
| 12 | | 24 | 23 | 26 | 24.3 | 23 | 21 | 25 | 23.0 | 23.8 | 1.395 | 1.394 | 44.7 | |
| 13 | concentration | 21 | 20 | 22 | 21.0 | 19 | 17 | 20 | 18.7 | 19.5 | 1.012 | 1.011 | 34.7 | |
| 14 | | 100% | 21 | 19 | 22 | 20.7 | 17 | 16 | 19 | 17.3 | 18.2 | 1.731 | 1.730 | 44.1 |
| 15 | | mean | | | | 23.9 | | | | 21.5 | 22.3 | 1.560 | 1.560 | 45.7 |
| ± S.D. | | | | | 4.0 | | | | 4.1 | 4.1 | 0.316 | 0.316 | 6.6 | |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. |
|--------|---------------|
| 10 | 32 |
| 11 | |
| 12 | |
| 13 | concentration |
| 14 | 100% |
| 15 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -167 |
| 3 | B | 248 |
| | A | -256 |


EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 03 Apr 92
Experiment no. 13 b
Compound of the same pair no. -

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-------------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|
| | | C1 | | | | C1 | | | | correc. | | |
| 1 | MEM with | C1 | -3 | -2 | -2.5 | C1 | -2 | -2 | -2.0 | | 0.002 | -2.0 |
| 2 | I-Glutamine | 2 | C2 | 0 | 1.0 | 0 | C2 | 0 | 0.0 | | 0.003 | 0.0 |
| 3 | Bicarbonate | 1 | -1 | C3 | 0.0 | 1 | 0 | C3 | 0.5 | | 0.000 | 0.5 |
| mean | pH 7.4 | | | | -0.5 | | | | -0.5 | | 0.002 | -0.5 |
| ± S.D. | | | | | 1.8 | | | | 1.3 | | 0.002 | 1.3 |

| | | | | | | | | | | | | | |
|--------|---------------|----|----|----|------|----|----|----|------|------|-------|-------|-------|
| 10 | compound no. | 87 | 83 | 84 | 84.7 | 77 | 76 | 76 | 76.3 | 76.8 | 1.554 | 1.552 | 100.1 |
| 11 | 33 (2) | 74 | 71 | 72 | 72.3 | 65 | 63 | 64 | 64.0 | 64.5 | 0.919 | 0.917 | 78.3 |
| 12 | | 83 | 80 | 80 | 81.0 | 71 | 70 | 71 | 70.7 | 71.2 | 2.090 | 2.088 | 102.5 |
| 13 | concentration | 81 | 77 | 78 | 78.7 | 71 | 70 | 70 | 70.3 | 70.8 | 1.797 | 1.795 | 97.8 |
| 14 | 100% | 87 | 84 | 85 | 85.3 | 79 | 77 | 77 | 77.7 | 78.2 | 1.335 | 1.333 | 98.2 |
| 15 | | 90 | 87 | 87 | 88.0 | 81 | 80 | 80 | 80.3 | 80.8 | 2.502 | 2.500 | 118.3 |
| mean | | | | | 81.7 | | | | 73.2 | 73.7 | 1.700 | 1.698 | 99.2 |
| ± S.D. | | | | | 5.6 | | | | 6.0 | 6.0 | 0.560 | 0.560 | 12.8 |

| cor-nea | treatment |
|---------|-------------|
| 1 | MEM with |
| 2 | I-Glutamine |
| 3 | Bicarbonate |
| mean | pH 7.4 |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 33 (2) |
| 12 | |
| 13 | concentration |
| 14 | 100% |
| 15 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| 1 | B | |
| | A | |
| 2 | B | |
| | A | |
| 3 | B | |
| | A | |

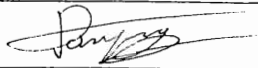
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 06 Apr 92
Experiment no. 14
Compound of the same pair no. 47

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|-----|-------------------|--|----------------|
| | | C1 | -1 | -1 | -1.0 | C1 | 0 | 0 | 0.0 | correc. | | |
| 1 | MEM | C1 | -1 | -1 | -1.0 | C1 | 0 | 0 | 0.0 | 0.014 | | 0.2 |
| 2 | | 0 | C2 | 0 | 0.0 | 0 | C2 | 0 | 0.0 | 0.007 | | 0.1 |
| 3 | | 0 | 0 | C3 | 0.0 | 0 | 0 | C3 | 0.0 | 0.005 | | 0.1 |
| mean | | | | | | | | | 0.0 | 0.009 | | 0.1 |
| ± S.D. | | | | | | | | | 0.0 | 0.005 | | 0.1 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | |
|---------|---------------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|-------|
| | | C1 | -1 | -1 | -1.0 | C1 | 0 | 0 | 0.0 | correc. | | | |
| 4 | compound no. | 34 | 34 | 35 | 34.3 | 28 | 29 | 28 | 28.3 | 28.3 | 0.224 | 0.215 | 31.6 |
| 5 | 34 | 33 | 33 | 33 | 33.0 | 25 | 26 | 25 | 25.3 | 25.3 | 0.052 | 0.043 | 26.0 |
| 6 | concentration | 30 | 30 | 30 | 30.0 | 20 | 21 | 21 | 20.7 | 20.7 | 0.069 | 0.060 | 21.6 |
| 7 | | 28 | 29 | 29 | 28.7 | 23 | 24 | 23 | 23.3 | 23.3 | 0.316 | 0.307 | 27.9 |
| 8 | | 100% | 31 | 32 | 31 | 31.3 | 25 | 26 | 25 | 25.3 | 25.3 | 0.032 | 0.023 |
| 9 | | 26 | 27 | 27 | 26.7 | 21 | 21 | 21 | 21.0 | 21.0 | 0.058 | 0.049 | 21.7 |
| mean | | | | | 30.7 | | | | 24.0 | 24.0 | 0.125 | 0.117 | 25.7 |
| ± S.D. | | | | | 2.8 | | | | 2.9 | 2.9 | 0.117 | 0.117 | 3.8 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| cor-nea | treatment | |
|---------|---------------|------|
| 4 | compound no. | |
| 5 | 34 | |
| 6 | concentration | |
| 7 | | 100% |
| 8 | | |
| 9 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 167 |
| 3 | B | 248 |
| | A | 255 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

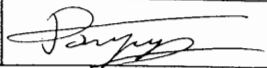
Lab. no. 09

Date: 12 Jun 92

Name: Ph. Vanparys

Experiment no. 38

Compound of the same pair no. 39 + 41

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | | 0.0 |
| | | | | 0.0 |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.009 | | 0.1 |
| 0.019 | | 0.3 |
| 0.005 | | 0.1 |
| 0.011 | | 0.2 |
| 0.007 | | 0.1 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 35 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | 20% |
| mean | |
| ± S.D. | |

| | | | | |
|-----|-----|-----|-------|-------|
| 118 | 119 | 120 | 119.0 | 119.0 |
| 132 | 134 | 137 | 134.3 | 134.3 |
| 142 | 145 | 145 | 144.0 | 144.0 |
| 139 | 140 | 143 | 140.7 | 140.7 |
| 141 | 144 | 144 | 143.0 | 143.0 |
| 128 | 128 | 130 | 128.7 | 128.7 |
| | | | 134.9 | 134.9 |
| | | | 9.7 | 9.7 |

| | | |
|-------|-------|-------|
| 0.272 | 0.261 | 122.9 |
| 0.575 | 0.564 | 142.8 |
| 0.062 | 0.051 | 144.8 |
| 0.550 | 0.539 | 148.8 |
| 0.190 | 0.179 | 145.7 |
| 0.139 | 0.128 | 130.6 |
| 0.298 | 0.287 | 139.2 |
| 0.216 | 0.216 | 10.2 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 35 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | 20% |
| mean | |
| ± S.D. | |

pH: 5.80

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| | | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 16 Apr 92

Name: Ph. Vanparys

Experiment no. 17

Compound of the same pair no. 37 + 49

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|--|----------------|
| | | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | correc. | | |
| 1 | MEM | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | | | 1.6 |
| 2 | | -2 | C2 | -1 | -1.5 | -3 | C2 | -2 | -2.5 | | | -2.4 |
| 3 | | 0 | 0 | C3 | 0.0 | -2 | 1 | C3 | -0.5 | | | -0.3 |
| mean | | | | | | | | | | | | |
| ± S.D. | | | | | | | | | | | | 2.0 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | | |
|---------|---------------|-------------------|----|----|------|--------------------|----|----|------|-------------------|------|----------------|-------|-------|
| | | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | correc. | | | | |
| 4 | compound no. | 9 | 11 | 9 | 9.7 | 10 | 13 | 12 | 11.7 | 12.2 | | | 89.9 | |
| 5 | 36 | 10 | 12 | 11 | 11.0 | 13 | 16 | 14 | 14.3 | 14.8 | | | 97.2 | |
| 6 | concentration | 9 | 11 | 10 | 10.0 | 10 | 13 | 11 | 11.3 | 11.8 | | | 103.3 | |
| 7 | | 12 | 14 | 13 | 13.0 | 15 | 18 | 16 | 16.3 | 16.8 | | | 94.9 | |
| 8 | | 10% | 11 | 13 | 12 | 12.0 | 14 | 18 | 16 | 16.0 | 16.5 | | | 113.2 |
| 9 | | 8 | 10 | 9 | 9.0 | 9 | 12 | 10 | 10.3 | 10.8 | | | 99.3 | |
| mean | | | | | 10.8 | | | | 13.3 | 13.8 | | | 99.6 | |
| ± S.D. | | | | | 1.5 | | | | 2.6 | 2.6 | | | 8.0 | |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|--|----------------|
| | | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | correc. | | |
| 1 | MEM | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | | | 1.6 |
| 2 | | -2 | C2 | -1 | -1.5 | -3 | C2 | -2 | -2.5 | | | -2.4 |
| 3 | | 0 | 0 | C3 | 0.0 | -2 | 1 | C3 | -0.5 | | | -0.3 |
| mean | | | | | | -0.3 | | | | -0.5 | | |
| ± S.D. | | | | | 1.0 | | | | 2.0 | | | 2.0 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | | |
|---------|---------------|-------------------|----|----|------|--------------------|----|----|------|-------------------|------|----------------|-------|-------|
| | | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | correc. | | | | |
| 4 | compound no. | 9 | 11 | 9 | 9.7 | 10 | 13 | 12 | 11.7 | 12.2 | | | 89.9 | |
| 5 | 36 | 10 | 12 | 11 | 11.0 | 13 | 16 | 14 | 14.3 | 14.8 | | | 97.2 | |
| 6 | concentration | 9 | 11 | 10 | 10.0 | 10 | 13 | 11 | 11.3 | 11.8 | | | 103.3 | |
| 7 | | 12 | 14 | 13 | 13.0 | 15 | 18 | 16 | 16.3 | 16.8 | | | 94.9 | |
| 8 | | 10% | 11 | 13 | 12 | 12.0 | 14 | 18 | 16 | 16.0 | 16.5 | | | 113.2 |
| 9 | | 8 | 10 | 9 | 9.0 | 9 | 12 | 10 | 10.3 | 10.8 | | | 99.3 | |
| mean | | | | | 10.8 | | | | 13.3 | 13.8 | | | 99.6 | |
| ± S.D. | | | | | 1.5 | | | | 2.6 | 2.6 | | | 8.0 | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -263 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 16 Apr 92

Name: Ph. Vanparys

Experiment no. 17

Compound of the same pair no. 36 + 49

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | In-vitro score | |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------------------------|----------------|---------|
| | | C1 | | | | C1 | | | | | | correc. |
| 1 | MEM | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | | 0.006 | 1.6 |
| 2 | | -2 | C2 | -1 | -1.5 | -3 | C2 | -2 | -2.5 | | 0.010 | -2.4 |
| 3 | | 0 | 0 | C3 | 0.0 | -2 | 1 | C3 | -0.5 | | 0.015 | -0.3 |
| mean | | | | | -0.3 | | | | -0.5 | | 0.010 | -0.3 |
| ± S.D. | | | | | 1.0 | | | | 2.0 | | 0.005 | 2.0 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | | In-vitro score | |
|---------|---------------|-------------------|----|----|------|--------------------|----|----|------|---------------------------|-------|----------------|-------|
| | | C1 | | | | C1 | | | | | | | |
| 10 | compound no. | 0 | 1 | 0 | 0.3 | 1 | 4 | 2 | 2.3 | 2.8 | 0.022 | 0.012 | 3.0 |
| 11 | 37 | -2 | 0 | -1 | -1.0 | -3 | 0 | -2 | -1.7 | -1.2 | 0.012 | 0.001 | -1.1 |
| 12 | concentration | -1 | 0 | 0 | -0.3 | -2 | 1 | 0 | -0.3 | 0.2 | 0.016 | 0.005 | 0.2 |
| 13 | | -1 | 0 | 0 | -0.3 | -2 | 0 | -1 | -1.0 | -0.5 | 0.013 | 0.002 | -0.5 |
| 14 | | 10% | -1 | 0 | 0 | -0.3 | -1 | 1 | 0 | 0.0 | 0.5 | 0.011 | 0.001 |
| 15 | | -1 | 0 | 0 | -0.3 | -1 | 1 | 0 | 0.0 | 0.5 | 0.019 | 0.009 | 0.6 |
| mean | | | | | -0.3 | | | | -0.1 | 0.4 | 0.015 | 0.005 | 0.5 |
| ± S.D. | | | | | 0.4 | | | | 1.4 | 1.4 | 0.004 | 0.004 | 1.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| cor-nea | treatment | |
|---------|---------------|-----|
| 10 | compound no. | |
| 11 | 37 | |
| 12 | concentration | |
| 13 | | |
| 14 | | 10% |
| 15 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 170 |
| 3 | B | 250 |
| | A | 263 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

