

Appendix C
Selected Cleaning Alternatives

**Alternative Cleaners Examined During Preliminary Screening Tests for Coating
and Adhesive Application Equipment Cleaning**

Material Safety Data Sheet

EMERGENCY PHONE NUMBERS 714-701-9500	HAZARD RATING 4 - EXTREME 3 - HIGH 2 - MODERATE 1 - SLIGHT 0 - INSIGNIFICANT **SEE SECTION V	
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I. General Information			
Manufacturer UNIVERSAL CHEMICAL TECHNOLOGIES 1517 N. Harmony Circle Anaheim, CA 92807		Trade Name & Synonyms Power Kleen: Spray Clean 12	
DOT Hazard Classification Alkaline Liquid	Chemical Family	Mixture	
Proper DOT Shipping Name Spray Clean 12			
Prepared By: Date:	D. C. ATKINS & SONS, INC. 7/9/99	LEGEND:	N/E = Not Established N/A = Not Applicable

II. Ingredients			
Hazardous Components	CAS NUMBER	Percent	ACOTH TLV
Does not contain materials considered hazardous per 29 CFR 1910.1200			

III. Physical Data			
Boiling Point (F)	Approx. 215 F	Specific Gravity (H ₂ O = 1)	1.1
atm Pressure (mm Hg)	Approx. 18	Percent Volatile	Approx. 82 VOC=0
atm Density (Air=1)	< 1	Evaporation Rate (BuOAg = 1)	Approx. 0.4
Stability in Water	Complete	Reactivity in Water	None
Appearance & Odor	Clear Liquid, No Odor	pH	10-13

IV. Fire & Explosion Hazard Data			
Flash Point (Test Method): Self-Flash Closed Tester No Flash	Flammable Limits	NA	LEL NA LEL
	Auto-ignition Temperature	NE	
Extinguishing Media <input checked="" type="checkbox"/> Foam <input type="checkbox"/> Alcohol Foam <input type="checkbox"/> CO ₂ <input checked="" type="checkbox"/> Dry Chemical <input type="checkbox"/> Water Spray <input checked="" type="checkbox"/> Water <input type="checkbox"/> Not Applicable <input type="checkbox"/> Other			
Special Fire Fighting Procedures			
None			
Usual Fire & Explosion Hazards			
None			

Spray Clean 12		V. HEALTH HAZARD DATA	
Threshold Limit Value of Product	OSHA PEL	ACGIH TLV	Carcinogen
		SEE SECTION II	NONE KNOWN
SYMPTOMS OF EXPOSURE AND ROUTES OF ENTRY		SEE SECTION II	
EYES:	Severe irritation		
SKIN:	Irritation on prolonged contact		
INHALATION:	Not a normal route of entry		
INGESTION:	Not a normal route of entry		
FIRST AID			
EYES:	Flush with water for 15 minutes. Consult a physician if irritation persists.		
SKIN:	Wash with water. Remove contaminated clothing and footwear.		
INGESTION:	Do not induce vomiting. Give plenty of water. Consult a physician immediately.		
VI. REACTIVITY DATA			
Stability	<input type="checkbox"/> Unstable <input checked="" type="checkbox"/> Stable	Conditions to Avoid	
		Strong acids	
Incompatibility		Material to Avoid	
		Strong acids	
Hazardous Polymerization	<input checked="" type="checkbox"/> May Occur <input type="checkbox"/> Will Not Occur	Conditions to Avoid	
		N/A	
Hazardous Decomposition Products			
Oxides of carbon on incineration			
VII. ENVIRONMENTAL PROTECTION PROCEDURES			
Spill Response			
Small Spill: Adsorb with suitable absorbent; discard as alkaline waste.			
Large Spill: Dike area, pump into suitable tank for recovery or disposal.			
Waste Disposal Method			
Neutralize to pH of approximately 7 using dilute acid. Check with sewer district before running down drain; check all applicable regulatory ordinances.			
VIII. SPECIAL PROTECTION INFORMATION			
Eye Protection	Safety Goggles Recommended	Skin Protection	Rubber Gloves and Apron suggested
Respiratory Protection (Specific Type)	Not normally needed	Ventilation Recommended	General
Other Protection	Eye wash in area		
IX. SPECIAL PRECAUTIONS			
Hygiene Practices in Handling & Storage			
Do not store with acidic materials			
Other Precautions			
Keep closures on containers when not in use.			
DISPOSAL OF EMPTY CONTAINERS			
Flush thoroughly with water before disposing.			



MATERIAL SAFETY DATA SHEET

EMERGENCY PHONE: 913-599-6911

CHEMTREC: 800-424-9300

SECTION I-IDENTIFICATION

PRODUCT: SOYGOLD® 1000
CAS No.: 67784-80-9
CHEMICAL: Fatty acid methyl esters
SYNONYMS: Methyl esters of soybean oil

SECTION II-INGREDIENTS AND HAZARD CLASSIFICATION

TYPICAL COMPOSITION

Alkyl C₁₆-C₁₈-Methyl Esters

This product contains no hazardous material.

SARA HAZARD: TITLE III SECTION 313-Not listed FIRE (Section 311/312): None noted

SECTION III-HEALTH INFORMATION

EFFECTS OF OVEREXPOSURE

INHALATION: No known problems
INGESTION: LD₅₀: >50ml/kg (albino rats)(similar products)
EYE CONTACT: Not classified as eye irritants
SKIN CONTACT: Not classified as a skin irritant or corrosive material

SECTION IV-OCCUPATIONAL EXPOSURE LIMITS

PEL: NO OSHA PEL TLV: NO ACGIH TLV

SECTION V-EMERGENCY FIRST AID PROCEDURE

FOLLOW STANDARD FIRST AID PROCEDURES

SWALLOWING: Call physician or poison control center.
SKIN CONTACT: Wash affected area.
EYE CONTACT: Flush eyes with cool water for at least 15 minutes. Do not let victim rub eyes.
INHALATION: Immediately remove victim to fresh air. Get medical attention immediately.

