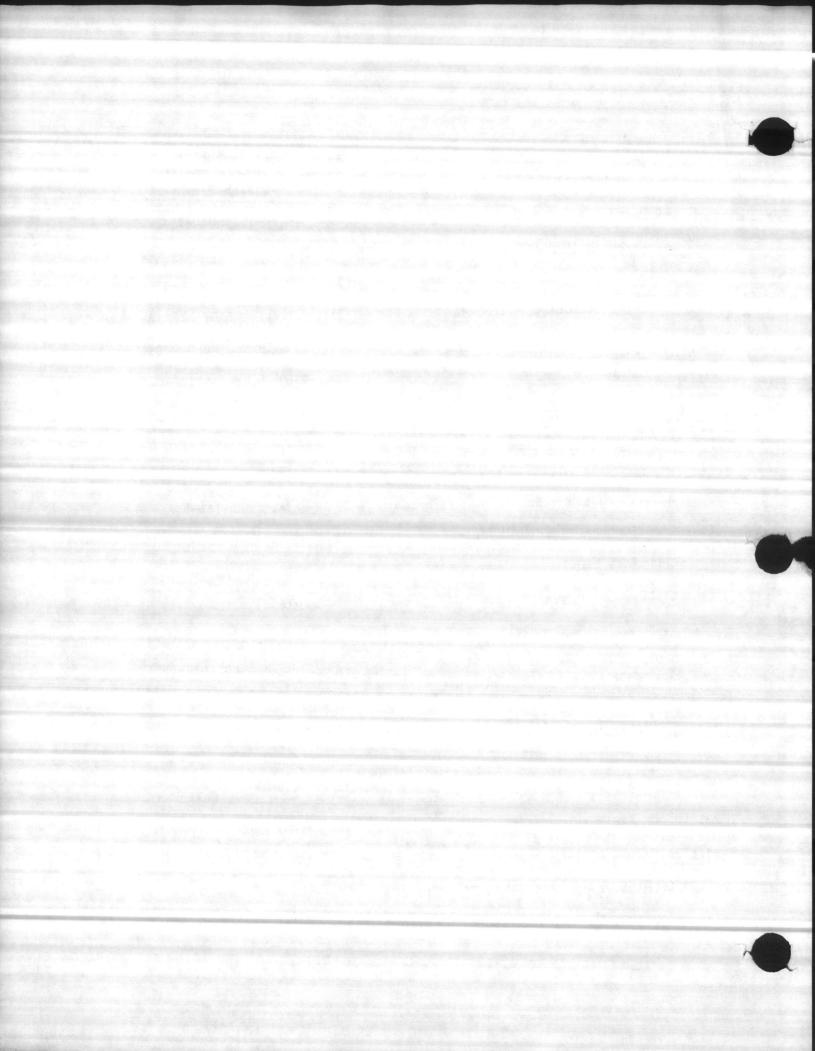
HAZARDOUS MATERIAL

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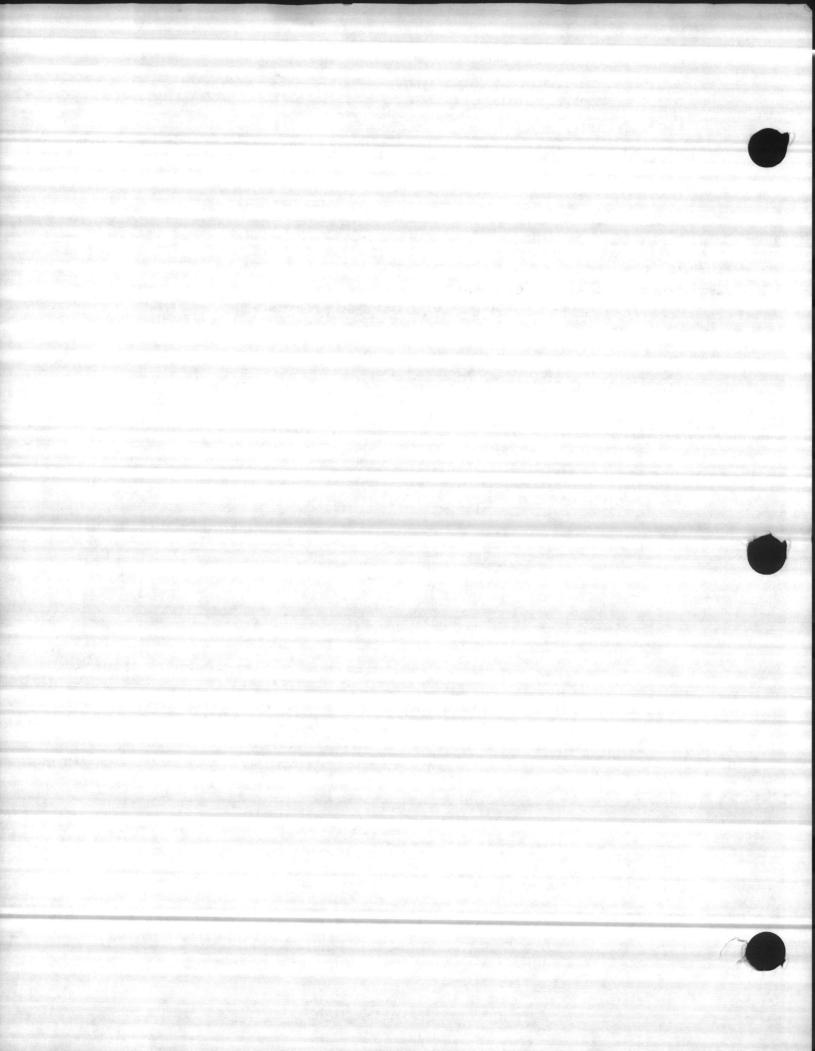
1.	ACETYLENE	26.	FURNITURE POLISH
2.	ACID, HYDROCHLORIC	27.	HARDNESS BUFFER - sodium borate
3.	ACID, SULFURIC 0.02N	28.	HARDNESS INDICATOR POWDER
4.	ACID, SULFURIC 1.00N	29.	
5.	ACID, SULFURIC 0.250N	. 30.	LIME - calcium hydroxide
6.	AMMONIA - ammonium hydroxide	31.	LOCTITE REMOVABLE THREADLOCKER
7.	BROMCRESOL GREEN 145-S	32.	
8.	BUFFER pH 4.0	[¢] 33.	METHYL RED INDICATOR
9.	BUFFER pH 7.0	34.	OIL, 30 WEIGHT
10.	BUFFER pH 10.0	35.	OXYGEN ·
11.	CALCIUM CARBONATE	36.	PAINTS
12.	CAUSTIC POTASH - potassium hydroxide	37.	PHENOL RED 180-S
13.	CAUSTIC SODA - sodium hydroxide	38.	PHENOLPHTHALEIN INDICATOR 200-S
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16.	DEGREASER, SUPER CHIEF	41.	SILVER NITRATE 0.0171N
17.	DPD #1 TABLETS	42.	SODIUM CHLORIDE - SALT
18.	EDTA	43.	TISAB
19.	ELECTROLYTE	44.	TISAB II
20.	FLOOR FINISH	45.	WD 40
21.	FLOOR SEAL	46.	ALUMINUM SULFATE
22.	FLOOR STRIPPER	47.	SODIUM AZIDE
23.	FLOURIDE, SODIUM		MANGAMOUS SULFATE
24.	FLOURIDE, 1 ppm STANDARIZING SOLUTION		POTASSIUM SODIUM
	FLOURIDE, 2 ppm STANDARIZING SOLUTION		T-1 <u>6</u> 0 GREASE NEUTRALIZER
			and the second



51. DPD #4 TABLETS

- 52. HCDC HAND SANITIZER
- 53. XERTEX
- 54. NICKEL LUBRICANT
- 55. RIDGID CUTTING OIL
- 56. WESCODYNE DISINFECTANT LIQUYD
- 57 Alum
- 58 CATEONTE POLYMER