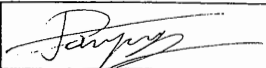
Lab. no. 09

Date: 17 Apr 92

Name: Ph. Vanparys

Experiment no. 18

Compound of the same pair no. 40 + 42

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------------------------|----------------|
| | | C1 | C2 | C3 | mean | C1 | C2 | C3 | mean | | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | 0 | 0 | 0.0 | 0.013 | 0.2 |
| 2 | | 0 | C2 | 0 | 0.0 | 0 | C2 | 0 | 0.0 | 0.011 | 0.2 |
| 3 | | 1 | 1 | C3 | 1.0 | 0 | 0 | C3 | 0.0 | 0.008 | 0.1 |
| mean | | | | | 0.3 | | | | 0.0 | 0.011 | 0.2 |
| ± S.D. | | | | | 0.6 | | | | 0.0 | 0.003 | 0.0 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | | in-vitro score | |
|---------|---------------|-------------------|---|---|-----|--------------------|---|---|-----|---------------------------|-------|----------------|--------|
| 4 | compound no. | 1 | 1 | 0 | 0.7 | 2 | 2 | 1 | 1.7 | 1.7 | 0.022 | 0.012 | 1.8 |
| 5 | 38 | 1 | 1 | 0 | 0.7 | 1 | 1 | 0 | 0.7 | 0.7 | 0.012 | 0.001 | 0.7 |
| 6 | concentration | 1 | 1 | 0 | 0.7 | 1 | 1 | 0 | 0.7 | 0.7 | 0.011 | 0.000 | 0.7 |
| 7 | | 1 | 1 | 0 | 0.7 | 2 | 2 | 2 | 2.0 | 2.0 | 0.005 | -0.006 | 1.9 |
| 8 | | 10% | 1 | 1 | 0 | 0.7 | 1 | 1 | 0 | 0.7 | 0.7 | 0.003 | -0.008 |
| 9 | | 1 | 1 | 0 | 0.7 | 1 | 1 | 0 | 0.7 | 0.7 | 0.002 | -0.009 | 0.5 |
| mean | | | | | 0.7 | | | | 1.1 | 1.1 | 0.009 | -0.002 | 1.0 |
| ± S.D. | | | | | 0.0 | | | | 0.6 | 0.6 | 0.008 | 0.008 | 0.7 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| cor-nea | treatment | |
|---------|---------------|-----|
| 4 | compound no. | |
| 5 | 38 | |
| 6 | concentration | |
| 7 | | 10% |
| 8 | | |
| 9 | | |
| mean | | |
| ± S.D. | | |

Compound No. 38 was warmed up to 32°C and stirred on a magnetic stirrer

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 169 |
| 3 | B | 249 |
| | A | 258 |

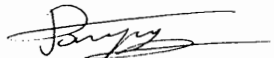
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. **09**

Date: 12 Jun 92
 Experiment no. 38
 Compound of the same pair no. 35 + 41

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| •0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | 0.0 | |
| | | | 0.0 | |

| Permeability (OD) | correc. | In-vitro score |
|-------------------|---------|----------------|
| 0.009 | | 0.1 |
| 0.019 | | 0.3 |
| 0.005 | | 0.1 |
| 0.011 | | 0.2 |
| 0.007 | | 0.1 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 39 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|---|---|---|-----|-----|
| 3 | 3 | 2 | 2.7 | 2.7 |
| 3 | 3 | 3 | 3.0 | 3.0 |
| 3 | 3 | 3 | 3.0 | 3.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| 5 | 5 | 4 | 4.7 | 4.7 |
| | | | 2.6 | 2.6 |
| | | | 1.4 | 1.4 |

| | | |
|-------|--------|-----|
| 0.002 | -0.009 | 2.5 |
| 0.013 | 0.002 | 3.0 |
| 0.002 | -0.009 | 2.9 |
| 0.018 | 0.007 | 1.1 |
| 0.004 | -0.007 | 0.9 |
| 0.007 | -0.004 | 4.6 |
| 0.008 | -0.003 | 2.5 |
| 0.006 | 0.006 | 1.4 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 39 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

pH: 2.97
 The anterior chamber was opened for washing.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

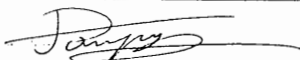
Lab. no. **09**

Date: 17 Apr 92

Name: Ph. Vanparys

Experiment no. 18

Compound of the same pair no. 38 + 42

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|-----|--------------------|----|----|-----|-------------------|--|----------------|
| | | C1 | 0 | 0 | 0.0 | C1 | 0 | 0 | 0.0 | correc. | | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | 0 | 0 | 0.0 | 0.013 | | 0.2 |
| 2 | | 0 | C2 | 0 | 0.0 | 0 | C2 | 0 | 0.0 | 0.011 | | 0.2 |
| 3 | | 1 | 1 | C3 | 1.0 | 0 | 0 | C3 | 0.0 | 0.008 | | 0.1 |
| mean | | | | | | | | | | 0.011 | | 0.2 |
| ± S.D. | | | | | | | | | | 0.003 | | 0.0 |

| | compound no. | opacity at 10 min | | | | opacity at 120 min | | | | | Permeability (OD) | | in-vitro score | | |
|--------|--------------|-------------------|-----|---|-----|--------------------|-----|---|-----|-----|-------------------|-------|----------------|-------|------|
| 10 | 40 | 3 | 4 | 3 | 3.3 | 9 | 9 | 8 | 8.7 | 8.7 | 3.128 | 3.117 | | 55.4 | |
| 11 | | 3 | 3 | 2 | 2.7 | 9 | 9 | 8 | 8.7 | 8.7 | 3.775 | 3.764 | 65.1 | | |
| 12 | | 5 | 5 | 4 | 4.7 | 8 | 9 | 8 | 8.3 | 8.3 | 3.992 | 3.981 | 68.1 | | |
| 13 | | concentration | 2 | 2 | 1 | 1.7 | 7 | 7 | 6 | 6.7 | 6.7 | 4.426 | 4.415 | 72.9 | |
| 14 | | | 10% | 5 | 5 | 4 | 4.7 | 7 | 7 | 6 | 6.7 | 6.7 | 3.238 | 3.227 | 55.1 |
| 15 | | | | 4 | 4 | 3 | 3.7 | 8 | 8 | 7 | 7.7 | 7.7 | 3.422 | 3.411 | 58.8 |
| mean | | | | | | | | | | | | | | 62.6 | |
| ± S.D. | | | | | | | | | | | | | | 7.3 | |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. | |
|--------|--------------|---------------|
| 10 | 40 | |
| 11 | | |
| 12 | | |
| 13 | | concentration |
| 14 | | 10% |
| 15 | | |
| mean | | |
| ± S.D. | | |

Compound No. 40 was warmed up to 32°C and stirred on a magnetic stirrer.

Membranes released from the corneas:
very small air-bubbles behind the corneas.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -169 |
| 3 | B | 249 |
| | A | -258 |

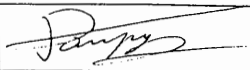
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 12 Jun 92
Experiment no. 38
Compound of the same pair no. 35 + 39

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | Permeability (OD) | | in-vitro score |
|--------------------|----|----|-----|---------|-------------------|-----|----------------|
| | | | | correc. | correc. | | |
| C1 | 0 | 0 | 0.0 | | 0.009 | | 0.1 |
| 0 | C2 | 0 | 0.0 | | 0.019 | | 0.3 |
| 0 | 0 | C3 | 0.0 | | 0.005 | | 0.1 |
| | | | 0.0 | | 0.011 | | 0.2 |
| | | | 0.0 | | 0.007 | 0.1 | |

| | |
|--------|---------------|
| 16 | compound no. |
| 17 | 41 |
| 18 | |
| 19 | concentration |
| 20 | 20% |
| 21 | |
| mean | |
| ± S.D. | |

| | | | | | | | |
|----|----|----|------|------|-------|-------|------|
| 53 | 52 | 52 | 52.3 | 52.3 | 0.035 | 0.024 | 52.7 |
| 58 | 58 | 58 | 58.0 | 58.0 | 0.052 | 0.041 | 58.6 |
| 64 | 64 | 64 | 64.0 | 64.0 | 0.108 | 0.097 | 65.4 |
| 54 | 53 | 53 | 53.3 | 53.3 | 0.029 | 0.018 | 53.6 |
| 52 | 52 | 51 | 51.7 | 51.7 | 0.096 | 0.085 | 52.9 |
| 63 | 63 | 62 | 62.7 | 62.7 | 0.123 | 0.112 | 64.3 |
| | | | 57.0 | 57.0 | 0.074 | 0.063 | 57.9 |
| | | | 5.4 | 5.4 | 0.040 | 0.040 | 5.8 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | | |
|--------|---------------|---|
| 16 | compound no. | pH : 7.26 Compound no. 41 was washed away 4 times. |
| 17 | 41 | |
| 18 | | |
| 19 | concentration | |
| 20 | 20% | |
| 21 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

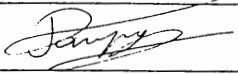
Lab. no. 09

Date: 17 Apr 92

Name: Ph. Vanparys

Experiment no. 18

Compound of the same pair no. 38 + 40

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|----|-----|--------------------|----|----|-----|---------------------------|----------------|
| | | C1 | 0 | 0 | 0.0 | C1 | 0 | 0 | 0.0 | | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | 0 | 0 | 0.0 | 0.013 | 0.2 |
| 2 | | 0 | C2 | 0 | 0.0 | 0 | C2 | 0 | 0.0 | 0.011 | 0.2 |
| 3 | | 1 | 1 | C3 | 1.0 | 0 | 0 | C3 | 0.0 | 0.008 | 0.1 |
| mean | | | | | | | | | | 0.011 | 0.2 |
| ± S.D. | | | | | | | | | | 0.003 | 0.0 |

| | compound no. | 12 | 12 | 11 | 11.7 | 18 | 18 | 17 | 17.7 | 17.7 | 3.170 | 3.159 | 65.1 |
|--------|---------------|----|----|----|------|----|----|----|------|------|-------|-------|------|
| 16 | 42 | 12 | 12 | 11 | 11.7 | 18 | 18 | 17 | 17.7 | 17.7 | 3.170 | 3.159 | 65.1 |
| 17 | | 13 | 13 | 12 | 12.7 | 19 | 19 | 18 | 18.7 | 18.7 | 3.968 | 3.957 | 78.0 |
| 18 | | 11 | 12 | 11 | 11.3 | 25 | 25 | 24 | 24.7 | 24.7 | 2.638 | 2.627 | 64.1 |
| 19 | concentration | 8 | 8 | 7 | 7.7 | 14 | 14 | 13 | 13.7 | 13.7 | 3.449 | 3.438 | 65.2 |
| 20 | | 12 | 12 | 12 | 12.0 | 19 | 19 | 18 | 18.7 | 18.7 | 3.282 | 3.271 | 67.7 |
| 21 | | 12 | 13 | 12 | 12.3 | 17 | 17 | 16 | 16.7 | 16.7 | 4.187 | 4.176 | 79.3 |
| mean | 10% | | | | 11.3 | | | | 18.3 | 18.3 | 3.449 | 3.438 | 69.9 |
| ± S.D. | | | | | 1.8 | | | | 3.6 | 3.6 | 0.562 | 0.562 | 6.9 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. |
|--------|---------------|
| 16 | 42 |
| 17 | |
| 18 | |
| 19 | concentration |
| 20 | 10% |
| 21 | |
| mean | |
| ± S.D. | |

Compound No. 42 was warmed up to 32°C and stirred on a magnetic stirrer.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 169 |
| 3 | B | 248 |
| | A | 258 |

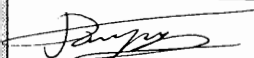
EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 15 Jun 92
Experiment no. 39
Compound of the same pair no. 44

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | correc. |
|--------------------|----|----|-----|---------|
| C1 | 0 | 0 | 0.0 | |
| 0 | C2 | 0 | 0.0 | |
| 0 | 0 | C3 | 0.0 | |
| | | | | 0.0 |
| | | | | 0.0 |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.036 | | 0.5 |
| 0.022 | | 0.3 |
| 0.028 | | 0.4 |
| 0.029 | | 0.4 |
| 0.007 | | 0.1 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 43 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | 20% |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 86 | 86 | 86 | 86.0 | 86.0 |
| 71 | 71 | 71 | 71.0 | 71.0 |
| 79 | 79 | 79 | 79.0 | 79.0 |
| 94 | 94 | 94 | 94.0 | 94.0 |
| 91 | 91 | 91 | 91.0 | 91.0 |
| 95 | 93 | 93 | 93.7 | 93.7 |
| | | | 85.8 | 85.8 |
| | | | 9.2 | 9.2 |

| | | |
|-------|-------|-------|
| 4.402 | 4.373 | 151.6 |
| 3.408 | 3.379 | 121.7 |
| 4.386 | 4.357 | 144.4 |
| 4.370 | 4.342 | 159.1 |
| 6.292 | 6.263 | 184.9 |
| 3.553 | 3.524 | 146.5 |
| 4.402 | 4.373 | 151.4 |
| 1.028 | 1.028 | 20.7 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 159 |
| | A | 170 |
| 3 | B | 249 |
| | A | 260 |

| | |
|--------|---------------|
| 4 | compound no. |
| 5 | 43 |
| 6 | concentration |
| 7 | |
| 8 | |
| 9 | 20% |
| mean | |
| ± S.D. | |

pH: 8.66

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 15 Jun 92

Name: Ph. Vanparys

Experiment no. 39

Compound of the same pair no. 43

Signature: 

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| opacity at 240 min | | | | | correc. |
|--------------------|----|----|-----|--|---------|
| C1 | 0 | 0 | 0.0 | | |
| 0 | C2 | 0 | 0.0 | | |
| 0 | 0 | C3 | 0.0 | | |
| | | | 0.0 | | |
| | | | 0.0 | | |

| Permeability (OD) | | in-vitro score |
|-------------------|--|----------------|
| correc. | | |
| 0.036 | | 0.5 |
| 0.022 | | 0.3 |
| 0.028 | | 0.4 |
| 0.029 | | 0.4 |
| 0.007 | | 0.1 |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 44 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

| | | | | |
|----|----|----|------|------|
| 0 | 0 | 0 | 0.0 | 0.0 |
| 2 | 2 | 2 | 2.0 | 2.0 |
| 1 | 1 | 1 | 1.0 | 1.0 |
| -1 | -2 | -2 | -1.7 | -1.7 |
| 0 | -1 | -1 | -0.7 | -0.7 |
| 4 | 3 | 3 | 3.3 | 3.3 |
| | | | 0.7 | 0.7 |
| | | | 1.8 | 1.8 |

| | | |
|-------|-------|------|
| 0.045 | 0.016 | 0.2 |
| 0.043 | 0.014 | 2.2 |
| 0.064 | 0.036 | 1.5 |
| 0.062 | 0.034 | -1.2 |
| 0.485 | 0.457 | 6.2 |
| 0.055 | 0.026 | 3.7 |
| 0.126 | 0.097 | 2.1 |
| 0.176 | 0.176 | 2.6 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | |
|--------|---------------|
| 10 | compound no. |
| 11 | 44 |
| 12 | |
| 13 | concentration |
| 14 | 20% |
| 15 | |
| mean | |
| ± S.D. | |

pH: 8.50

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 249 |
| | A | -260 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 21 Apr 92