SECTION VI-PHYSICAL DATA

BOILING POINT: Over 600° F (315° C) at 760 mm Hg pressure
MELTING POINT: -1° C
VAPOR PRESSURE: 1.8 mm Hg at 68° F
SPECIFIC GRAVITY: 0.882 g/ml at 25° C
DIELECTRIC STRENGTH: 42.4
SOLUBILITY IN WATER: Negligible at room temperature
APPEARANCE AND COLOR: Light yellow and liquid at room temperature
ODOR: Light vegetable oil odor

SECTION VII-FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: 425° F (218° C)(PMCC)
FLAMMABLE LIMITS: Not applicable
NFPA RATING: No NFPA rating
HMIS RATING: HEALTH: 0 FIRE: 1 REACTIVITY: 0

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS

Treat as oil fire. Use water spray, dry chemical, foam or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS

Rags soaked with any solvent present a fire hazard and should always be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to oxidation. Oxidation, under certain conditions can lead to spontaneous combustion. This product contains antioxidants to retard oxidation.

SECTION VIII-REACTIVITY

STABILITY:	Stable
HAZARDOUS POLYMERIZATION:	None likely
MATERIALS TO AVOID:	Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS:	CO ₂ , CO
CONDITIONS TO AVOID:	None known

SECTION IX-EMPLOYEE PROTECTION

CONTROL MEASURES:	Adequate ventilation
RESPIRATORY PROTECTION:	None required
PROTECTIVE CLOTHING:	No need anticipated
EYE PROTECTION:	None required

SECTION X-ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS:	Avoid uncontrolled releases of this material into environment.
SPILL OR LEAK PRECAUTIONS:	Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media.
WASTE DISPOSAL:	Dispose of according to federal, state and/or local requirements.

SECTION XI-REGULATORY CONTROLS

DOT CLASSIFICATION:	Class 55
DOT PROPER SHIPPING NAME:	Cleaning Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS:	Listed in TSCA inventory

SECTION XII-PRECAUTIONS: HANDLING, STORAGE AND USAGE

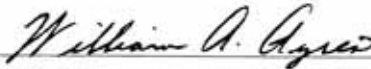
No special precautions necessary.

SECTION XIII-DATE AND SIGNATURE

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.L.C.
9804 PFLUMM
LENEXA, KS 66215

SIGNATURE: _____



PREPARED BY: WILLIAM A. AYRES REVISION DATE: 5-01-01

UNUSUAL FIRE & EXPLOSION HAZARDS

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STABILITY:	Stable
HAZARDOUS POLYMERIZATION:	None likely
MATERIALS TO AVOID:	Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS:	CO ₂ , CO
CONDITIONS TO AVOID:	None known

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PREPARED BY: WILLIAM A. AYRES REVISION DATE: 5-01-01



MATERIAL SAFETY DATA SHEET

EMERGENCY PHONE: 913-599-6911

CHEMTREC: 800-424-9300

SECTION I-IDENTIFICATION

PRODUCT: SOYGOLD® 2000
CAS No.: 67784-80-9
CHEMICAL: Fatty acid methyl esters
SYNONYMS: Methyl esters of soybean oil

SECTION II-INGREDIENTS AND HAZARD CLASSIFICATION

TYPICAL COMPOSITION	CAS	%
Alkyl C ₁₀ -C ₁₈ -Methyl Esters	67784-80-9	97-99
Surfactant	9016-45-9	1-3

SARA HAZARD: TITLE III SECTION 313: Not listed FIRE (Section 311/312): None noted

SECTION III-HEALTH INFORMATION

EFFECTS OF OVEREXPOSURE

INHALATION: No known problems
INGESTION: LD₅₀: >50ml/kg (albino rats) (similar products)
EYE CONTACT: Not classified as eye irritants
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PEL: NO OSHA PEL TLV: NO ACGIH TLV

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FOLLOW STANDARD FIRST AID PROCEDURES

SWALLOWING: Call physician or poison control center.
SKIN CONTACT: Wash affected area.
EYE CONTACT: Flush eyes with cool water for at least 15 minutes. Do not let victim rub eyes.
INHALATION: Immediately remove victim to fresh air. Get medical attention immediately.

SECTION VI-PHYSICAL DATA

BOILING POINT: Over 600° F (315° C) at 760 mm Hg pressure
MELTING POINT: -1° C
VAPOR PRESSURE: 0.882 mm Hg at 25° C
SPECIFIC GRAVITY: 0.882 g/ml at 25° C
DIELECTRIC STRENGTH: >56.9
SOLUBILITY IN WATER: Negligible at room temperature
APPEARANCE AND COLOR: Light yellow to clear and liquid at room temperature
ODOR: Light vegetable oil odor

SECTION VII-FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: 425° F (218° C) (PMCC)
FLAMMABLE LIMITS: Not applicable
NFPA RATING: No NFPA rating
HMIS RATING: HEALTH: 0 FIRE: 1 REACTIVITY: 0

SEP 02001

SOYGOLD® 2000 (CONTINUED)

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS

Treat as oil fire. Use water spray, dry chemical, foam or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS

Rags soaked with any solvent present a fire hazard and should always be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to oxidation. Oxidation, under certain conditions can lead to spontaneous combustion. This product contains antioxidants to retard oxidation.