OPNAV 5216/144A (Rev. 8-81) S/N 0107-LF-052-2320



DATE: OCT 2 5 1989

FROM: Industrial Hygienist, Base Maintenance

TO: Distribution List

SUBJ: HAZARD COMMUNICATION PROGRAM

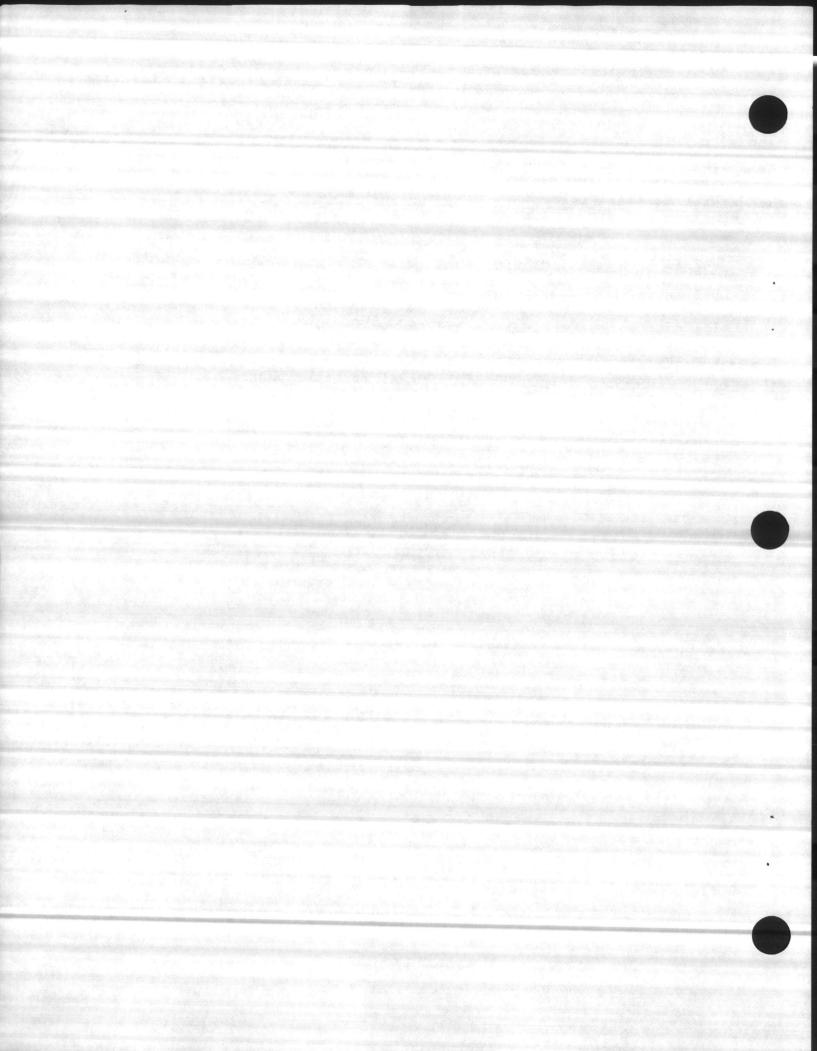
Encl: (1) Hazard Communication Program

1. The enclosure is provided for your information, use in the training of personnel, and a guide in establishing your shop hazard communication program. Retain the enclosure as part of your shop hazardous material inventory and material safety data sheet folder.