Name: Ph. Vanparys

Experiment no. 19

Compound of the same pair no. 46

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|-----|--------------------|----|----|------|-------------------|---------|----------------|
| | | C1 | | | | | | | | correc. | correc. | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | -1 | 0 | -0.5 | | 0.012 | -0.3 |
| 2 | | 0 | C2 | 0 | 0.0 | 1 | C2 | 1 | 1.0 | | 0.009 | 1.1 |
| 3 | | 0 | 0 | C3 | 0.0 | 0 | -1 | C3 | -0.5 | | 0.015 | -0.3 |
| mean | | | | | 0.0 | | | | 0.0 | | 0.012 | 0.2 |
| ± S.D. | | | | | 0.0 | | | | 0.9 | | 0.003 | 0.8 |

| | | | | | | | | | | | | | |
|--------|---------------|-----|----|----|------|------|----|----|------|------|-------|-------|-------|
| 4 | compound no. | 52 | 52 | 54 | 52.7 | 84 | 83 | 84 | 83.7 | 83.7 | 6.949 | 6.937 | 187.7 |
| 5 | 45 | 57 | 58 | 59 | 58.0 | 88 | 87 | 88 | 87.7 | 87.7 | 4.728 | 4.716 | 158.4 |
| 6 | concentration | 54 | 55 | 56 | 55.0 | 86 | 85 | 86 | 85.7 | 85.7 | 4.464 | 4.452 | 152.5 |
| 7 | | 50 | 50 | 51 | 50.3 | 84 | 83 | 84 | 83.7 | 83.7 | 5.923 | 5.911 | 172.3 |
| 8 | | 10% | 47 | 47 | 48 | 47.3 | 79 | 78 | 80 | 79.0 | 79.0 | 4.781 | 4.769 |
| 9 | | 54 | 55 | 56 | 55.0 | 89 | 87 | 88 | 88.0 | 88.0 | 5.748 | 5.736 | 174.0 |
| mean | | | | | 53.1 | | | | 84.6 | 84.6 | 5.432 | 5.420 | 165.9 |
| ± S.D. | | | | | 3.8 | | | | 3.3 | 3.3 | 0.949 | 0.949 | 14.5 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | | |
|--------|---------------|-----|
| 4 | compound no. | |
| 5 | 45 | |
| 6 | concentration | |
| 7 | | |
| 8 | | 10% |
| 9 | | |
| mean | | |
| ± S.D. | | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -171 |
| 3 | B | 252 |
| | A | -263 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

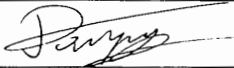
Lab. no. 09

Date: 21 Apr 92

Name: Ph. Vanparys

Experiment no. 19

Compound of the same pair no. 45

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|----|-----|--------------------|----|----|------|------------------------------|----------------|
| | | C1 | 0 | 0 | 0.0 | C1 | -1 | 0 | -0.5 | | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | -1 | 0 | -0.5 | 0.012 | -0.3 |
| 2 | | 0 | C2 | 0 | 0.0 | 1 | C2 | 1 | 1.0 | 0.009 | 1.1 |
| 3 | | 0 | 0 | C3 | 0.0 | 0 | -1 | C3 | -0.5 | 0.015 | -0.3 |
| mean | | | | | 0.0 | | | | 0.0 | 0.012 | 0.2 |
| ± S.D. | | | | | 0.0 | | | | 0.9 | 0.003 | 0.8 |

| | compound no. | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | in-vitro score | | |
|--------|---------------|-------------------|---|---|-----|--------------------|---|---|-----|-------------------|----------------|--------|-----|
| 10 | 46 | 1 | 1 | 1 | 1.0 | 3 | 2 | 3 | 2.7 | 2.7 | 0.014 | 0.003 | 2.7 |
| 11 | | 2 | 1 | 1 | 1.3 | 4 | 3 | 4 | 3.7 | 3.7 | 0.005 | -0.006 | 3.6 |
| 12 | | 3 | 3 | 3 | 3.0 | 5 | 4 | 5 | 4.7 | 4.7 | 0.011 | 0.000 | 4.7 |
| 13 | concentration | 0 | 0 | 0 | 0.0 | 1 | 0 | 1 | 0.7 | 0.7 | 0.016 | 0.004 | 0.7 |
| 14 | 10% | 1 | 0 | 0 | 0.3 | 2 | 1 | 2 | 1.7 | 1.7 | 0.031 | 0.020 | 2.0 |
| 15 | | 3 | 3 | 3 | 3.0 | 5 | 4 | 5 | 4.7 | 4.7 | 0.043 | 0.032 | 5.1 |
| mean | | | | | 1.4 | | | | 3.0 | 3.0 | 0.020 | 0.008 | 3.1 |
| ± S.D. | | | | | 1.3 | | | | 1.6 | 1.6 | 0.014 | 0.014 | 1.7 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. |
|--------|---------------|
| 10 | 46 |
| 11 | |
| 12 | |
| 13 | concentration |
| 14 | 10% |
| 15 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -171 |
| 3 | B | 252 |
| | A | -263 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

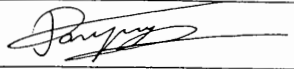
Lab. no. 09

Date: 06 Apr 92

Name: Ph. Vanparys

Experiment no. 14

Compound of the same pair no. 34

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|-----|---------------------------|----------------|
| | | C1 | -1 | -1 | -1.0 | C1 | 0 | 0 | 0.0 | | |
| 1 | MEM | C1 | -1 | -1 | -1.0 | C1 | 0 | 0 | 0.0 | 0.014 | 0.2 |
| 2 | | 0 | C2 | 0 | 0.0 | 0 | C2 | 0 | 0.0 | 0.007 | 0.1 |
| 3 | | 0 | 0 | C3 | 0.0 | 0 | 0 | C3 | 0.0 | 0.005 | 0.1 |
| mean | | | | | | | | | | 0.009 | 0.1 |
| ± S.D. | | | | | | | | | | 0.005 | 0.1 |

| 10 | compound no. | 4 | 4 | 4 | 4.0 | 6 | 6 | 6 | 6.0 | 6.0 | 6.160 | 6.151 | 98.3 |
|--------|---------------|------|---|---|-----|-----|----|----|------|------|-------|-------|-------|
| 11 | 47 | 5 | 6 | 6 | 5.7 | 11 | 12 | 11 | 11.3 | 11.3 | 4.200 | 4.191 | 74.2 |
| 12 | concentration | 3 | 4 | 3 | 3.3 | 6 | 7 | 6 | 6.3 | 6.3 | 4.500 | 4.491 | 73.7 |
| 13 | | 4 | 5 | 5 | 4.7 | 7 | 7 | 7 | 7.0 | 7.0 | 7.760 | 7.751 | 123.3 |
| 14 | | 100% | 2 | 2 | 2 | 2.0 | 8 | 9 | 8 | 8.3 | 8.3 | 4.520 | 4.511 |
| 15 | | 4 | 5 | 5 | 4.7 | 7 | 8 | 7 | 7.3 | 7.3 | 6.280 | 6.271 | 101.4 |
| mean | | 4.1 | | | | 7.7 | | | | 7.7 | 5.570 | 5.561 | 91.1 |
| ± S.D. | | 1.3 | | | | 1.9 | | | | 1.9 | 1.398 | 1.398 | 20.0 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| 10 | compound no. | |
|--------|---------------|------|
| 11 | 47 | |
| 12 | concentration | |
| 13 | | 100% |
| 14 | | |
| 15 | | |
| mean | | |
| ± S.D. | | |

Na-fluorescein concentration in posterior compartment diluted with a factor 4. The OD values were multiplied with 4 to obtain the final OD value indicated in the table.

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | | 0 |
| 1 | B | 75 |
| | A | 75 |
| 2 | B | 158 |
| | A | 167 |
| 3 | B | 248 |
| | A | 255 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 13 Apr 92
Experiment no. 16
Compound of the same pair no. 51 + 52

*REPEAT OF
 EXP. NR. 15*

Name: Ph. Vanparys

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) correc. | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------------------------|----------------|
| | | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | | |
| 1 | MEM | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | 0.009 | -0.4 |
| 2 | | 0 | C2 | 1 | 0.5 | 0 | C2 | 1 | 0.5 | 0.009 | 0.6 |
| 3 | | 0 | -1 | C3 | -0.5 | -1 | -2 | C3 | -1.5 | 0.010 | -1.4 |
| mean | | | | | | | | | | 0.009 | -0.4 |
| ± S.D. | | | | | | | | | | 0.001 | 1.0 |

| | compound no. | 63 | 62 | 63 | 62.7 | 80 | 80 | 81 | 80.3 | 80.8 | 3.963 | 3.954 | 140.1 |
|--------|---------------|----|----|----|------|----|----|----|------|------|-------|-------|-------|
| 16 | 48 (2) | 57 | 57 | 58 | 57.3 | 76 | 75 | 76 | 75.7 | 76.2 | 5.402 | 5.393 | 157.1 |
| 17 | | 52 | 52 | 53 | 52.3 | 70 | 69 | 70 | 69.7 | 70.2 | 4.382 | 4.373 | 135.8 |
| 18 | | 57 | 57 | 59 | 57.7 | 75 | 74 | 76 | 75.0 | 75.5 | 3.912 | 3.903 | 134.0 |
| 19 | | 59 | 59 | 60 | 59.3 | 80 | 79 | 81 | 80.0 | 80.5 | 4.090 | 4.081 | 141.7 |
| 20 | | 58 | 57 | 59 | 58.0 | 76 | 75 | 77 | 76.0 | 76.5 | 4.350 | 4.341 | 141.6 |
| 21 | concentration | | | | | | | | | | 4.350 | 4.341 | 141.7 |
| mean | 100% | | | | 57.9 | | | | 76.1 | 76.6 | 4.350 | 4.341 | 141.7 |
| ± S.D. | | | | | 3.4 | | | | 3.9 | 3.9 | 0.551 | 0.551 | 8.2 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. |
|--------|---------------|
| 16 | 48 (2) |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | concentration |
| mean | 100% |
| ± S.D. | |

| Filter paper | Holder | Opacity |
|--------------|--------|---------|
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -168 |
| 3 | B | 249 |
| | A | -259 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. **09**

Date: 16 Apr 92
 Experiment no. 17
 Compound of the same pair no. 36 + 37

Name: Ph. Vanparys

*REPEAT OF
 EXP. NR. 15*

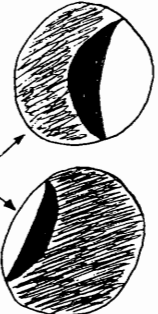
Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|---------|----------------|
| | | C1 | | | | C1 | | | | correc. | correc. | |
| 1 | MEM | C1 | 1 | 0 | 0.5 | C1 | 2 | 1 | 1.5 | | 0.006 | 1.6 |
| 2 | | -2 | C2 | -1 | -1.5 | • -3 | C2 | -2 | -2.5 | | 0.010 | -2.4 |
| 3 | | 0 | 0 | C3 | 0.0 | -2 | 1 | C3 | -0.5 | | 0.015 | -0.3 |
| mean | | | | | | | | | | | 0.010 | -0.3 |
| ± S.D. | | | | | | | | | | | 0.005 | 2.0 |

| | compound no. | 21 | 24 | 23 | 22.7 | 30 | 34 | 32 | 32.0 | 32.5 | 4.517 | 4.507 | 100.1 | |
|----|---------------|------|----|----|------|------|----|----|------|------|-------|-------|-------|------|
| 16 | 49 (2) | 23 | 25 | 24 | 24.0 | 29 | 33 | 30 | 30.7 | 31.2 | 4.129 | 4.119 | 92.9 | |
| 17 | | 29 | 31 | 30 | 30.0 | 33 | 36 | 34 | 34.3 | 34.8 | 6.519 | 6.509 | 132.5 | |
| 18 | | 18 | 20 | 19 | 19.0 | 23 | 27 | 25 | 25.0 | 25.5 | 3.785 | 3.775 | 82.1 | |
| 19 | concentration | 24 | 27 | 26 | 25.7 | 31 | 35 | 31 | 32.3 | 32.8 | 3.074 | 3.064 | 78.8 | |
| 20 | | 100% | 22 | 24 | 23 | 23.0 | 28 | 31 | 29 | 29.3 | 29.8 | 2.750 | 2.740 | 70.9 |
| 21 | | mean | | | | 24.1 | | | | 30.6 | 31.1 | 4.129 | 4.119 | 92.9 |
| | ± S.D. | | | | 3.6 | | | | 3.2 | 3.2 | 1.341 | 1.341 | 22.0 | |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. | |
|--------|---------------|------|
| 16 | 49 (2) | |
| 17 | | |
| 18 | | |
| 19 | concentration | |
| 20 | | 100% |
| 21 | | |
| mean | | |
| ± S.D. | | |



Fine opaque membrane is released from the corneas

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 159 |
| | A | -170 |
| 3 | B | 250 |
| | A | -263 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

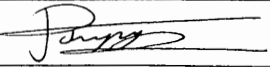
Lab. no. **09**

Date: 22 Jun 92

Name: Ph. Vanparys

Experiment no. 41

Compound of the same pair no.