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STABILITY:	Stable
HAZARDOUS POLYMERIZATION:	None likely
MATERIALS TO AVOID:	Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS:	CO ₂ , CO
CONDITIONS TO AVOID:	None known

SECTION IX-EMPLOYEE PROTECTION

CONTROL MEASURES:	Adequate ventilation
RESPIRATORY PROTECTION:	None required
PROTECTIVE CLOTHING:	No need anticipated
EYE PROTECTION:	None required

SECTION X-ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS:	Avoid uncontrolled releases of this material into environment.
SPILL OR LEAK PRECAUTIONS:	Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media.
WASTE DISPOSAL:	Dispose of according to federal, state and/or local requirements.

SECTION XI-REGULATORY CONTROLS

DOT CLASSIFICATION:	Class 55
DOT PROPER SHIPPING NAME:	Cleaning Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS:	Listed in TSCA inventory

SECTION XII-PRECAUTIONS: HANDLING, STORAGE AND USAGE

No special precautions necessary.



SECTION XIII-DATE AND SIGNATURE

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.L.C.
9804 PFLUMM
LENEXA, KS 66215

SIGNATURE: William A. Ayres

PREPARED BY: WILLIAM A. AYRES REVISION DATE: 5-01-01

MSDS <i>Material Safety Data Sheet</i>	24 Hour Emergency Telephone: 908-899-2151 CHEMTREC: 1-800-424-9300
	National Response in Canada CANUTEC: 613-898-6666
From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865	Outside U.S. and Canada Chemtrec: 703-527-3887
 	NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.
All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.	

ACETONE

MSDS Number: A0446 — Effective Date: 04/10/01

1. Product Identification

Synonyms: Dimethylketone; 2-propanone; dimethylketal

CAS No.: 67-64-1

Molecular Weight: 58.08

Chemical Formula: (CH₃)₂CO

Product Codes:

J.T. Baker: 5356, 5580, 5805, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9015, 9036, 9125, 9254, 9271,

A134, V655

Mallinckrodt: 0018, 2432, 2435, 2437, 2438, 2440, 2443, 2445, 2850, H451, H580, H981

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Acetone	67-64-1	99 - 100%	Yes

3. Hazards Identification**Emergency Overview**

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

<http://www.jtbaker.com/msds/A0446.htm>

8/15/02

Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dulness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.

Ingestion:

Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.

Skin Contact:

Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.

Eye Contact:

Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Chronic Exposure:

Prolonged or repeated skin contact may produce severe irritation or dermatitis.

Aggravation of Pre-existing Conditions:

Use of alcoholic beverages enhances toxic effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethane.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire:

Flash point: -20C (-4F) CC

Autoignition temperature: 465C (869F)

Flammable limits in air % by volume:

lfl: 2.5; uel: 12.8

Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.

Fire Extinguishing Media:

Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Acetone:

-OSHA Permissible Exposure Limit (PEL):
1000 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):

500 ppm (TWA), 750 ppm (STEL) A4 - not classifiable as a human carcinogen

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin

contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless, volatile liquid.

Odor:

Fragrant, mint-like

Solubility:

Miscible in all proportions in water.

Specific Gravity:

0.79 @ 20C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

56.5C (133F) @ 760 mm Hg

Melting Point:

-95C (-139F)

Vapor Density (Air=1):

2.0

Vapor Pressure (mm Hg):

400 @ 39.5C (104F)

Evaporation Rate (BuAc=1):

ca. 7.7

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 5800 mg/kg; Inhalation rat LC50: 50,100mg/m3; Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Acetone (67-64-1)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Environmental Toxicity:

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

International (Water, I.M.O.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

15. Regulatory Information

Ingredient	Chemical Inventory Status - Part 1	TSCA	EC	Japan	Australia

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Acetone (67-64-1)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

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International (Water, I.M.O.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

15. Regulatory Information

Ingredient	Chemical Inventory Status - Part 1	TSCA	EC	Japan	Australia

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	DSL	NDSL	Phil.
Acetone (67-64-1)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPQ	List	Chemical Catg.
Acetone (67-64-1)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8 (d)
Acetone (67-64-1)	5000	U002	No

Chemical Weapons Convention: No TSCA 12(b): Yes CDTA: Yes
 SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
 Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2[Y]E

Poison Schedule: No information found.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0

Label Hazard Warning:

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Label Precautions:

Keep away from heat, sparks and flame.
 Keep container closed.
 Use only with adequate ventilation.
 Wash thoroughly after handling.
 Avoid breathing vapor.
 Avoid contact with eyes, skin and clothing.

Label First Aid:

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No changes.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

.....
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 08/05/2002
Date Updated: 11/14/2000
Version: 1.20

Section 1 - Product and Company Information

Product Name	METHYL ACETATE, ANHYDROUS, 99.5%
Product Number	298996
Brand	Aldrich Chemical
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS, MO 63103 US
Technical Phone:	314 771 5765
Fax:	800 325 5052
Emergency Phone:	414 273 3850 Ext. 5896

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
METHYL ACETATE	79-20-9	No
Formula	C3H6O2	
Synonyms	Acetate de methyle (French), Devoton, Ethyl ester of monoacetic acid, Methylacetaat (Dutch), Methylacetat (German), Methyl acetate (ACGIH-OSHA), Methyl acetate de (French), Methyl ester kyseliny octove (Czech), Methyl ethanoate, Metile (acetato di) (Italian), Octan metylu (Polish), Tereton	

Section 3 - Hazards Identification

Emergency Overview

Flammable (USA) Highly Flammable (EU), Irritant.
Highly flammable, irritating to eyes and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.
Target organ(s): Eyes, Kidneys.