J. L. Waldrop

Distribution A





HAZARD COMMUNICATION PROGRAM

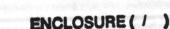
I. BACKGROUND

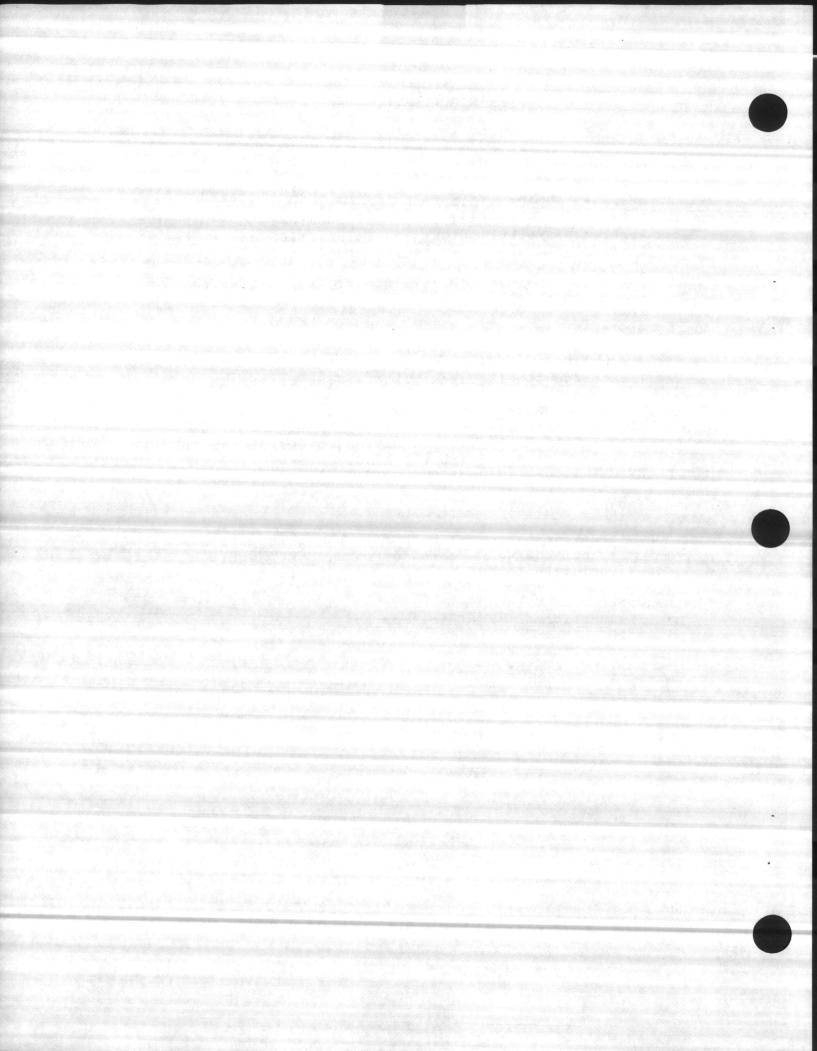
- A. 25 Nov 1983
 - OSHA, US Dept of Labor established Hazard Communication Standard, 29 CFR 1910.1200
 - 2. Purpose Ensure hazards of all chemicals used in the workplace are evaluated, and information concerning their hazards is transmitted to personnel.
- B. 25 May 1985 Chemical manufacturers, importers and distributers must be in compliance.
- C. 25 May 1986 All manufacturers must be in compliance.
- D. 24 August 1987 OSHA published final rule on Right-To-Know Act; expanded to all users of hazardous materials.
- E. 31 Jan 1989 FHCP (Federal Hazard Communication Program) 1. Full compliance
 - 2. Navy 29 CFR 1910.1200 OPNAVINST 5100.23B (shore), OPNAVINST 5100.19B (ship), NAVSUPINST 5100.27
 - 3. USMC 29 CFR 1910.1200, MCO 5100.25, BO 5100.20

II. STANDARD REQUIREMENTS

- A. Goal Provide personnel with reliable information about material hazards to understand risks, make sensible safety decisions, take better precautions regarding their own safety.
- B. Requirements:
 - 1. Explanation of right-to-know act
 - 2. MSDS/HMIS understanding and availability
 - 3. Proper labeling
 - 4. Worker training
 - 5. Unit/shop program







HAZARD COMMUNICATION PROGRAM DEFINITIONS

I. GENERAL DEFINITIONS

A. CHEMICAL - Any element, chemical compound, or mixture of elements and/or compounds.

B. FLASHPOINT - Minimum temperature at which a liquid gives off a vapor in sufficient quantity to ignite.

C. HAZARD - Substance or situation offering the potential for doing harm to humans, property or operations.

D. HAZARD WARNING - Words, pictures, symbols on labels, or other forms of communication, which convey the hazards of chemicals in containers.