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|-----|--------------------|----|----|-----|-------------------|---------|----------------|
| | | C1 | | | | C1 | | | | correc. | correc. | |
| 1 | MEM | C1 | 0 | 0 | 0.0 | C1 | 0 | 0 | 0.0 | | 0.005 | 0.1 |
| 2 | | 0 | C2 | 0 | 0.0 | 0 | C2 | 0 | 0.0 | | 0.009 | 0.1 |
| 3 | | 0 | 1 | C3 | 0.5 | 0 | 0 | C3 | 0.0 | | 0.012 | 0.2 |
| mean | | | | | 0.2 | | | | 0.0 | | 0.009 | 0.1 |
| ± S.D. | | | | | 0.3 | | | | 0.0 | | 0.004 | 0.1 |

| | | | | | | | | | | | | | |
|--------|---------------|-----|----|----|------|-----|----|----|------|------|-------|-------|-------|
| 4 | compound no. | 9 | 11 | 10 | 10.0 | 15 | 14 | 14 | 14.3 | 14.3 | 6.268 | 6.259 | 108.2 |
| 5 | 50 | 12 | 14 | 14 | 13.3 | 20 | 19 | 19 | 19.3 | 19.3 | 4.413 | 4.404 | 85.4 |
| 6 | concentration | 13 | 14 | 13 | 13.3 | 19 | 19 | 19 | 19.0 | 19.0 | 7.409 | 7.400 | 130.0 |
| 7 | | 9 | 10 | 9 | 9.3 | 10 | 10 | 10 | 10.0 | 10.0 | 3.752 | 3.743 | 66.2 |
| 8 | | 10% | 9 | 10 | 9 | 9.3 | 14 | 13 | 13 | 13.3 | 13.3 | 5.552 | 5.543 |
| 9 | | 15 | 16 | 16 | 15.7 | 22 | 21 | 21 | 21.3 | 21.3 | 7.111 | 7.102 | 127.9 |
| mean | | | | | 11.8 | | | | 16.2 | 16.2 | 5.751 | 5.742 | 102.4 |
| ± S.D. | | | | | 2.6 | | | | 4.3 | 4.3 | 1.462 | 1.462 | 24.8 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | | |
|--------|---------------|---|
| 4 | compound no. | pH: 9.06 |
| 5 | 50 | |
| 6 | concentration | |
| 7 | | Cornea no. 7 with transparant area in the middle. |
| 8 | | 10% |
| 9 | | |
| mean | | |
| ± S.D. | | |



| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| 1 | B | |
| | A | |
| 2 | B | |
| | A | |
| 3 | B | |
| | A | |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 13 Apr 92

Name: Ph. Vanparys

Experiment no. 16

Compound of the same pair no. 48 + 52

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|-------------------|--|----------------|
| | | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | correc. | | |
| 1 | MEM | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | | | -0.4 |
| 2 | | 0 | C2 | 1 | 0.5 | 0 | C2 | 1 | 0.5 | | | 0.6 |
| 3 | | 0 | -1 | C3 | -0.5 | -1 | -2 | C3 | -1.5 | | | -1.4 |
| mean | | | | | | | | | | | | -0.4 |
| ± S.D. | | | | | | | | | | | | 1.0 |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | |
|---------|---------------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|-------|
| | | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | correc. | | | |
| 4 | compound no. | 41 | 41 | 42 | 41.3 | 47. | 46 | 48 | 47.0 | 47.5 | 5.154 | 5.145 | 124.7 |
| 5 | 51 | 37 | 37 | 38 | 37.3 | 43 | 43 | 44 | 43.3 | 43.8 | 3.662 | 3.653 | 98.6 |
| 6 | concentration | 36 | 35 | 37 | 36.0 | 40 | 40 | 41 | 40.3 | 40.8 | 3.053 | 3.044 | 86.5 |
| 7 | | 36 | 36 | 37 | 36.3 | 42 | 41 | 42 | 41.7 | 42.2 | 3.216 | 3.207 | 90.3 |
| 8 | | 100% | 38 | 38 | 39 | 38.3 | 42 | 42 | 43 | 42.3 | 42.8 | 4.318 | 4.309 |
| 9 | | 47 | 46 | 47 | 46.7 | 49 | 48 | 50 | 49.0 | 49.5 | 4.742 | 4.733 | 120.5 |
| mean | | | | | 39.3 | | | | 43.9 | 44.4 | 4.024 | 4.015 | 104.7 |
| ± S.D. | | | | | 4.1 | | | | 3.3 | 3.3 | 0.849 | 0.849 | 15.7 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | Permeability (OD) | | in-vitro score | |
|---------|---------------|-------------------|----|----|------|--------------------|----|----|------|-------------------|-------|----------------|-------|
| | | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | correc. | | | |
| 4 | compound no. | 41 | 41 | 42 | 41.3 | 47. | 46 | 48 | 47.0 | 47.5 | 5.154 | 5.145 | 124.7 |
| 5 | 51 | 37 | 37 | 38 | 37.3 | 43 | 43 | 44 | 43.3 | 43.8 | 3.662 | 3.653 | 98.6 |
| 6 | concentration | 36 | 35 | 37 | 36.0 | 40 | 40 | 41 | 40.3 | 40.8 | 3.053 | 3.044 | 86.5 |
| 7 | | 36 | 36 | 37 | 36.3 | 42 | 41 | 42 | 41.7 | 42.2 | 3.216 | 3.207 | 90.3 |
| 8 | | 100% | 38 | 38 | 39 | 38.3 | 42 | 42 | 43 | 42.3 | 42.8 | 4.318 | 4.309 |
| 9 | | 47 | 46 | 47 | 46.7 | 49 | 48 | 50 | 49.0 | 49.5 | 4.742 | 4.733 | 120.5 |
| mean | | | | | 39.3 | | | | 43.9 | 44.4 | 4.024 | 4.015 | 104.7 |
| ± S.D. | | | | | 4.1 | | | | 3.3 | 3.3 | 0.849 | 0.849 | 15.7 |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -168 |
| 3 | B | 249 |
| | A | -259 |

EEC VALIDATION OF THE BC0-P ASSAY

Data sheet

Lab. no. 09

Date: 13 Apr 92

Name: Ph. Vanparys

Experiment no. 16

Compound of the same pair no. 48 + 51

Signature: 

| cor-nea | treatment | opacity at 10 min | | | | opacity at 120 min | | | | correc. | Permeability (OD) | | in-vitro score |
|---------|-----------|-------------------|----|----|------|--------------------|----|----|------|---------|-------------------|--|----------------|
| | | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | | correc. | | |
| 1 | MEM | C1 | -1 | 0 | -0.5 | C1 | -1 | 0 | -0.5 | | 0.009 | | -0.4 |
| 2 | | 0 | C2 | 1 | 0.5 | 0 | C2 | 1 | 0.5 | | 0.009 | | 0.6 |
| 3 | | 0 | -1 | C3 | -0.5 | -1 | -2 | C3 | -1.5 | | 0.010 | | -1.4 |
| mean | | | | | -0.2 | | | | -0.5 | | 0.009 | | -0.4 |
| ± S.D. | | | | | 0.6 | | | | 1.0 | | 0.001 | | 1.0 |

| | compound no. | 1 | 0 | 2 | 1.0 | 3 | 2 | 3 | 2.7 | 3.2 | 0.038 | 0.029 | 3.6 |
|--------|---------------|---|---|---|-----|---|---|---|-----|-----|-------|-------|-----|
| 10 | 52 | 1 | 0 | 2 | 1.0 | 3 | 2 | 3 | 2.7 | 3.2 | 0.038 | 0.029 | 3.6 |
| 11 | | 2 | 1 | 3 | 2.0 | 3 | 2 | 3 | 2.7 | 3.2 | 0.039 | 0.030 | 3.6 |
| 12 | | 0 | 0 | 1 | 0.3 | 1 | 1 | 2 | 1.3 | 1.8 | 0.025 | 0.016 | 2.1 |
| 13 | concentration | 1 | 0 | 1 | 0.7 | 3 | 2 | 4 | 3.0 | 3.5 | 0.052 | 0.043 | 4.1 |
| 14 | | 1 | 0 | 1 | 0.7 | 2 | 2 | 3 | 2.3 | 2.8 | 0.027 | 0.018 | 3.1 |
| 15 | | 0 | 0 | 0 | 0.0 | 1 | 0 | 1 | 0.7 | 1.2 | 0.025 | 0.016 | 1.4 |
| mean | | | | | 0.8 | | | | 2.1 | 2.6 | 0.034 | 0.025 | 3.0 |
| ± S.D. | | | | | 0.7 | | | | 0.9 | 0.9 | 0.011 | 0.011 | 1.0 |

| cor-nea | treatment |
|---------|-----------|
| 1 | MEM |
| 2 | |
| 3 | |
| mean | |
| ± S.D. | |

| | compound no. |
|--------|---------------|
| 10 | 52 |
| 11 | |
| 12 | |
| 13 | concentration |
| 14 | 100% |
| 15 | |
| mean | |
| ± S.D. | |

| CALIBRATION | | |
|--------------|--------|---------|
| Filter paper | Holder | Opacity |
| - | - | 0 |
| 1 | B | 75 |
| | A | -75 |
| 2 | B | 158 |
| | A | -168 |
| 3 | B | 249 |
| | A | -259 |

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Appendix G7

**Dataset Received from Johnson & Johnson Pharmaceutical Research and
Development – A Division of Janssen Pharmaceutica N.V.
(BCOP Tests With Young vs. Old Corneas)**

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The use of corneas from animals of different age in the Bovine Corneal Opacity and Permeability (BCOP) assay.

Freddy Van Goethem, Marc Sysmans and Philippe Vanparys

Johnson & Johnson Pharmaceutical Research & Development, a division of Janssen Pharmaceutica N.V.,
Genetic and In Vitro Toxicology, Turnhoutseweg 30, B-2340 Beerse, Belgium.

BCOP results obtained with corneas from:

- 1) adult animals (> 24 months)
- 2) young animals (6 - 8 months)

Methodology

After background opacity measurement, medium was removed from the anterior compartment and corneas were treated with 0.75 ml of the test solution. Corneas (3 per group) were treated for 10 minutes followed by a 120 minutes recovery period. Medium was removed from the anterior compartment and replaced by 1 ml of a 0.4% sodium-fluorescein solution. Corneas were incubated in a horizontal position for 90 minutes at 32°C in a water-bath. After incubation, medium from the posterior chamber was removed and its optical density (OD) determined with a spectrophotometer at 490 nm. In Vitro Score = opacity + [15 x permeability]

Code of each compound is recorded on each raw data sheet

>>> compound 17 (acetone) need to be repeated since results did not comply with previously collected data in our laboratory. Due to the high vapor pressure of acetone (201.57 mmHg @ 22.0 °C), a technical artefact could have occurred...

The use of corneas from animals of different age in the Bovine Corneal Opacity and Permeability (BCOP) assay.

| Code | Compound | CAS No. | In vivo EU | In vivo GHS | In Vitro BCOP (>24 months) | | | | In Vitro BCOP (6 - 8 months) | | | |
|------|---------------------------------|------------|------------|-------------|----------------------------|-------|-------|-------|------------------------------|-------|-------|-------|
| | | | | | Opacity | Perm. | IVS | Class | Opacity | Perm. | IVS | Class |
| 1 | 3,3-dimethylpentane | 562-49-2 | NI | NI | 0.6 | 0.01 | 0.8 | NON | 0.0 | 0.02 | 0.3 | NON |
| 2 | 3-methoxy-1,2-propanediol | 623-39-2 | NI | NI | -0.3 | 0.00 | 0.2 | NON | 0.6 | 0.02 | 0.9 | NON |
| 3 | polyethylene glycol 400 | 25322-68-3 | NI | NI | -0.3 | 0.00 | -0.3 | NON | 0.0 | 0.08 | 1.1 | NON |
| 4 | glycerol | 56-81-5 | NI | NI | -1.0 | 0.01 | -0.9 | NON | -0.7 | -0.01 | -0.8 | NON |
| 5 | methyl cyclopentane | 96-37-7 | NI | NI | 1.0 | 0.43 | 7.5 | MILD | 1.3 | 0.26 | 5.2 | MILD |
| 6 | tween 20 | 9005-64-5 | NI | NI | 0.0 | 0.01 | 0.1 | NON | 0.0 | -0.01 | -0.1 | NON |
| 7 | methyl <i>iso</i> -butyl ketone | 108-10-1 | NI | NI | 6.6 | 1.07 | 22.7 | MILD | 5.7 | 0.83 | 18.1 | MILD |
| 8 | toluene | 108-88-3 | NI | NI | 6.3 | 3.18 | 54 | MOD | 6.0 | 1.46 | 28.0 | MOD |
| 9 | methyl amyl ketone | 110-43-0 | NI | NI | 5.3 | 1.80 | 32.3 | MOD | 4.0 | 0.99 | 18.8 | MILD |
| 10 | 2-methyl-1-pentanol | 105-30-6 | NI | 2B | 12.0 | 4.30 | 76.6 | SEV | 8.6 | 1.94 | 37.7 | MOD |
| 11 | ethanol | 64-17-5 | NI | 2B | 16.0 | 2.34 | 51 | MOD | 16.3 | 1.83 | 43.8 | MOD |
| 12 | sodium hydroxide (1%) | 1310-73-2 | R36 | 2B | 99.7 | 4.16 | 162 | SEV | 135.7 | 3.74 | 191.8 | SEV |
| 13 | triton X-100 (5%) | 9002-93-1 | R36 | 2B | 4.3 | 3.81 | 61.5 | SEV | 4.7 | 3.70 | 60.1 | SEV |
| 14 | 1-octanol | 111-87-5 | R36 | 2B | 10.0 | 5.24 | 88.6 | SEV | 10.3 | 1.53 | 33.3 | MOD |
| 15 | 2-ethyl-1-hexanol | 104-76-7 | R36 | 2B | 4.3 | 1.76 | 30.6 | MOD | 2.3 | 0.86 | 15.3 | MILD |
| 16 | n-hexanol | 111-27-3 | R36 | 2A | 15.3 | 3.73 | 71.2 | SEV | 14.0 | 3.62 | 68.2 | SEV |
| 17 | acetone | 67-64-1 | R36 | 2A | 39** | 2.95 | 83.2 | SEV | 91.3 | 2.86 | 134.2 | SEV |
| 18 | cyclohexanol | 108-93-0 | R41 | 1 | 15.3 | 5.04 | 90.7 | SEV | 11.6 | 2.13 | 43.6 | MOD |
| 19 | cetylpyridinium bromide (6%) | 140-72-7 | R41 | 1 | 11.7 | 1.01 | 26.8 | MOD | 15.0 | 1.66 | 39.9 | MOD |
| 20 | benzalkonium chloride (10%) | 8001-54-5 | R41 | 1 | 92.2 | 4.22 | 155.4 | SEV | 105.7 | 4.05 | 166.5 | SEV |