HMS Rating

Health: ** Flammability: 3 Reactivity: 1

NFPA Rating

Health: 1 Flammability: 3 Reactivity: 1

*additional chronic hazards present. For additional information on toxicity please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Hazards
Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.

Flash Point: -60.8 °F -16 °C

Explosion Limits: Lower: 3.1 % Upper: 16 %

Autoignition Temp: 502 °C **Flammability:** Yes

Extinguishing Media
Suitable

Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

Specific Method(s) of Fire Fighting

Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep container closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Special Requirements

Protect from moisture.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

NIOSH/MSHA-approved respirator

Hand

Compatible chemical-resistant gloves

Eye

Chemical safety goggles.

General Hygiene Measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Exposure Limits, RTECS

Country	Source	Type	Value	Remarks
USA	ACGIH	STEL	757 MG/M3 (250 PPM)	
USA	ACGIH	TWA	606 MG/M3 (200 PPM)	
USA	MSHA Standard Air	TWA	200 PPM (610 MG/M3)	
USA	OSHA	PEL	8H TWA 200 PPM (610 MG/M3)	
New Zealand	OEL			check ACGIH TLV
USA	NIOSH	TWA STEL	200 PPM 250 PPM	

Section 9 - Physical/Chemical Properties**Appearance****Physical State**

Clear liquid

Color

Colorless

Molecular Weight: 74.08 AMU**Property****Value****At Temperature or Pressure**

pH	N/A	
BP/BP Range	56 - 58 °C	
MP/MP Range	-98 °C	
Freezing Point	N/A	
Vapor Pressure	165 mmHg	20 °C
Vapor Density	2.55 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.934 g/cm ³	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	-60.8 °F	
Flash Point °C	-16 °C	
Explosion Limits	Lower: 3.1 % Upper: 16 %	
Autoignition Temp	502 °C	
Refractive Index	1.362	
Solubility	N/A	

Section 10 - Stability and Reactivity**Stability**

Stable

Stable

Conditions to Avoid

Protect from moisture

Materials to Avoid
Strong oxidizing agents

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide

Hazardous Polymerization
Hazardous Polymerization
Will not occur

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion

May be harmful if swallowed.

Target Organ(s) or System(s)

Eyes, Kidneys, Central nervous system.

Signs and Symptoms of Exposure

Exposure can cause Narcotic effect. This product is metabolized into formic acid. Humans and other primates metabolize formic acid more slowly than do rodents. Formic acid can build up in the body producing toxic effects possibly leading to death; therefore, data from studies in rodents may have limited relevance for human risk assessment.

RTECS Number: A1810000

Toxicity Data

Oral - Rat: > 5,000 mg/kg (LD50)

Oral - Rabbit: 3,705 mg/kg (LD50)

Skin - Rabbit: > 5,000 mg/kg (LD50)

Intraduodenal - Rabbit: 3700 MG/KG (LD50)

Irritation Data

Skin - Rabbit: 500 mg 24H

Remarks: Mild irritation effect

Skin - Rabbit: 20 mg 24H

Remarks: Moderate irritation effect

Eyes - Rabbit: 100 mg 24H

Remarks: Moderate irritation effect

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Methyl acetate
 UN#: 1231
 Class: 3
 Packing Group: Packing Group II
 PIH: Not PIH

IATA

Proper Shipping Name: Methyl acetate
 IATA Number: 1231
 Hazard Class: 3
 Packing Group: II

Section 15 - Regulatory Information

EU Directive Classification

Symbol of Danger: F+ Xi

Indication of Danger

Highly Flammable, Irritant.

Risk Statements R: 11 36 66 67

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

Safety Statements S: 16 26 29 33

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges.

US Classification and Label Text

Indication of Danger

Flammable (USA) - Highly Flammable (EU) Irritant.

Risk Statements

Highly flammable. Irritating to eyes and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

Safety Statements

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

Target organ(s): Eyes, Kidneys.

United States Regulatory Information

Listed: No

TSCA Inventory Item: Yes

Section 16 - Other Information

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2002 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

Alternative Tested at Southern California Screen Printing

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Trade Name: SIEBERT AUTOWASH #3
Generic Name: Blanket Wash

CAS #: Proprietary Blend

Manufacturer: Siebert, Inc.
Address: 8134 West 47th Street
City: Lyons State: IL Zip: 60534

Emergency phone#: (800) 535-5053
Technical phone#: (708) 442-2010

DOT Hazard Classification: Not Regu
NFPA Codes: Health - 0 Flammability - 0 Reactivity - 0
HMIS Codes: Health - 1 Flammability - 0 Reactivity - 0 Personal Protection - B

II. HAZARDOUS INGREDIENTS

If present, IARC, NTP, and OSHA carcinogens and chemicals subject to the reporting requirements of SARA Title III Section 313 are identified in this section.

Ingredient Name	CAS Number	%wt	TLV	STEL	SARA TITLE III
Fatty esters	Various	70 to 90	None established	None established	No
Surfactants	Various	15 to 30	None established	None established	No

References: 29CFR 1910.1000, ACGIH "Threshold Limit Values for Chemicals in the Workplace", National Toxicology Program Annual Report, International Agency for Research on Cancer Monographs, and 40CFR Part 372. All components of this product are in compliance with TSCA.