E. HAZARDOUS CHEMICAL - Any chemical which is a physical hazard or health hazard.

F. HEALTH HAZARD - Chemical for which their is sufficient scientific evidence to indicate that it causes acute or chronic health effects in humans following exposure.

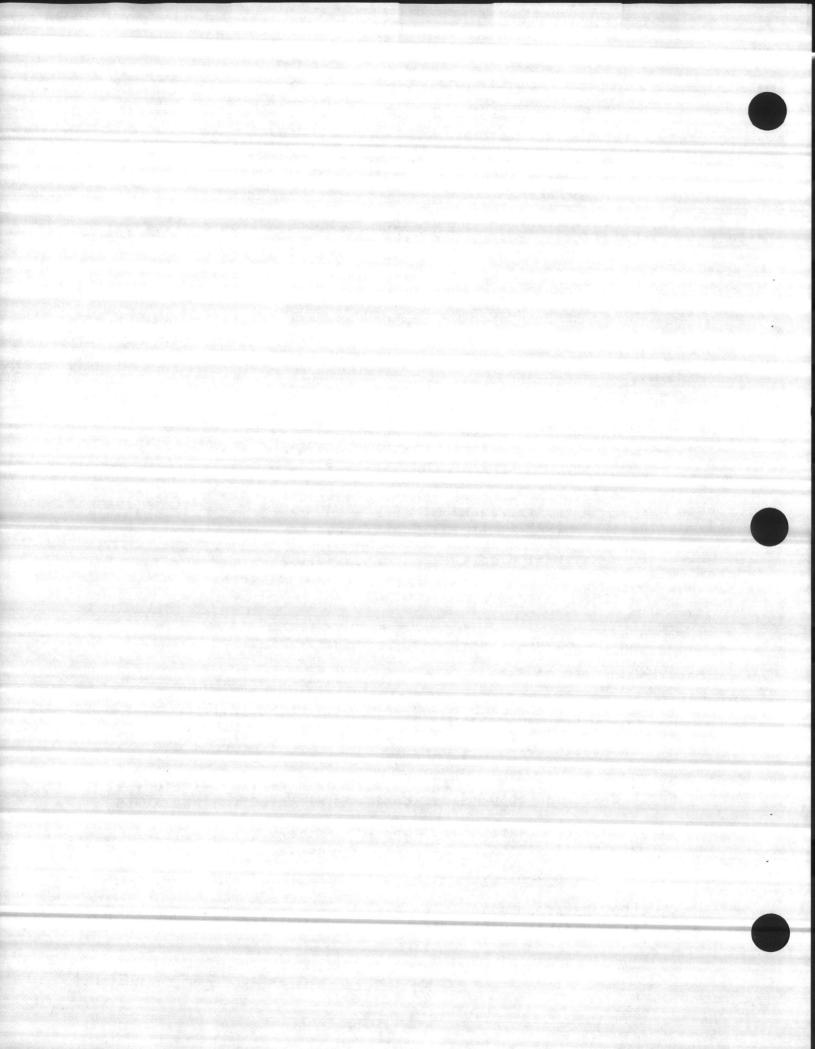
G. IMMEDIATE USE - Hazardous chemicals will be used only by the person who transfers the chemical from a labeled container, and only during the workshift it was transferred.

H. LABEL - Material displayed on containers of hazardous chemicals which convey to the user information concerning hazards and product use.

II. HEALTH HAZARD CHARACTERIZATION

- A. ACUTE HEALTH HAZARD
 - 1. IRRITANT Inflammation at the site of contact.
 - CUTANEOUS AGENT Causes skin rashes and irritation, and defats skin.
 - TOXIC/HIGHLY TOXIC AGENT Based on experimental studies to determine LD50 (dose, oral, skin) or LC50 (inhalation).
 - CORROSIVE Destruction, and often times irreversible damage, to tissue at the point of contact.
 - 5. EYE HAZARD Damage to the eyes.
 - BLOOD/HEMATOPOIETIC AGENT Decrease hemoglobin function, thereby depriving body of oxygen.