Prediction Model

| BCOP In Vitro Score | Class |
|---------------------|-------|
| ≤ 3 | NON |
| 3.1-25 | MILD |
| 25.1-55 | MOD |
| > 55.1 | SEV |

** to be repeated (technical artefact probably occurred)

• Compounds 1 → 20

• Adult animals (> 24 months)

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|--------------------------------|----------------|--------|
| Test article | 3,3-Dimethylpentane [562-49-2] | | |
| Batch No. | 14502CN | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A1 | OP-KIT | |
| Sequence | Intern 8B | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|-----------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 2 | 2 | 0 | 0.006 | 0.1 |
| 2 | MEM | 1 | 1 | 0 | 0.012 | 0.2 |
| 3 | 100% | 1 | 3 | 2 | 0.009 | 2.1 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.009 ± 0.003 | 0.8 ± 1.1 |
| | | Corrected value | | | Corrected value | |
| 4 | Test article | 1 | 3 | 2 | 0.023 | 1.5 |
| 5 | 100% | 0 | 1 | 1 | 0.018 | 0.4 |
| 6 | | 1 | 2 | 1 | 0.014 | 0.4 |
| Mean ± S.D. | | 0.6 ± 0.6 | | | 0.009 ± 0.005 | 0.8 ± 0.6 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------|
| | 1 | A 75 B | -75 |
| | 2 | A 154 B | -157 |
| | 3 | A 250 B | -255 |

Paraph

Date 18-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|-------------------------------|----------------|---------|
| Test article | 3-methoxy-1,2-propanediol 98% | | |
| Batch No. | 05307-078 | | |
| Concentration | 100% | Treatment time | 2 hours |
| Code | B1 ⁽²⁾ | | |
| Sequence | Intern 10A | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | MEM | 0 | 0 | 0 | 0.008 | 0.1 |
| 3 | 100% | 0 | 1 | 1 | 0.010 | 1.2 |
| Mean ± S.D. | | 0.3 ± 0.6 | | | 0.007 ± 0.003 | 0.5 ± 0.6 |
| | | | | | Corrected value | Corrected value |
| 4 | Test article | 0 | 0 | 0 | 0.019 | 0.012 |
| 5 | 100% | 0 | 0 | 0 | 0.066 | 0.059 |
| 6 | | 0 | 0 | 0 | 0.032 | 0.025 |
| Mean ± S.D. | | -0.3 ± 0.0 | | | 0.032 ± 0.024 | 0.2 ± 0.4 |

NC: Negative Control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|---|
| | 1 | A | | B |
| | 2 | A | | B |
| | 3 | A | | B |

Paraph

Date 31-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|-------------------------|----------------|--------|
| Test article | Polyethylene glycol 400 | | |
| Batch No. | 3H0110 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | C1 (3) | | |
| Sequence | 11A | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score | |
|---------------|--------------|------------|------|-----------|-----------------|-----------------|------|
| | | t0 | t120 | t120 - t0 | | | |
| 1 | NC | 0 | 0 | 0 | 0.002 | 0.0 | |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.003 | 0.0 | |
| 3 | 100% | 1 | 1 | 0 | 0.001 | 0.0 | |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.002 ± 0.001 | 0.0 ± 0.0 | |
| | | | | | Corrected value | Corrected value | |
| 4 | Test article | 0 | 0 | 0 | 0.000 | -0.002 | 0.0 |
| 5 | 100% | 0 | 0 | 0 | 0.003 | 0.001 | 0.0 |
| 6 | | 1 | 0 | -1 | 0.010 | 0.008 | -0.9 |
| Mean ± S.D. | | -0.3 ± 0.6 | | | 0.002 ± 0.005 | -0.3 ± 0.5 | |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|---|
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 28-Feb-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------|-----------------------|--------|
| Test article | Glycerol | | |
| Batch No. | HS03116BS | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B2 (4) | | |
| Sequence | Intern 10A | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | MEM | 0 | 0 | 0 | 0.008 | 0.1 |
| 3 | 100% | 0 | 1 | 1 | 0.010 | 1.2 |
| Mean ± S.D. | | 0.3 ± 0.6 | | | 0.007 ± 0.003 | 0.5 ± 0.6 |
| | | | | | Corrected value | Corrected value |
| 7 | Test article | 1 | 0 | -1 | -1.3 | -1.2 |
| 8 | 100% | 1 | 1 | 0 | -0.3 | -0.2 |
| 9 | | 1 | 0 | -1 | -1.3 | -1.2 |
| Mean ± S.D. | | -1.0 ± 0.6 | | | 0.009 ± 0.001 | -0.9 ± 0.6 |

NC: Negative Control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|---|
| | 1 | A | | B |
| | 2 | A | | B |
| | 3 | A | | B |

Paraph

Date

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---------------------|-----------------------|--------|
| Test article | Methyl cyclopentane | | |
| Batch No. | 09817PS-089 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | D5 | OP-KIT | |
| Sequence | 12A | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------------|------|-----------|------------------------|------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | NaCl 0.9% | 1 | 1 | 0 | 0.006 | 0.1 |
| 3 | 100% | 1 | 1 | 0 | 0.005 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.005 ± 0.001 | 0.1 ± 0.0 |
| | | | | | Corrected value | |
| 16 | Test article | 0 | 1 | 1 | 1.0 | 4.9 |
| 17 | 100% | 0 | 2 | 2 | 2.0 | 14.5 |
| 18 | | 0 | 0 | 0 | 0.0 | 3.1 |
| Mean ± S.D. | | 1.0 ± 1.0 | | | 0.433 ± 0.348 | 7.5 ± 6.1 |
| | | | | | Corrected value | |
| 16 | Test article | 0 | 1 | 1 | 1.0 | 4.9 |
| 17 | 100% | 0 | 2 | 2 | 2.0 | 14.5 |
| 18 | | 0 | 0 | 0 | 0.0 | 3.1 |
| Mean ± S.D. | | 1.0 ± 1.0 | | | 0.433 ± 0.348 | 7.5 ± 6.1 |

NC: Negative Control

| | | | | |
|----------------|---------------|---|----------------|---|
| REMARKS | Filter | | OPACITY | |
| | 1 | A | | B |
| | 2 | A | | B |
| | 3 | A | | B |

Paraph 20-Mar-00

Date

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|--|-----------------------|--------|
| Test article | Tween 20 | | |
| Batch No. | A010055102 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | C2 6 | | |
| Sequence | 11A | OP-KIT | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------------|------|-----------|----------------------|------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.002 | 0.0 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.003 | 0.0 |
| 3 | 100% | 1 | 1 | 0 | 0.001 | 0.0 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.002 ± 0.001 | 0.0 ± 0.0 |
| | | | | | Corrected value | |
| 7 | Test article | 0 | 0 | 0 | 0.010 | 0.1 |
| 8 | 100% | 0 | 0 | 0 | 0.023 | 0.3 |
| 9 | | 0 | 0 | 0 | 0.004 | 0.0 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.010 ± 0.010 | 0.1 ± 0.2 |

NC: Negative Control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|---|
| | 1 | A | | B |
| | 2 | A | | B |
| | 3 | A | | B |

Paraph

Date

Calculation of the in vitro eye irritation score for liquids

| | | |
|----------------------|---|------------------------------|
| Test article | Methyl iso-butyl ketone (4 methyl-2-pentanone) [108-10-1] | |
| Batch No. | CU 10369BU | |
| Concentration | 100% | Treatment time 10 min |
| Code | A2 (7) | |
| Sequence | Intern 8B | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 2 | 2 | 0 | 0.006 | 0.1 |
| 2 | MEM | 1 | 1 | 0 | 0.012 | 0.2 |
| 3 | 100% | 1 | 3 | 2 | 0.009 | 2.1 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.009 ± 0.003 | 0.8 ± 1.1 |
| | | | | | Corrected value | Corrected value |
| 7 | Test article | 1 | 8 | 7 | 6.3 | 34.8 |
| 8 | 100% | 0 | 7 | 7 | 6.3 | 15.5 |
| 9 | | 1 | 9 | 8 | 7.3 | 17.8 |
| Mean ± S.D. | | 6.6 ± 0.6 | | | 1.070 ± 0.720 | 22.7 ± 10.5 |

NC: Negative Control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|---|
| | 1 | A | | B |
| | 2 | A | | B |
| | 3 | A | | B |

Paraph

Date 18-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|--------------------|----------------|--------|
| Test article | Toluene [108-88-3] | | |
| Batch No. | 990281O001 | | |
| Concentration | 100% | Treatment time | |
| Code | D4 (8) | | |
| Sequence | 12A | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|-----------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | NaCl 0.9% | 1 | 1 | 0 | 0.006 | 0.1 |
| 3 | 100% | 1 | 1 | 0 | 0.005 | 0.1 |
| | Mean ± S.D. | 0.0 ± 0.0 | | | 0.005 ± 0.001 | 0.1 ± 0.0 |
| | | Corrected value | | | Corrected value | |
| 13 | Test article | 0 | 6 | 6 | 6.0 | 58.1 |
| 14 | | 0 | 7 | 7 | 7.0 | 49.4 |
| 15 | 100% | 0 | 6 | 6 | 6.0 | 54.5 |
| | Mean ± S.D. | 6.3 ± 0.6 | | | 3.178 ± 0.327 | 54.0 ± 4.4 |

NC: Negative Control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|---|
| | 1 | A | | B |
| | 2 | A | | B |
| | 3 | A | | B |

Paraph

Date 20-Mar-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|---|----------------|--------|
| Test article | methyl amyl ketone (2 heptanone) [110-43-0] | | |
| Batch No. | 66400-104 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A3 | OP-KIT | |
| Sequence | Intern 8B | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 2 | 2 | 0 | 0.006 | 0.1 |
| 2 | MEM | 1 | 1 | 0 | 0.012 | 0.2 |
| 3 | 100% | 1 | 3 | 2 | 0.009 | 2.1 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.009 ± 0.003 | 0.8 ± 1.1 |
| | | | | | Corrected value | Corrected value |
| 10 | Test article | 1 | 8 | 7 | 6.3 | 22.6 |
| 11 | 100% | 0 | 6 | 6 | 5.3 | 34.0 |
| 12 | | 2 | 7 | 5 | 4.3 | 40.2 |
| Mean ± S.D. | | 5.3 ± 1.0 | | | 1.799 ± 0.662 | 32.3 ± 8.9 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|---|
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 18-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|---------------------|----------------|--------|
| Test article | 2-methyl-1-pentanol | | |
| Batch No. | 05002PG | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B3 | OP-KIT | |
| Sequence | Intern 10A | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | MEM | 0 | 0 | 0 | 0.008 | 0.1 |
| 3 | 100% | 0 | 1 | 1 | 0.010 | 1.2 |
| Mean ± S.D. | | 0.3 ± 0.6 | | | 0.007 ± 0.003 | 0.5 ± 0.6 |
| | | | | | Corrected value | |
| 10 | Test article | 0 | 10 | 10 | 9.7 | 59.6 |
| 11 | 100% | 0 | 13 | 13 | 12.7 | 86.3 |
| 12 | | 0 | 14 | 14 | 13.7 | 83.8 |
| Mean ± S.D. | | 12.0 ± 2.1 | | | 4.304 ± 0.852 | 76.6 ± 14.7 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|---|
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 31-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|-------------------|-----------------------|--------|
| Test article | Ethanol [64-17-5] | | |
| Batch No. | 993O710002 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | D1 | OP-KIT | |
| Sequence | 12A | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|-------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | NaCl 0.9% | 1 | 1 | 0 | 0.006 | 0.1 |
| 3 | 100% | 1 | 1 | 0 | 0.005 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.005 ± 0.001 | 0.1 ± 0.0 |
| | | | | | Corrected value | Corrected value |
| 4 | Test article | 0 | 16 | 16 | 2.340 | 51.0 |
| 5 | 100% | 0 | 17 | 17 | 2.164 | 49.4 |
| 6 | | 0 | 15 | 15 | 2.520 | 52.7 |
| Mean ± S.D. | | 16.0 ± 1.0 | | | 2.336 ± 0.178 | 51.0 ± 1.7 |

NC: Negative Control

| | | | | |
|----------------|---|---------------|----------------|--|
| REMARKS | | Filter | OPACITY | |
| | 1 | | | |
| | 2 | | | |
| | 3 | | | |

Paraph

Date 20-Mar-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---------------------|-----------------------|---------------|
| Test article | Sodium hydroxide 1% | | |
| Batch No. | 66H0320 | | |
| Concentration | 1% | Treatment time | |
| Code | D3 | | |
| Sequence | 12A | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|--------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | NaCl 0.9% | 1 | 1 | 0 | 0.006 | 0.1 |
| 3 | 100% | 1 | 1 | 0 | 0.005 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.005 ± 0.001 | 0.1 ± 0.0 |
| | | | | | Corrected value | Corrected value |
| 10 | Test article | 0 | 101 | 101 | 101.0 | 160.2 |
| 11 | | 0 | 111 | 111 | 111.0 | 175.1 |
| 12 | 100% | 0 | 87 | 87 | 87.0 | 150.8 |
| Mean ± S.D. | | 99.7 ± 12.1 | | | 4.156 ± 0.182 | 162.0 ± 12.3 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|---|
| | | A | B |
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 20-Mar-00