III. PHYSICAL DATA

Boiling Point @ 760 mm Hg:	308 - 335°F
Vapor Pressure @ 80°F:	<0.1 mm Hg
Specific Gravity @ 68°F:	0.92
Water Solubility (%):	Insoluble
Specific Vapor Density (air=1):	<1.0
% Volatile by Volume:	<1.0
% Volatile Organic Compound(s):	<1.0
Appearance:	Clear golden liquid
Odor:	Typical organic odor

IV. FIRE AND EXPLOSION DATA

Flash Point (Method): >300°F (TCC)
Explosive Limit: LEL - N/E UEL - N/E
Extinguishing Media: Water fog, carbon dioxide, or dry chemical.
Special Fire Fighting Procedures: Wear self-contained breathing apparatus when fighting chemical fires.
Unusual Fire and Explosion Hazards: Fine sprays/mists may be combustible at temperatures below normal flash point. Rags soaked with material, stored for a long period while mixed with strong alkali or acidic materials, may smolder, then smoke, and may even ignite.

V. HEALTH HAZARD DATA

Eyes - May cause temporary irritation, redness, tearing, blurred vision. Contact lenses must not be worn when possibility exists for eye contact due to spraying liquid or airborne particles.
Skin - Prolonged or repeated contact may cause irritation.

SIEBERT AUTOWASH #3

Breathing - Excessive inhalation of vapors may cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.
Swallowing - Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

First Aid/Emergency Procedures

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm, quiet and get medical attention.

Skin Contact: Wash thoroughly with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use.

Eyes: Flush with copious amounts of water. Get medical attention.

Ingestion: Do not induce vomiting. If large quantity is swallowed, give lukewarm water (pint). **NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.** Get medical attention immediately. Risk of damage to lungs exceeds poisoning risk.

Primary Entry Route(s): Inhalation, skin contact.

Chronic Health Effects: Chronic overexposure may aggravate existing skin, eye and lung conditions.

VI. REACTIVITY DATA

Stability: Stable.

Hazardous Polymerization: Cannot occur.

Incompatibilities: Avoid contact with strong oxidizing materials, strong alkalis, strong mineral acids.

Hazardous Decomposition Products: Carbon mono/di oxides.

Conditions to Avoid: None

VII. SPILL OR LEAK PROCEDURES

Procedures for Spill/Leak:

Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks, etc.).

Small Spill - Absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to a recovery drum.

Large Spill - Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into recovery drums. Prevent run-off to sewers, streams or other bodies of water. Notify proper authorities, as required, that a spill has occurred.

Waste Management:

Landfill solids at permitted sites. Use registered transporters. Burn concentrated liquids at permitted sites. Avoid flameouts. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade. Avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection:

If workplace exposure limit(s) of product is exceeded, a NIOSH/MSHA approved air supplied respirator is advised in the absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions. Engineering or administrative controls should be implemented to reduce exposure.

Ventilation: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain minimum exposure.

Eye Protection: Chemical Splash Proof Goggles and full face shield are advised for operations where eye or face contact can occur.

Gloves: Wear impervious gloves.

Other Protective Equipment: To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

IX. SPECIAL PRECAUTIONS

SIEBERT AUTOWASH #3

Special Handling/Storage:

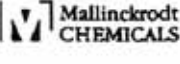

To avoid skin contact and ingestion, wash hands and face well before eating or smoking. Do not permit food in work area. Avoid breathing mists if generated. Store at room temperature. Reseal container when not in use. Do not store near acids, bases or flammable liquids. Containers of this material should be rinsed when emptied, since emptied containers retain product residues (vapor, liquid, and/or solid). All hazard precautions given in this data sheet must be observed.

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given.

Date revised: 04/01/2001

jpm

Alternatives Tested at Nelson Nameplate

MSDS	Material Safety Data Sheet		
	<p>From: Mallinckrodt Baker, Inc.  </p> <p>222 Red School Lane Phillipsburg, NJ 08865</p>		
<p>24 Hour Emergency Telephone: 908-669-3131 CHEMTREC: 1-800-421-6000</p>		<p>National Response in Canada CANUTEC: 613-896-6666</p>	
<p>Outside U.S. and Canada Chemtrec: 703-637-3887</p>		<p>NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.</p>	
<p>All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.</p>			

ACETONE

MSDS Number: A0446 — Effective Date: 04/10/01

1. Product Identification

Synonyms: Dimethylketone; 2-propanone; dimethylketal
 CAS No.: 67-64-1
 Molecular Weight: 58.08
 Chemical Formula: (CH₃)₂CO
 Product Codes:
 J.T. Baker: 5356, 5580, 5805, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9015, 9036, 9125, 9254, 9271, A134, V655
 Mallinckrodt: 0018, 2432, 2435, 2437, 2438, 2440, 2443, 2445, 2850, H451, H580, H981

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Acetone	67-64-1	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.

Ingestion:

Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.

Skin Contact:

Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.

Eye Contact:

Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Chronic Exposure:

Prolonged or repeated skin contact may produce severe irritation or dermatitis.

Aggravation of Pre-existing Conditions:

Use of alcoholic beverages enhances toxic effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethane.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire:

Flash point: -20C (-4F) CC

Autoignition temperature: 465C (869F)

Flammable limits in air % by volume:

lfl: 2.5; uel: 12.8

Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.

Fire Extinguishing Media:

Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Acetone:

-OSHA Permissible Exposure Limit (PEL):
1000 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):
500 ppm (TWA), 750 ppm (STEL) A4 - not classifiable as a human carcinogen

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin

contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless, volatile liquid.

Odor:

Fragrant, mint-like

Solubility:

Miscible in all proportions in water.