ENCLOSURE (|)





- B. CHRONIC HEALTH HAZARD
 - 1. SENSITIZERS Cause allergic reaction due to initial and repeated exposures.
 - 2. CARCINOGENS NTP, IARC, OSHA/ACGIH lists.
 - 3. REPRODUCTIVE TOXINS
 - 4. HEPATOTOXINS Affect the liver.
 - 5. NEPHROTOXINS Affect the kidneys.
 - 6. NEUROTOXINS Affect brain functioning.
 - 7. LUNG AGENTS Asbestos, silica, coal dust, beryllium.

III. PHYSICAL HAZARD CHARACTERIZATION

A. COMBUSTIBLE LIQUID - Liquid having a flashpoint between 100 F (38 C) and 200 F (93 C).

B. COMPRESSED GAS

C. FLAMMABLES

- AEROSOL Yields a flame projection 18 inches at full valve opening, or flame extends back to valve opening.
- 2. GAS The LFL is less than 13% by volume in air, or gas with UFL is more than 12% higher tha LFL.
- 3. LIQUID Has flashpoint below 100 F (38 C).
- 4. SOLID Ignites and burns with a self-sustained flame.

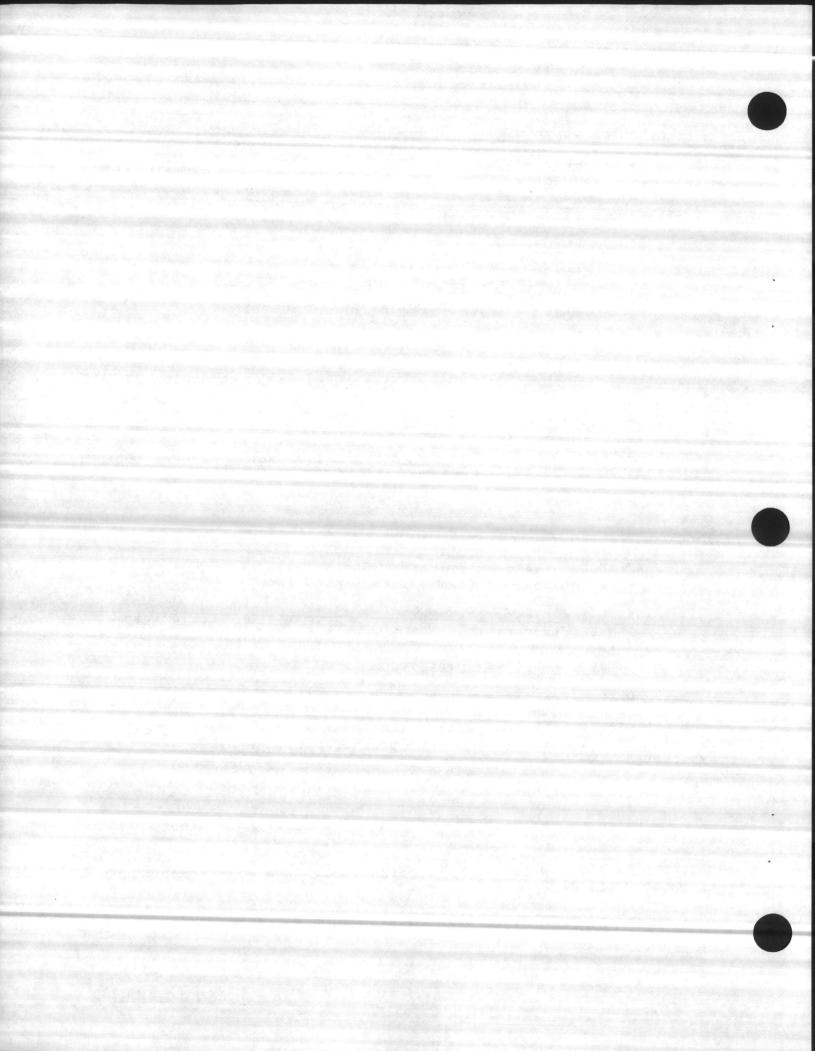
D. EXPLOSIVES - Causes sudden, instantaneous release of pressure, gas, heat when subjected to shock, pressure, or increased temperature.