Calculation of the in vitro eye irritation score for liquids

| | | |
|---------------|-------------------|-----------------------|
| Test article | Triton X-100 (5%) | |
| Batch No. | 28H2536 | |
| Concentration | 100% | Treatment time 10 min |
| Code | C4 (13) | |
| Sequence | 11A | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|-----------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.002 | 0.0 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.003 | 0.0 |
| 3 | 100% | 1 | 1 | 0 | 0.001 | 0.0 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.002 ± 0.001 | 0.0 ± 0.0 |
| | | Corrected value | | | Corrected value | |
| 13 | Test article | 1 | 6 | 5 | 5.0 | 69.0 |
| 14 | | 0 | 4 | 4 | 4.0 | 54.7 |
| 15 | 100% | 2 | 6 | 4 | 4.0 | 60.9 |
| Mean ± S.D. | | 4.3 ± 0.6 | | | 3.813 ± 0.442 | 61.5 ± 7.2 |

NC: Negative Control

| | | | |
|---------|--------|---------|---|
| REMARKS | Filter | OPACITY | |
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 28-Feb-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|------------|----------------|--------|
| Test article | n-octanol | | |
| Batch No. | 27336-019 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B4 | | |
| Sequence | Intern 10A | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | MEM | 0 | 0 | 0 | 0.008 | 0.1 |
| 3 | 100% | 0 | 1 | 1 | 0.010 | 1.2 |
| Mean ± S.D. | | 0.3 ± 0.6 | | | 0.007 ± 0.003 | 0.5 ± 0.6 |
| | | | | | Corrected value | |
| 13 | Test article | 1 | 7 | 6 | 5.180 | 83.3 |
| 14 | 100% | 0 | 15 | 15 | 5.828 | 102.0 |
| 15 | | 1 | 11 | 10 | 4.724 | 80.5 |
| Mean ± S.D. | | 10.0 ± 4.5 | | | 5.237 ± 0.555 | 88.6 ± 11.7 |

NC: Negative Control

| REMARKS | Filter | OPACITY | | |
|---------|--------|---------|---|---|
| | | 1 | A | B |
| | | 2 | A | B |
| | | 3 | A | B |

Paraph

Date 31-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|------------------------------|----------------|--------|
| Test article | 2-ethyl-1-hexanol [107-76-7] | | |
| Batch No. | 26812-019 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A4 | OP-KIT | |
| Sequence | Intern 8B | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 2 | 2 | 0 | 0.006 | 0.1 |
| 2 | MEM | 1 | 1 | 0 | 0.012 | 0.2 |
| 3 | 100% | 1 | 3 | 2 | 0.009 | 2.1 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.009 ± 0.003 | 0.8 ± 1.1 |
| | | | | | Corrected value | Corrected value |
| 13 | Test article | 2 | 6 | 4 | 3.3 | 29.6 |
| 14 | 100% | 1 | 7 | 6 | 5.3 | 38.1 |
| 15 | | 2 | 7 | 5 | 4.3 | 24.2 |
| Mean ± S.D. | | 4.3 ± 1.0 | | | 1.756 ± 0.430 | 30.6 ± 7.0 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|---|
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 18-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|----------------------|-----------------------|---------------|
| Test article | 1-Hexanol [111-27-3] | | |
| Batch No. | 381949/1 | | |
| Concentration | 100% | Treatment time | |
| Code | D2 | | |
| Sequence | 12A | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | NaCl 0.9% | 1 | 1 | 0 | 0.006 | 0.1 |
| 3 | 100% | 1 | 1 | 0 | 0.005 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.005 ± 0.001 | 0.1 ± 0.0 |
| | | | | | Corrected value | |
| 7 | Test article | 0 | 17 | 17 | 17.0 | 72.4 |
| 8 | 100% | 0 | 13 | 13 | 13.0 | 73.8 |
| 9 | | 0 | 16 | 16 | 16.0 | 67.5 |
| Mean ± S.D. | | 15.3 ± 2.1 | | | 3.728 ± 0.311 | 71.2 ± 3.3 |

NC: Negative Control

| | | | |
|----------------|---------------|----------------|---|
| REMARKS | Filter | OPACITY | |
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 20-Mar-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---|-----------------------|--------|
| Test article | Acetone [67-64-1] | | |
| Batch No. | 39H3430 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A5 17 | OP-KIT | |
| Sequence | Intern 8B | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|-----------------|--------------|------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 2 | 2 | 0 | 0.006 | 0.1 |
| 2 | MEM | 1 | 1 | 0 | 0.012 | 0.2 |
| 3 | 100% | 1 | 3 | 2 | 0.009 | 2.1 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.009 ± 0.003 | 0.8 ± 1.1 |
| Corrected value | | | | | Corrected value | |
| 16 | Test article | 1 | 36 | 35 | 34.3 | 59.5 |
| 17 | | 1 | 42 | 41 | 40.3 | 83.5 |
| 18 | 100% | 1 | 44 | 43 | 42.3 | 106.7 |
| Mean ± S.D. | | 39.0 ± 4.2 | | | 2.951 ± 1.309 | 83.2 ± 23.6 |

NC: Negative Control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|--|
| | 1 | A | B | |
| | 2 | A | B | |
| | 3 | A | B | |

Paraph

Date 18-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|--------------|-----------------------|---------------|
| Test article | Cyclohexanol | | |
| Batch No. | 18285-049 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B5 | | |
| Sequence | Intern 10A | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|-------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.004 | 0.1 |
| 2 | MEM | 0 | 0 | 0 | 0.008 | 0.1 |
| 3 | 100% | 0 | 1 | 1 | 0.010 | 1.2 |
| Mean ± S.D. | | 0.3 ± 0.6 | | | 0.007 ± 0.003 | 0.5 ± 0.6 |
| | | | | | Corrected value | Corrected value |
| 16 | Test article | 0 | 16 | 16 | 6.180 | 108.3 |
| 17 | | 0 | 16 | 16 | 3.288 | 64.9 |
| 18 | 100% | 0 | 14 | 14 | 5.680 | 98.8 |
| Mean ± S.D. | | 15.0 ± 1.2 | | | 5.042 ± 1.546 | 90.7 ± 22.8 |

NC: Negative Control

| | | | | |
|----------------|--|---------------|----------------|---|
| REMARKS | | Filter | OPACITY | |
| | | 1 | A _t | B |
| | | 2 | A _t | B |
| | | 3 | A _t | B |

Paraph

Eate 31-Jan-00

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------------|-----------------------|--------|
| Test article | Cetylpyridinium bromide (6%) | | |
| Batch No. | 105H0915 | | |
| Concentration | 100% | Treatment time | |
| Code | C5 | | |
| Sequence | 11A | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------------------|------|-----------|------------------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.002 | 0.0 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.003 | 0.0 |
| 3 | 100% | 1 | 1 | 0 | 0.001 | 0.0 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.002 ± 0.001 | 0.0 ± 0.0 |
| | | Corrected value | | | Corrected value | |
| 16 | Test article | 1 | 15 | 14 | 14.0 | 38.9 |
| 17 | | 1 | 12 | 11 | 11.0 | 20.8 |
| 18 | 100% | 0 | 10 | 10 | 10.0 | 20.7 |
| Mean ± S.D. | | 11.7 ± 2.1 | | | 1.008 ± 0.563 | 26.8 ± 10.5 |

NC: Negative Control

| | | | |
|----------------|---------------|----------------|---|
| REMARKS | Filter | OPACITY | |
| | 1 | A | B |
| | 2 | A | B |
| | 3 | A | B |

Paraph

Date 28-Jan-00

Benzalkonium chloride (10%)

| Exp. | Opacity | Permeability | In Vitro Score |
|-------------|-------------|--------------|----------------|
| 1 | 88.0 | 4.426 | 154.4 |
| 2 | 94.6 | 4.148 | 156.9 |
| 3 | 87.0 | 4.252 | 150.8 |
| 4 | 93.0 | 4.278 | 157.2 |
| 5 | 98.3 | 3.972 | 157.9 |
| mean | 92.2 | 4.2 | 155.4 |
| SD | 4.7 | 0.17 | 2.9 |

BCOP PREVALIDATION 1997

Calculation of in vitro eye irritation score for surfactants (10% w/w)

| | | | |
|---------------------|---------|----------------|--------|
| Test article | 1 (BAK) | | |
| Batch No. | 76H2520 | | |
| Concentration | 10 g/g% | Treatment time | 10 min |
| Prevalidation phase | II | | |
| Sequence | A | | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|-------------|--------------|------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 16 | NC | 1 | 2 | 1 | 0.005 | 1.1 |
| 17 | 0.9 % NaCl | 1 | 2 | 1 | 0.018 | 1.3 |
| 18 | 100% | 1 | 2 | 1 | 0.002 | 1.0 |
| Mean ± S.D. | | 1.0 ± 0.0 | | | 0.008 ± 0.009 | 1.1 ± 0.2 |
| | | | | | Corrected value | |
| 19 | Test article | 1 | 97 | 96 | 95.0 | 153.8 |
| 20 | | 1 | 82 | 81 | 80.0 | 143.6 |
| 21 | | 10g/g% | 1 | 91 | 90 | 89.0 |
| Mean ± S.D. | | 88.0 ± 7.5 | | | 4.426 ± 0.623 | 154.4 ± 11.1 |

NC: Negative control
PC: Positive control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|--------|
| | 1 | A | 75 | B -75 |
| | 2 | A | 153 | B -159 |
| | 3 | A | 236 | B -253 |

Paraph

Date 13-Feb-97

BCOP PREVALIDATION 1997

Calculation of in vitro eye irritation score for surfactants (10% w/w)

| | | | |
|----------------------------|---------|-----------------------|--------|
| Test article | I (BAK) | | |
| Batch No. | 76H2520 | | |
| Concentration | 10 g/g% | Treatment time | 10 min |
| Prevalidation phase | II | | |
| Sequence | D | | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|-------------|------------|------------|------|-----------|---------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 16 | NC | 1 | 1 | 0 | 0.005 | 0.1 |
| 17 | 0.9 % NaCl | 1 | 2 | 1 | 0.007 | 1.1 |
| 18 | 100% | 0 | 1 | 1 | 0.004 | 1.1 |
| Mean ± S.D. | | 0.7 ± 0.6 | | | 0.005 ± 0.002 | 0.8 ± 0.6 |

| No. | Test article | Opacity at | | | Corrected value | | Corrected value | | In vitro score |
|-------------|--------------|---------------|------|-----------|-----------------|--------------|-----------------|-------|----------------|
| | | t0 | t120 | t120 - t0 | | | | | |
| 19 | 10g/g% | 1 | 108 | 107 | 106.3 | 4.785 | 4.780 | 178.0 | |
| 20 | | 0 | 92 | 92 | 91.3 | 3.464 | 3.459 | 143.2 | |
| 21 | | 0 | 87 | 87 | 86.3 | 4.210 | 4.205 | 149.4 | |
| Mean ± S.D. | | ♦ 94.6 ± 10.4 | | | 4.148 ± 0.662 | 156.9 ± 18.6 | | | |

NC: Negative control
 PC: Positive control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|--------|
| | 1 | A | 75 | B -75 |
| | 2 | A | 153 | B -158 |
| | 3 | A | 235 | B -252 |

Paraph

Date

BCOP PREVALIDATION 1997

Calculation of in vitro eye irritation score for surfactants (10% w/w)

| | | | |
|----------------------------|---------|-----------------------|--------|
| Test article | 1 (BAK) | | |
| Batch No. | 76H2520 | | |
| Concentration | 10 g/g% | Treatment time | 10 min |
| Prevalidation phase | II | | |
| Sequence | F | | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|-----|-------------|------------|------|-----------|---------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 10 | NC | 0 | 1 | 1 | 0.009 | 1.1 |
| 11 | 0.9 % NaCl | 1 | 2 | 1 | 0.001 | 1.0 |
| 12 | 100% | 0 | 1 | 1 | 0.018 | 1.3 |
| | Mean ± S.D. | | | 1.0 ± 0.0 | 0.009 ± 0.009 | 1.1 ± 0.2 |

| No. | Test article | Opacity at | | | Corrected value | | Corrected value | In vitro score | |
|-----|--------------|------------|------|-----------|-----------------|--|-----------------|----------------|-------------|
| | | t0 | t120 | t120 - t0 | | | | | |
| 19 | 10g/g% | 1 | 88 | 87 | 86.0 | | 4.333 | 4.324 | 150.9 |
| 20 | | 1 | 82 | 81 | 80.0 | | 4.255 | 4.246 | 143.7 |
| 21 | | 1 | 97 | 96 | 95.0 | | 4.196 | 4.187 | 157.8 |
| | Mean ± S.D. | | | | 87.0 ± 7.5 | | 4.252 ± 0.069 | | 150.8 ± 7.1 |

NC: Negative control
 PC: Positive control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|--------|
| | 1 | A | 75 | B -75 |
| | 2 | A | 152 | B -158 |
| | 3 | A | 234 | B -252 |

Paraph

Date 13-Mar-97

BCOP PREVALIDATION 1997

Calculation of in vitro eye irritation score for surfactants (10% w/w)

| | | | |
|---------------------|---------|----------------|--------|
| Test article | I (BAK) | | |
| Batch No. | 76H2520 | | |
| Concentration | 10 g/g% | Treatment time | 10 min |
| Prevalidation phase | II | | |
| Sequence | G | | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|-------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 19 | NC | 3 | 3 | 0 | 0.008 | 0.1 |
| 20 | 0.9 % NaCl | 0 | 0 | 0 | 0.038 | 0.6 |
| 21 | 100% | 1 | 1 | 0 | 0.012 | 0.2 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.019 ± 0.016 | 0.3 ± 0.3 |
| | | | | | Corrected value | Corrected value |
| 25 | Test article | 0 | 96 | 96 | 96.0 | 163.7 |
| 26 | | 0 | 93 | 93 | 93.0 | 171.0 |
| 27 | 10g/g% | 2 | 92 | 90 | 90.0 | 136.8 |
| Mean ± S.D. | | 93.0 ± 3.0 | | | 4.278 ± 1.058 | 157.2 ± 18.0 |

NC: Negative control
PC: Positive control

| REMARKS | Filter | | OPACITY | |
|---------|--------|---|---------|--------|
| | 1 | A | 75 | B -75 |
| | 2 | A | 152 | B -158 |
| | 3 | A | 231 | B -249 |