Specific Gravity:

0.79 @ 20C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

56.5C (133F) @ 760 mm Hg

Melting Point:

-95C (-139F)

Vapor Density (Air=1):

2.0

Vapor Pressure (mm Hg):

400 @ 39.5C (104F)

Evaporation Rate (BuAc=1):

ca. 7.7

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 5800 mg/kg; Inhalation rat LC50: 50,100mg/m3; Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Acetone (67-64-1)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Environmental Toxicity:

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

International (Water, I.M.O.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

15. Regulatory Information

Ingredient	Chemical Inventory Status - Part 1	TSCA	EC	Japan	Australia

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	DSL	Canada NDSL	Phil.
Acetone (67-64-1)	Yes	Yes	No	Yes
-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPO	List	Chemical Catg.
Acetone (67-64-1)	No	No	Yes	No
-----\Federal, State & International Regulations - Part 2\-----				
Ingredient	CERCLA	RCRA	-TSCA-	
		261.33	8 (d)	
Acetone (67-64-1)	5000	U002	No	

Chemical Weapons Convention: No TSCA 12(b): Yes CDTA: Yes
 SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
 Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2[Y]E

Poison Schedule: No information found.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0

Label Hazard Warning:

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Label Precautions:

Keep away from heat, sparks and flame.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Avoid breathing vapor.

Avoid contact with eyes, skin and clothing.

Label First Aid:

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No changes.

Disclaimer:

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Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

.....
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

008669

GLYCOL ETHER DPM

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: GLYCOL ETHER DPM
CAS NUMBER: 34590-94-8BENCO SALES INC
P O BOX 1415
CROSSVILLE TN 38557

05 50 088 0936060-

PRODUCT: 3989140
INVOICE: 450542
INVOICE DATE: 10/23/89
TO: BENCO SALES INC
STOUT DRIVE
CROSSVILLE TN 38555Data Sheet No: 0003866-005
Prepared: 10/05/89
Supersedes: 03/04/86

ATTN: PLANT MGR./SAFETY DIR.

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: GLYCOL ETHER

DOT Hazard Classification: COMBUSTIBLE (173.115)

SECTION II - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 515 ARE IDENTIFIED IN THIS SECTION. SEE DEFINITION PAGE FOR CLARIFICATION.

INGREDIENT	% (by WT)	PEL	TLV	Note
DIPROPYLENE GLYCOL MONOMETHYL ETHER CAS #: 34590-94-8	>95	100 PPM - SKIN	100 PPM - SKIN	(1)

Notes:

(1) SKIN ABSORPTION MAY POTENTIALLY CONTRIBUTE TO THE OVERALL EXPOSURE TO THIS MATERIAL. APPROPRIATE MEASURES SHOULD BE TAKEN TO PREVENT ABSORPTION SO THAT THE TLV IS NOT INVALIDATED.

OSHA/ACGIH SHORT TERM EXPOSURE LIMIT (STEL) FOR DIPROPYLENE GLYCOL MONOMETHYL ETHER IS 150 PPM.

SECTION III - PHYSICAL DATA

Boiling Point	for PRODUCT	356.00 - 378.00 Deg F (180.00 - 192.22 Deg C)
Vapor Pressure	for PRODUCT	< 0.10 mm Hg (68.00 Deg F) (20.00 Deg C)
Specific Vapor Density	AIR = 1	5.1
Specific Gravity		.953 - .959 (68.00 Deg F) (20.00 Deg C)
Percent Volatiles		100.00%
Evaporation Rate	(BU AC = 1)	.80

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT(TCC) 167.0 Deg F (75.0 Deg C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - 1.1%

EXTINGUISHING MEDIA: ALCOHOL FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY HEAT, PILOT LIGHTS, OTHER FLAMES AND IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NFPA CODES: HEALTH- 0 FLAMMABILITY- 2 REACTIVITY- 0

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL	100 PPM - SKIN
THRESHOLD LIMIT VALUE (SKIN)	100 PPM - SKIN

~~SECTION IV - HEALTH HAZARD DATA (Continued)~~**EFFECTS OF ACUTE OVEREXPOSURE:** FOR PRODUCT

EYES - CAN CAUSE IRRITATION.
 SKIN - CAN CAUSE SLIGHT IRRITATION.
 BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION AND CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE AND POSSIBLE UNCONSCIOUSNESS.
 SWALLOWING - SLIGHTLY TOXIC. MAY PRODUCE SIGNS OF INTOXICATION CHARACTERIZED BY INCOORDINATION, DIZZINESS, DROWSINESS, HEADACHE, NAUSEA, MENTAL CONFUSION, POSSIBLY SLURRED SPEECH, AND STUPOR, DEPENDING ON THE QUANTITY OF MATERIAL INGESTED.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY.

IF SWALLOWED: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING IPECAC SYRUP OR BY PLACING FINGER AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN ABSORPTION, SKIN CONTACT

EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: LIVER ABNORMALITIES, KIDNEY DAMAGE

~~SECTION VI - REACTIVITY DATA~~

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG OXIDIZING AGENTS.