E. ORGANIC PEROXIDE

F. OXIDIZER - Can initiate or promote combustion in other materials.

G. PYROPHORIC - Will ignite spontaneously in air at temperatures below 130 F (54 C).

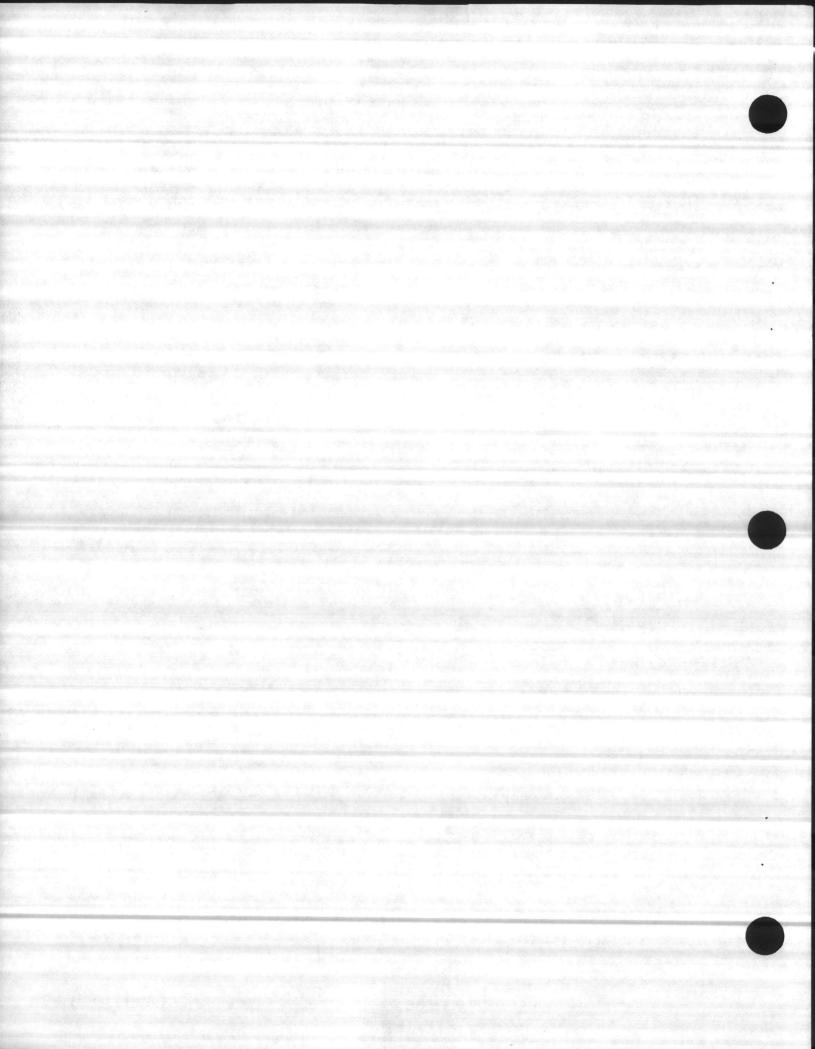
H. UNSTABLE MATERIAL - POlymerize, decompose, condense or become





self-reactive under conditions of shock, pressure or high temperature.

I. WATER REACTIVE MATERIAL - Reacts with water to produce a by-product (usually a gas) that is flammable or presents a health hazard.



HAZARD COMMUNICATION PROGRAM

LABELING

I. BACKGROUND

A. Substances covered by the HazCom Standard must be properly labeled with warning of known hazards.

II. REQUIREMENTS

A. 29 CFR 1910.1200

1. Ensure containers of hazardous chemicals in each workplace are labeled, tagged or marked with the identity of hazardous material and appropriate hazard warning is attached.