Paraph

Date 20-Mar-97

BCOP PREVALIDATION 1997

Calculation of in vitro eye irritation score for surfactants (10% w/w)

| | | | |
|----------------------------|---------|-----------------------|--------|
| Test article | 1 (BAK) | | |
| Batch No. | 76H2520 | | |
| Concentration | 10 g/g% | Treatment time | 10 min |
| Prevalidation phase | II | | |
| Sequence | F H | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|-------------------|------|-----------|----------------------|--------------------|
| | | t0 | t120 | t120 - t0 | | |
| 10 | NC | 1 | 1 | 0 | 0.013 | 0.2 |
| 11 | 0.9 % NaCl | 1 | 4 | 3 | 0.013 | 3.2 |
| 12 | 100% | 1 | 1 | 0 | 0.021 | 0.3 |
| Mean ± S.D. | | 1.0 ± 1.7 | | | 0.016 ± 0.005 | 1.2 ± 1.7 |
| | | | | | Corrected value | Corrected value |
| 19 | Test article | 1 | 99 | 98 | 97.0 | 157.5 |
| 20 | | 1 | 99 | 98 | 97.0 | 161.4 |
| 21 | 10g/g% | 1 | 103 | 102 | 101.0 | 154.8 |
| Mean ± S.D. | | 98.3 ± 2.3 | | | 3.972 ± 0.360 | 157.9 ± 3.3 |

NC: Negative control

PC: Positive control

| | | | | |
|----------------|---------------|----------------|-----|--------|
| REMARKS | Filter | OPACITY | | |
| | 1 | A | 75 | B -75 |
| | 2 | A | 152 | B -161 |
| | 3 | A | 236 | B -253 |

Paraph

Date 21-Mar-97

• Compounds 1 → 20

• young animals (6-8 months)

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|---------------|--------------------------------|----------------|--------|
| Test article | 3,3 Dimethylpentane [562-49-2] | | |
| Batch No. | 14602CN | | |
| Concentration | 99% | Treatment time | 10 min |
| Code | A1 | | |
| Sequence | 2005/ Intern3 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.008 | 0.1 |
| 2 | MEM | 0 | 0 | 0 | 0.026 | 0.4 |
| 3 | 100% | 0 | 0 | 0 | 0.006 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.013 ± 0.011 | 0.2 ± 0.2 |
| | | | | | Corrected value | Corrected value |
| 4 | Test article | 0 | 0 | 0 | 0.046 | 0.5 |
| 5 | | 0 | 0 | 0 | 0.028 | 0.2 |
| 6 | 100% | 0 | 0 | 0 | 0.023 | 0.2 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.019 ± 0.012 | 0.3 ± 0.2 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 158 | B -160 |
| | 3 | A 256 | B -258 |

| | | | |
|--------|-----------|--------|-----|
| Paraph | | Filter | |
| | | 0.1 | 1 |
| | | 0.3 | 15 |
| Date | 07-Mar-05 | 0.6 | 50 |
| | | 0.8 | 90 |
| | | 1 | 145 |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|--------------------------------------|-----------------------|---------------|
| Test article | 3-methoxy-1,2-propanediol [623-39-2] | | |
| Batch No. | A0155893001 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B1 | | |
| Sequence | 2005/ intern2 kalveren | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.084 | 1.3 |
| 2 | NaCl 0.9% | 0 | 2 | 2 | 0.085 | 3.3 |
| 3 | 100% | 1 | 1 | 0 | 0.036 | 0.5 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.068 ± 0.028 | 1.7 ± 1.4 |
| | | | | | Corrected value | Corrected value |
| 4 | Test article | 0 | 0 | 0 | 0.090 | -0.4 |
| 5 | | 2 | 6 | 4 | 0.096 | 3.7 |
| 6 | 100% | 0 | 0 | 0 | 0.070 | -0.7 |
| Mean ± S.D. | | 0.6 ± 2.3 | | | 0.017 ± 0.014 | 0.9 ± 2.5 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 155 | B -161 |
| | 3 | A 259 | B -261 |

| | | | | |
|---------------|-----------|--------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 01-Mar-05 | 0.6 | 51 | |
| | | 0.8 | 91 | |
| | | 1 | 143 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|--------------------------------------|-----------------------|--------|
| Test article | polyethylene glycol 400 [25322-68-3] | | |
| Batch No. | S23152-394 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | C1 (3) | | |
| Sequence | 2005/ intern 1 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------------------|------|-----------|------------------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.023 | 0.3 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.069 | 1.0 |
| 3 | 100% | 0 | 0 | 0 | 0.044 | 0.7 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.045 ± 0.023 | 0.7 ± 0.4 |
| | | Corrected value | | | Corrected value | |
| 4 | Test article | 0 | 0 | 0 | 0.102 | 0.9 |
| 5 | | 0 | 0 | 0 | 0.178 | 2.0 |
| 6 | 100% | 0 | 0 | 0 | 0.080 | 0.5 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.075 ± 0.051 | 1.1 ± 0.8 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------------|
| | 1 | A | 75 B -75 |
| | 2 | A | 157 B -161 |
| | 3 | A | 260 B -259 |

| | | | | |
|---------------|-----------|--------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 28-Feb-05 | 0.6 | 50 | |
| | | 0.8 | 88 | |
| | | 1 | 140 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------|-----------------------|--------|
| Test article | glycerol [56-81-5] | | |
| Batch No. | 13574HC | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B2 (4) | | |
| Sequence | 2005/ intern2 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.084 | 1.3 |
| 2 | NaCl 0.9% | 0 | 2 | 2 | 0.085 | 3.3 |
| 3 | 100% | 1 | 1 | 0 | 0.036 | 0.5 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.068 ± 0.028 | 1.7 ± 1.4 |
| | | | | | Corrected value | Corrected value |
| 7 | Test article | 0 | 0 | 0 | 0.008 | -1.6 |
| 8 | 100% | 0 | 0 | 0 | 0.009 | -1.6 |
| 9 | | 2 | 2 | 0 | 0.161 | 0.7 |
| Mean ± S.D. | | -0.7 ± 0.0 | | | -0.009 ± 0.088 | -0.8 ± 1.3 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------------|
| | 1 | A | 75 B -75 |
| | 2 | A | 155 B -161 |
| | 3 | A | 259 B -261 |

| | | | | |
|---------------|-----------|--------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 01-Mar-05 | 0.6 | 51 | |
| | | 0.8 | 91 | |
| | | 1 | 143 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|-------------------------------|-----------------------|--------|
| Test article | Methyl cyclopentane [96-37-7] | | |
| Batch No. | 1097605 | | |
| Concentration | 95% | Treatment time | 10 min |
| Code | D5 (5) | | |
| Sequence | 2005/ Intern3 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.008 | 0.1 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.026 | 0.4 |
| 3 | 100% | 0 | 0 | 0 | 0.006 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.013 ± 0.011 | 0.2 ± 0.2 |
| | | | | | Corrected value | Corrected value |
| 16 | Test article | 0 | 2 | 2 | 2.0 | 8.5 |
| 17 | | 1 | 2 | 1 | 1.0 | 3.5 |
| 18 | 100% | 0 | 1 | 1 | 1.0 | 3.7 |
| Mean ± S.D. | | 1.3 ± 0.6 | | | 0.260 ± 0.149 | 5.2 ± 2.8 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------|
| | 1 | A 75 B | -75 |
| | 2 | A 158 B | -160 |
| | 3 | A 256 B | -258 |

| | | | | | |
|---------------|-----------|---------------|-----|--|--|
| Paraph | | Filter | | | |
| | | 0.1 | 1 | | |
| | | 0.3 | 15 | | |
| Date | 07-Mar-05 | 0.6 | 50 | | |
| | | 0.8 | 90 | | |
| | | 1 | 145 | | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|-------------------------|-----------------------|--------|
| Test article | Tween 20 {9005-64-5} | | |
| Batch No. | 094K01761 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | C2 | ⑥ | |
| Sequence | 2005/Intern4 kalverogen | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score | |
|-----------------|--------------|------------|------|-----------|-----------------|----------------|------------|
| | | t0 | t120 | t120 - t0 | | | |
| 1 | NC | 0 | 0 | 0 | 0.045 | 0.7 | |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.022 | 0.3 | |
| 3 | 100% | 0 | 0 | 0 | 0.012 | 0.2 | |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.026 ± 0.017 | 0.4 ± 0.3 | |
| Corrected value | | | | | Corrected value | | |
| 19 | Test article | 0 | 0 | 0 | 0.028 | 0.002 | |
| 20 | | 0 | 0 | 0 | 0.021 | -0.005 | |
| 21 | 100% | 0 | 0 | 0 | 0.013 | -0.013 | |
| Mean ± S.D. | | 0.0 ± 0.0 | | | -0.005 ± 0.008 | | -0.1 ± 0.1 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------------|
| | 1 | A | 75 B -75 |
| | 2 | A | 156 B -158 |
| | 3 | A | 263 B -258 |

| Paraph | Filter | |
|-------------|--------|-----|
| | 0.1 | 0 |
| | 0.3 | 15 |
| Date | 0.6 | 50 |
| | 0.8 | 89 |
| | 1 | 141 |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---|-----------------------|--------|
| Test article | Methyl iso-butyl ketone (4 methyl-2-pentanone) [108-10-1] | | |
| Batch No. | 1127250 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A2 (7) | | |
| Sequence | 2005/ internI kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.023 | 0.3 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.069 | 1.0 |
| 3 | 100% | 0 | 0 | 0 | 0.044 | 0.7 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.045 ± 0.023 | 0.7 ± 0.4 |
| | | | | | Corrected value | Corrected value |
| 7 | Test article | 0 | 3 | 3 | 0.714 | 13.0 |
| 8 | 100% | 0 | 8 | 8 | 0.861 | 20.2 |
| 9 | | 0 | 6 | 6 | 1.059 | 21.2 |
| Mean ± S.D. | | 5.7 ± 2.5 | | | 0.833 ± 0.173 | 18.1 ± 4.5 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------------|
| | 1 | A | 75 B -75 |
| | 2 | A | 157 B -161 |
| | 3 | A | 260 B -259 |

| | | | | |
|---------------|-----------|---------------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 28-Feb-05 | 0.6 | 50 | |
| | | 0.8 | 88 | |
| | | 1 | 140 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------|-----------------------|--------|
| Test article | Toluene [108-88-3] | | |
| Batch No. | A0204558001 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | D4 | ⑧ | |
| Sequence | 2005/ Intern3 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.008 | 0.1 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.026 | 0.4 |
| 3 | 100% | 0 | 0 | 0 | 0.006 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.013 ± 0.011 | 0.2 ± 0.2 |
| | | | | | Corrected value | Corrected value |
| 13 | Test article | 0 | 2 | 2 | 2.0 | 25.1 |
| 14 | 100% | 0 | 9 | 9 | 9.0 | 36.6 |
| 15 | | 0 | 7 | 7 | 7.0 | 22.3 |
| Mean ± S.D. | | 6.0 ± 3.6 | | | 1.464 ± 0.416 | 28.0 ± 7.6 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------------|
| | 1 | A | 75 B -75 |
| | 2 | A | 158 B -160 |
| | 3 | A | 256 B -258 |

| | | | | |
|---------------|-----------|--------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 15 | |
| Date | 07-Mar-05 | 0.6 | 50 | |
| | | 0.8 | 90 | |
| | | 1 | 145 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---|-----------------------|--------|
| Test article | methyl amyl ketone (2 heptanone) [110-43-0] | | |
| Batch No. | 13622JC | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A3 (9) | | |
| Sequence | 2005/ intern 1 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score | | |
|--------------------|--------------|------------------------|------|-----------|---------------|------------------------|-------|------------|
| | | t0 | t120 | t120 - t0 | | | | |
| 1 | NC | 0 | 0 | 0 | 0.023 | 0.3 | | |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.069 | 1.0 | | |
| 3 | 100% | 0 | 0 | 0 | 0.044 | 0.7 | | |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.045 ± 0.023 | 0.7 ± 0.4 | | |
| | | Corrected value | | | | Corrected value | | |
| 10 | Test article | 0 | 5 | 5 | 5.0 | 1.065 | 1.020 | 20.3 |
| 11 | 100% | 0 | 5 | 5 | 5.0 | 1.030 | 0.985 | 19.8 |
| 12 | | 2 | 4 | 2 | 2.0 | 0.995 | 0.950 | 16.3 |
| Mean ± S.D. | | 4.0 ± 1.7 | | | | 0.985 ± 0.035 | | 18.8 ± 2.2 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 157 | B -161 |
| | 3 | A 260 | B -259 |

| | | | | |
|---------------|-----------|--------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 28-Feb-05 | 0.6 | 50 | |
| | | 0.8 | 88 | |
| | | 1 | 140 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|--------------------------------|--|--------|
| Test article | 2-methyl-1-pentanol [105-30-6] | | |
| Batch No. | 451942/1 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B3 | 10 | |
| Sequence | 2005/ intern 2 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score | | |
|--------------------|--------------|------------------------|------|-----------|---------------|------------------------|-------|------------|
| | | t0 | t120 | t120 - t0 | | | | |
| 1 | NC | 0 | 0 | 0 | 0.084 | 1.3 | | |
| 2 | NaCl 0.9% | 0 | 2 | 2 | 0.085 | 3.3 | | |
| 3 | 100% | 1 | 1 | 0 | 0.036 | 0.5 | | |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.068 ± 0.028 | 1.7 ± 1.4 | | |
| | | Corrected value | | | | Corrected value | | |
| 10 | Test article | 0 | 11 | 11 | 10.3 | 1.801 | 1.733 | 36.3 |
| 11 | | 0 | 8 | 8 | 7.3 | 2.436 | 2.368 | 42.8 |
| 12 | 100% | 0 | 9 | 9 | 8.3 | 1.773 | 1.705 | 33.9 |
| Mean ± S.D. | | 8.6 ± 1.5 | | | | 1.935 ± 0.375 | | 37.7 ± 4.6 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------------|
| | 1 | A | 75 B -75 |
| | 2 | A | 155 B -161 |
| | 3 | A | 259 B -261 |