~~SECTION VII - SPILL OR LEAK PROCEDURES~~**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

VENTILATE AREA.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK, REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

PREVENT RUN-OFF TO SEWERS, STREAMS OR OTHER BODIES OF WATER. IF RUN-OFF OCCURS, NOTIFY PROPER AUTHORITIES AS REQUIRED, THAT A SPILL HAS OCCURRED.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

~~SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED~~

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NITRILE RUBBER, NATURAL RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

~~SECTION IX - SPECIAL PRECAUTIONS OR OTHER COMMENTS~~

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID). ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

SECTION I PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

SECTION II COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

SECTION III PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

SECTION V HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

SECTION VII SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

SECTION IX SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

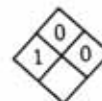
ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

Alternatives Tested at Stith and Quickdraw



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Material Safety Data Sheet

MIRACHEM. Pressroom Cleaner

(Formulation No. 2501)

Section I - General

Manufacturer Name: The Mirachem Corporation
P.O. Box 27608
Tempe, Arizona 85285-7608
Date Prepared: 7/3/96
Revision Date:

Emergency Phone: 1-(800) 847-3527

Section II - Hazardous Ingredients/Identity Information

Hazardous Component (CAS #)	OSHA PEL	ACGIH TLV	Other Limits	% (Optional)
None				

N.E. = None Established

Section III - Physical/Chemical Characteristics

Boiling Point:	>210°F	Specific Gravity (H ₂ O = 1):	0.9957
Vapor Pressure (mm Hg.): @ 20°C	Composite 0.006	pH:	8.7-9.5
Vapor Density (AIR =1):	> 1	Evaporation Rate (Butyl Acetate=1):	> 1
Solubility in Water:	Complete	Melting Point:	N/A
Appearance and Odor:	Clear liquid with a mild citrus odor		

N/A = Not Applicable N.E. = Not Established

Section IV - Fire and Explosion Hazard

Flash Point (Method Used):	>212°F (PMCC ASTM D93)	Explosive Limits:	N/A
Extinguishing Media:	N/A		
Special Fire Fighting Procedures:	N/A	Unusual Fire Fighting and Explosion Hazards:	N/A

Section V - Reactivity

Stability:	Unstable Stable	incompatibility (Materials to Avoid):	Strong Acids and Alkalies. demulsify product.
Hazardous Decomposition or By-products:	X	Thermal decomposition may produce CO ₂	
Hazardous Polymerization:	May Occur	Will Not Occur	X

Section VI - Health Hazard Data

Eye Contact: May cause mild temporary irritation.
Skin Contact: Prolonged or repeated exposure may cause mild irritation.
Inhalation: No adverse effects expected.
Ingestion: No adverse health effects are anticipated to occur as a result of acute ingestion. Chronic effects are not known.
Carcinogenicity: None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
Signs/Symptoms of Overexposure: Prolonged contact may cause mild irritation or dryness to sensitive skin.
Medical Conditions Generally Aggravated by Exposure: None known.

Section VII - Emergency and First Aid Procedures

Eyes: Immediately flush with clean water. Consult physician if necessary.
Skin: Rinse with water.
Ingestion: If swallowed, treat symptomatically and supportively. Do not induce vomiting. If victim conscious and alert, give two glasses of water or milk to drink. If vomiting occurs, keep head below hips to prevent aspiration. Contact Physician.
Inhalation: No adverse effects anticipated.

Section VIII - Precautions for Safe Handling and Use

In Case of Spill: Flush with water into containing area.
Waste Disposal: Flush to sewer where applicable within Federal, State or Local disposal requirements.
Handling & Storage Precautions: Wear protective goggles or face shield if splashing or spraying liquid. Protect from freezing.
Other Precautions: Keep container tightly closed. Keep out of reach of children.

Section IX - Control Measures

Respiratory Protection: No respiratory protection is necessary.
Ventilation: Good general ventilation is sufficient.
Protective Clothing: When prolonged skin contact is expected, wear protective gloves.
Eye Protection: Wear safety glasses.
Work/Hygienic Practices: Use good personal hygiene practices, wash hands before eating, drinking, smoking, or using toilet facilities.



M A T E R I A L S A F E T Y D A T A S H E E T

EMERGENCY PHONE: 913-599-6911

CHEMTREC: 800-424-9300

SECTION I-IDENTIFICATION

PRODUCT: SOYGOLD® 2000
CAS No.: 67784-80-9
CHEMICAL: Fatty acid methyl esters
SYNONYMS: Methyl esters of soybean oil

SECTION II-INGREDIENTS AND HAZARD CLASSIFICATION

<u>TYPICAL COMPOSITION</u>	<u>CAS</u>	<u>%</u>
Alkyl C ₁₆ -C ₁₈ -Methyl Esters	67784-80-9	97-99
Surfactant	9016-45-9	1-3

SARA HAZARD: TITLE III SECTION 313: Not listed FIRE-(Section 311/312) None noted

SECTION III-HEALTH INFORMATION

EFFECTS OF OVEREXPOSURE:

INHALATION: No known problems
INGESTION: LD50:>50ml/kg (albino rats)(similar products)
EYE CONTACT: Not classified as eye irritants
SKIN CONTACT: Not classified as a skin irritant or corrosive material

SECTION IV-OCCUPATIONAL EXPOSURE LIMITS

PEL: NO OSHA PEL TLV: NO ACGIH TLV

SECTION V-EMERGENCY FIRST AID PROCEDURE

FOLLOW STANDARD FIRST AID PROCEDURES:

SWALLOWING: Call physician or poison control center.
SKIN CONTACT: Wash affected area.
EYE CONTACT: Flush eyes with cool water for at least 15 minutes. Do not let victim rub eyes.
INHALATION: Immediately remove victim to fresh air. Get medical attention immediately.