| | | | | | |
|---------------|-----------|--------|--|-----|--|
| Paraph | | Filter | | | |
| | | 0.1 | | 1 | |
| | | 0.3 | | 16 | |
| Date | 01-Mar-05 | 0.6 | | 51 | |
| | | 0.8 | | 91 | |
| | | 1 | | 143 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------|-----------------------|--------|
| Test article | Ethanol [64-17-5] | | |
| Batch No. | K33957583 448 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | D1 | | |
| Sequence | 2005/ Intern3 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|-------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.008 | 0.1 |
| 2 | NaCl0.9% | 0 | 0 | 0 | 0.026 | 0.4 |
| 3 | 100% | 0 | 0 | 0 | 0.006 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.013 ± 0.011 | 0.2 ± 0.2 |
| | | | | | Corrected value | Corrected value |
| 7 | Test article | 0 | 18 | 18 | 18.0 | 52.4 |
| 8 | 100% | 0 | 16 | 16 | 16.0 | 41.3 |
| 9 | | 0 | 15 | 15 | 15.0 | 37.8 |
| Mean ± S.D. | | 16.3 ± 1.5 | | | 1.834 ± 0.408 | 43.8 ± 7.6 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 158 | B -160 |
| | 3 | A 256 | B -258 |

| Paraph | Filter | 0.1 | 1 |
|-------------|-----------|-----|-----|
| | | 0.3 | 15 |
| Date | 07-Mar-05 | 0.6 | 50 |
| | | 0.8 | 90 |
| | | 1 | 145 |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---------------------------------|-----------------------|--------|
| Test article | Sodium hydroxide 1% [1310-73-2] | | |
| Batch No. | 014K0006 | | |
| Concentration | 1% | Treatment time | 10 min |
| Code | D3 | (12) | |
| Sequence | 2005/Intern4 kalverogen | OP-KIT | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|------------------------|--------------|--------------|------|-----------|------------------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.045 | 0.7 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.022 | 0.3 |
| 3 | 100% | 0 | 0 | 0 | 0.012 | 0.2 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.026 ± 0.017 | 0.4 ± 0.3 |
| Corrected value | | | | | Corrected value | |
| 16 | Test article | 0 | 139 | 139 | 139.0 | 206.7 |
| 17 | | 0 | 145 | 145 | 145.0 | 183.6 |
| 18 | 100% | 0 | 123 | 123 | 123.0 | 185.1 |
| Mean ± S.D. | | 135.7 ± 11.4 | | | 3.742 ± 1.029 | 191.8 ± 12.9 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 156 | B -158 |
| | 3 | A 263 | B -258 |

| Paraph | Filter | 0.1 | 0 | 0.3 | 15 | 0.6 | 50 | 0.8 | 89 | 1 | 141 |
|-------------|-----------|-----|---|-----|----|-----|----|-----|----|---|-----|
| Date | 14-Mar-05 | | | | | | | | | | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|-------------------------------|-----------------------|--------|
| Test article | Triton X-100 (5%) [9002-93-1] | | |
| Batch No. | A019437801 | | |
| Concentration | 5% | Treatment time | 10 min |
| Code | C4 (13) | | |
| Sequence | 2005/Intern4 kalverogen | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|------------------------|--------------|------------|------|-----------|------------------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.045 | 0.7 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.022 | 0.3 |
| 3 | 100% | 0 | 0 | 0 | 0.012 | 0.2 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.026 ± 0.017 | 0.4 ± 0.3 |
| Corrected value | | | | | Corrected value | |
| 10 | Test article | 0 | 5 | 5 | 5.0 | 69.1 |
| 11 | | 0 | 5 | 5 | 5.0 | 49.7 |
| 12 | 100% | 0 | 4 | 4 | 4.0 | 61.5 |
| Mean ± S.D. | | 4.7 ± 0.6 | | | 3.695 ± 0.659 | 60.1 ± 9.8 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 156 | B -158 |
| | 3 | A 263 | B -258 |

| | | | |
|---------------|-----------|--------|-----|
| Paraph | | Filter | |
| | | 0.1 | 0 |
| | | 0.3 | 15 |
| Date | 14-Mar-05 | 0.6 | 50 |
| | | 0.8 | 89 |
| | | 1 | 141 |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------|-----------------------|--------|
| Test article | α-octanol [111-87-5] | | |
| Batch No. | S02961-454 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B4 | (14) | |
| Sequence | 2005/ intern2 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.084 | 1.3 |
| 2 | NaCl 0.9% | 0 | 2 | 2 | 0.085 | 3.3 |
| 3 | 100% | 1 | 1 | 0 | 0.036 | 0.5 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.068 ± 0.028 | 1.7 ± 1.4 |
| | | | | | Corrected value | Corrected value |
| 13 | Test article | 1 | 7 | 6 | 5.3 | 23.2 |
| 14 | | 0 | 18 | 18 | 17.3 | 44.8 |
| 15 | 100% | 0 | 9 | 9 | 8.3 | 31.8 |
| Mean ± S.D. | | 10.3 ± 6.2 | | | 1.533 ± 0.322 | 33.3 ± 10.9 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 155 | B -161 |
| | 3 | A 259 | B -261 |

| | | | | | |
|---------------|-----------|--------|-----|--|--|
| Paraph | | Filter | | | |
| | | 0.1 | 1 | | |
| | | 0.3 | 16 | | |
| Date | 01-Mar-05 | 0.6 | 51 | | |
| | | 0.8 | 91 | | |
| | | 1 | 143 | | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------------|-----------------------|--------|
| Test article | 2-ethyl-1-hexanol [107-76-7] | | |
| Batch No. | S01263-011 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A4 | (15) | |
| Sequence | 2005/ intern I kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.023 | 0.3 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.069 | 1.0 |
| 3 | 100% | 0 | 0 | 0 | 0.044 | 0.7 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.045 ± 0.023 | 0.7 ± 0.4 |
| | | | | | Corrected value | Corrected value |
| 13 | Test article | 0 | 4 | 4 | 4.0 | 11.2 |
| 14 | | 0 | 0 | 0 | 0.0 | 5.3 |
| 15 | 100% | 0 | 3 | 3 | 3.0 | 29.4 |
| Mean ± S.D. | | 2.3 ± 2.1 | | | 0.864 ± 0.777 | 15.3 ± 12.6 |

NC: Negative Control

| | | | | |
|----------------|---------------|----------------|-----|--------|
| REMARKS | Filter | OPACITY | | |
| | 1 | A | 75 | B -75 |
| | 2 | A | 157 | B -161 |
| | 3 | A | 260 | B -259 |

| | | | | |
|---------------|-----------|---------------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 28-Feb-05 | 0.6 | 50 | |
| | | 0.8 | 88 | |
| | | 1 | 140 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------|-----------------------|--------|
| Test article | 1-Hexanol [111-27-3] | | |
| Batch No. | A020123401 | | |
| Concentration | 98% | Treatment time | 10 min |
| Code | D2 | OP-KIT | |
| Sequence | 2005/ Intern3 kalveren | | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.008 | 0.1 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.026 | 0.4 |
| 3 | 100% | 0 | 0 | 0 | 0.006 | 0.1 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.013 ± 0.011 | 0.2 ± 0.2 |
| | | | | | Corrected value | Corrected value |
| 10 | Test article | 0 | 16 | 16 | 3.624 | 70.2 |
| 11 | | 0 | 13 | 13 | 3.232 | 61.3 |
| 12 | 100% | 0 | 13 | 13 | 4.028 | 73.2 |
| Mean ± S.D. | | 14.0 ± 1.7 | | | 3.615 ± 0.398 | 68.2 ± 6.2 |

NC: Negative Control

| REMARKS | Filter | A | B | OPACITY |
|---------|--------|---|---|----------|
| | 1 | A | B | 75 -75 |
| | 2 | A | B | 158 -160 |
| | 3 | A | B | 256 -258 |

Paraph

Date 07-Mar-05

| | | |
|--------|-----|--|
| Filter | | |
| 0.1 | 1 | |
| 0.3 | 15 | |
| 0.6 | 50 | |
| 0.8 | 90 | |
| 1 | 145 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|-------------------------|-----------------------|--------|
| Test article | Acetone [67-64-1] | | |
| Batch No. | 442942/1 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | A5 | 17 | |
| Sequence | 2005/ intern 1 kalveren | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|-------------|------|-----------|-----------------|-----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.023 | 0.3 |
| 2 | | 0 | 0 | 0 | 0.069 | 1.0 |
| 3 | 100% | 0 | 0 | 0 | 0.044 | 0.7 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.045 ± 0.023 | 0.7 ± 0.4 |
| | | | | | Corrected value | Corrected value |
| 16 | Test article | 0 | 101 | 101 | 101.0 | 142.7 |
| 17 | | 0 | 92 | 92 | 92.0 | 128.1 |
| 18 | 100% | 0 | 81 | 81 | 81.0 | 131.7 |
| Mean ± S.D. | | 91.3 ± 10.0 | | | 2.856 ± 0.493 | 134.2 ± 7.6 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 157 | B -161 |
| | 3 | A 260 | B -259 |

| | | | | |
|---------------|-----------|---------------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 28-Feb-05 | 0.6 | 50 | |
| | | 0.8 | 88 | |
| | | 1 | 140 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|------------------------|-----------------------|---------------|
| Test article | cyclohexanol | | |
| Batch No. | S05238-044 | | |
| Concentration | 100% | Treatment time | 10 min |
| Code | B5 | | |
| Sequence | 2005/ intern2 kalveren | | OP-KIT |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|--------------------|--------------|-------------------|------|-----------|------------------------|------------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.084 | 1.3 |
| 2 | NaCl 0.9% | 0 | 2 | 2 | 0.085 | 3.3 |
| 3 | 100% | 1 | 1 | 0 | 0.036 | 0.5 |
| Mean ± S.D. | | 0.7 ± 1.2 | | | 0.068 ± 0.028 | 1.7 ± 1.4 |
| | | | | | Corrected value | Corrected value |
| 16 | Test article | 1 | 13 | 12 | 11.3 | 36.8 |
| 17 | | 0 | 12 | 12 | 11.3 | 38.7 |
| 18 | 100% | 0 | 13 | 13 | 12.3 | 55.4 |
| Mean ± S.D. | | 11.6 ± 0.6 | | | 2.132 ± 0.644 | 43.6 ± 10.2 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|--------|
| | 1 | A 75 | B -75 |
| | 2 | A 155 | B -161 |
| | 3 | A 259 | B -261 |

| | | | | |
|---------------|-----------|---------------|-----|--|
| Paraph | | Filter | | |
| | | 0.1 | 1 | |
| | | 0.3 | 16 | |
| Date | 01-Mar-05 | 0.6 | 51 | |
| | | 0.8 | 91 | |
| | | 1 | 143 | |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|---|-----------------------|--------|
| Test article | Cetylpyridinium bromide (6%) [140-72-7] | | |
| Batch No. | 038H2509 | | |
| Concentration | 6% | Treatment time | 10 min |
| Code | C5 | | |
| Sequence | 2005/Intern4 kalverogen | OP-KIT | |

| No. | Treatment | Opacity at | | | Permeability | In vitro score |
|------------------------|--------------|-------------------|------|-----------|------------------------|--------------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.045 | 0.7 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.022 | 0.3 |
| 3 | 100% | 0 | 0 | 0 | 0.012 | 0.2 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.026 ± 0.017 | 0.4 ± 0.3 |
| Corrected value | | | | | Corrected value | |
| 13 | Test article | 0 | 20 | 20 | 2.252 | 53.4 |
| 14 | 100% | 0 | 13 | 13 | 1.879 | 40.8 |
| 15 | | 0 | 12 | 12 | 0.919 | 25.4 |
| Mean ± S.D. | | 15.0 ± 4.4 | | | 1.657 ± 0.688 | 39.9 ± 14.0 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------|
| | | A | B |
| | 1 | 75 | -75 |
| | 2 | 156 | -158 |
| | 3 | 263 | -258 |

| Paraph | Filter | |
|-------------|--------|-----|
| | 0.1 | 0 |
| | 0.3 | 15 |
| Date | 0.6 | 50 |
| | 0.8 | 89 |
| | 1 | 141 |

RDF/BCO/18

VALIDATION

Calculation of the in vitro eye irritation score for liquids

| | | | |
|----------------------|----------------------------------|-----------------------|--------|
| Test article | Benzalkoniumchloride [8001-54-5] | | |
| Batch No. | 033K2544 | | |
| Concentration | 10g/g% | Treatment time | 10 min |
| Code | C3 20 | | |
| Sequence | 2005/Intern4 kalverogen | OP-KIT | |

| No. Cornea | Treatment | Opacity at | | | Permeability | In vitro score |
|---------------|--------------|--------------|------|-----------|-----------------|----------------|
| | | t0 | t120 | t120 - t0 | | |
| 1 | NC | 0 | 0 | 0 | 0.045 | 0.7 |
| 2 | NaCl 0.9% | 0 | 0 | 0 | 0.022 | 0.3 |
| 3 | 100% | 0 | 0 | 0 | 0.012 | 0.2 |
| Mean ± S.D. | | 0.0 ± 0.0 | | | 0.026 ± 0.017 | 0.4 ± 0.3 |
| | | | | | Corrected value | |
| 7 | Test article | 0 | 115 | 115 | 115.0 | 174.9 |
| 8 | 100% | 0 | 95 | 95 | 95.0 | 152.5 |
| 9 | | 0 | 107 | 107 | 107.0 | 172.0 |
| Mean ± S.D. | | 105.7 ± 10.1 | | | 4.050 ± 0.255 | 166.5 ± 12.2 |

NC: Negative Control

| REMARKS | Filter | OPACITY | |
|---------|--------|---------|------|
| | | A | B |
| | 1 | 75 | -75 |
| | 2 | 156 | -158 |
| | 3 | 263 | -258 |

| | | | | |
|--------|-----------|--------|-----|-----|
| Paraph | | Filter | 0.1 | 0 |
| | | | 0.3 | 15 |
| Date | 14-Mar-05 | | 0.6 | 50 |
| | | | 0.8 | 89 |
| | | | 1 | 141 |

RDF/BCO/18