SECTION VI-PHYSICAL DATA

BOILING POINT: Over 600° F (315° C) at 760 mm Hg pressure
MELTING POINT: -1° C
VAPOR PRESSURE: Less than 5 mm Hg at 72° F
SPECIFIC GRAVITY: 0.87 at 25° C
SOLUBILITY IN WATER: Negligible at room temperature
APPEARANCE AND COLOR: Light yellow and liquid at room temperature
ODOR: Light vegetable oil odor

SECTION VII-FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: 425° F (218° C)(PMCC)
FLAMMABLE LIMITS: Not applicable
NFPA RATING: No NFPA rating

HMIS RATING: HEALTH: 0 FIRE: 1 REACTIVITY: 0

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS: Treat as oil fire.
Use water spray, dry chemical, foam or carbon dioxide.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Rags soaked with any solvent present a fire hazard and should always be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to oxidation. Oxidation, under certain conditions can lead to spontaneous combustion. This product contains antioxidants to retard oxidation.

SECTION VIII-REACTIVITY

STABILITY: Stable
HAZARDOUS POLYMERIZATION: None likely
MATERIALS TO AVOID: Strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS: CO₂, CO
CONDITIONS TO AVOID: None known

SECTION IX-EMPLOYEE PROTECTION

CONTROL MEASURES: Adequate ventilation
RESPIRATORY PROTECTION: None required
PROTECTIVE CLOTHING: No need anticipated
EYE PROTECTION: None required

SECTION X-ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS: Avoid uncontrolled releases of this material to environment.

SPILL OR LEAK PRECAUTIONS: Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media.

WASTE DISPOSAL: Dispose of according to federal, state and/or local requirements.

SECTION XI-REGULATORY CONTROLS

DOT CLASSIFICATION: Class 55
DOT PROPER SHIPPING NAME: Cleaning Compound, N.O.S.
OTHER REGULATORY REQUIREMENTS: Listed in TSCA inventory

SECTION XII-PRECAUTIONS: HANDLING, STORAGE AND USAGE

No special precautions necessary.

SECTION XIII-DATE AND SIGNATURE

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. The stated MSDS is reliable to the best of the company's knowledge and believed accurate as of the date indicated. However, no representation, warranty or guarantee of any kind, expressed or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

AG ENVIRONMENTAL PRODUCTS, L.L.C.
9804 PFLUMM
LENEXA, KS 66215

SIGNATURE: _____

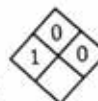
William A. Ayres

PREPARED BY: WILLIAM A. AYRES REVISION DATE: 7-1-98

Alternative Tested at Huhtamaki



A division of



Material Safety Data Sheet

MIRACHEM. Pressroom Cleaner

(Formulation No. 2501)

Section I - General

Manufacturer Name:	The Mirachem Corporation P.O. Box 27608 Tempe, Arizona 85285-7608	Date Prepared:	7/3/96
		Revision Date:	
Emergency Phone:	1-(800) 847-3527		

Section II - Hazardous Ingredients/Identity Information

Hazardous Component (CAS #)	OSHA PEL	ACGIH TLV	Other Limits	% (Optional)
None				

N.E. = None Established

Section III - Physical/Chemical Characteristics

Boiling Point:	>210°F	Specific Gravity (H ₂ O = 1):	0.9957
Vapor Pressure (mm Hg.): @ 20°C	Composite 0.006	pH:	8.7-9.5
Vapor Density (AIR =1):	> 1	Evaporation Rate (Butyl Acetate=1):	> 1
Solubility in Water:	Complete	Melting Point:	N/A
Appearance and Odor:	Clear liquid with a mild citrus odor		
N/A = Not Applicable	N.E. = Not Established		

Section IV - Fire and Explosion Hazard

Flash Point (Method Used):	>212°F .PMCC ASTM D93)	Explosive Limits:	N/A
Extinguishing Media:	N/A		
Special Fire Fighting Procedures:	N/A	Unusual Fire Fighting and Explosion Hazards:	N/A

Section V - Reactivity

Stability:	Unstable Stable	X	Incompatibility (Materials to Avoid):	Strong Acids and Alkalies demulsify product.
Hazardous Decomposition or By-products:	Thermal decomposition may produce CO ₂			
Hazardous Polymerization:	May Occur			Will Not Occur X

Section VI - Health Hazard Data

Eye Contact: May cause mild temporary irritation.
Skin Contact: Prolonged or repeated exposure may cause mild irritation.
Inhalation: No adverse effects expected.
Ingestion: No adverse health effects are anticipated to occur as a result of acute ingestion. Chronic effects are not known.
Carcinogenicity: None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
Signs/Symptoms of Overexposure: Prolonged contact may cause mild irritation or dryness to sensitive skin.
Medical Conditions Generally Aggravated by Exposure: None known.

Section VII - Emergency and First Aid Procedures

Eyes: Immediately flush with clean water. Consult physician if necessary.
Skin: Rinse with water.
Ingestion: If swallowed, treat symptomatically and supportively. Do not induce vomiting. If victim conscious and alert, give two glasses of water or milk to drink. If vomiting occurs, keep head below hips to prevent aspiration. Contact Physician.
Inhalation: No adverse effects anticipated.

Section VIII - Precautions for Safe Handling and Use

In Case of Spill: Flush with water into containing area.
Waste Disposal: Flush to sewer where applicable within Federal, State or Local disposal requirements.
Handling & Storage Precautions: Wear protective goggles or face shield if splashing or spraying liquid. Protect from freezing.
Other Precautions: Keep container tightly closed. Keep out of reach of children.

Section IX - Control Measures

Respiratory Protection: No respiratory protection is necessary.
Ventilation: Good general ventilation is sufficient.
Protective Clothing: When prolonged skin contact is expected, wear protective gloves.
Eye Protection: Wear safety glasses.
Work/Hygienic Practices: Use good personal hygiene practices, wash hands before eating, drinking, smoking, or using toilet facilities.