2. Stationary Process Containers - Signs, placards, process sheets, batch tickets, SOP or other written material in lieu of affixing labels, as long as method clearly identifies container contents.

3. Units are not required to label portable containers into which hazardous chemicals are transferred from labeled containers and are intended for immediate use by person performing transfer.

4. Units will not deface container labels.

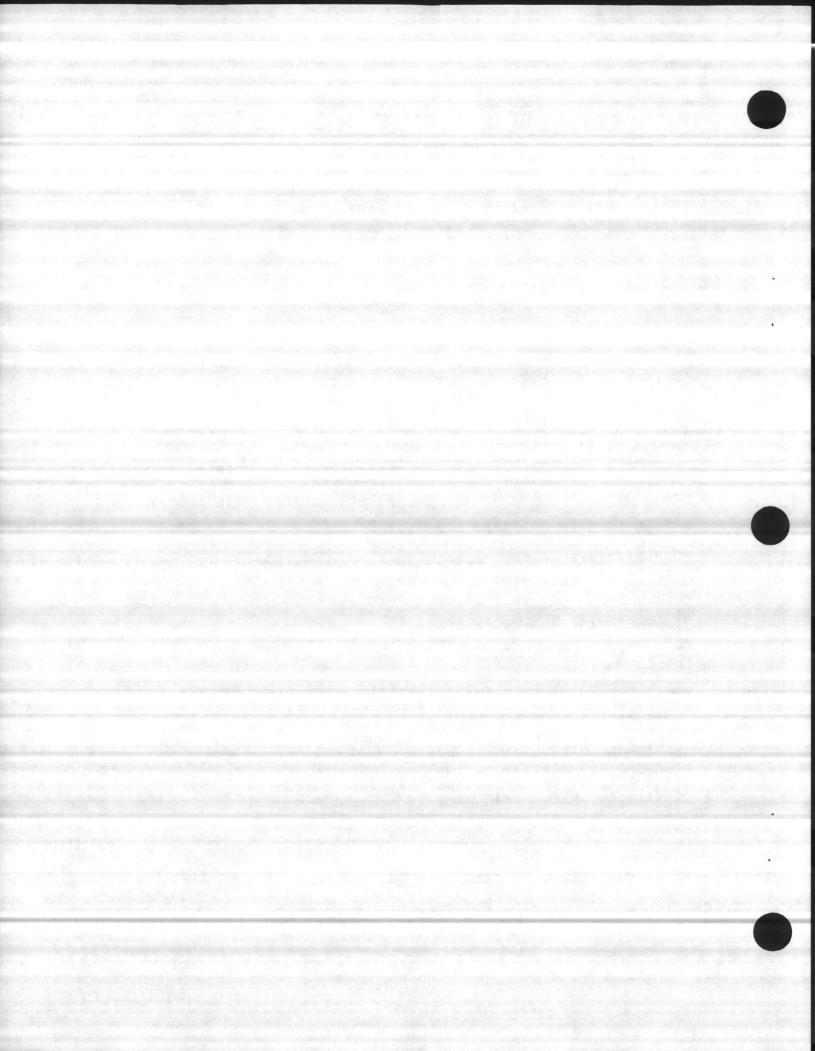
5. Units will ensure labels/forms of warning are legible and appear in English.

III. UNDERSTANDING LABEL CONTAINERS

- A. Product identity
- B. Signal word:
 - 1. Caution(low toxicity)--->Warning(moderate toxicity)---->
 Danger(highly toxic)--->Poison(highly toxic)
 (all ranked in order of increasing severity)
 2. DOT/NFPA labeling (see attachment)
- C. Statement of actual hazards
- D. Precautionary measures (use of PPE)
- E. Instructions for accidental exposure/poisoning
- F. Instructions for emergencies/disposal
- G. Handling/storage information
- H. Manufacturer's name and address

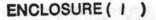
IV. LABEL INTREPRETATION EXAMPLE

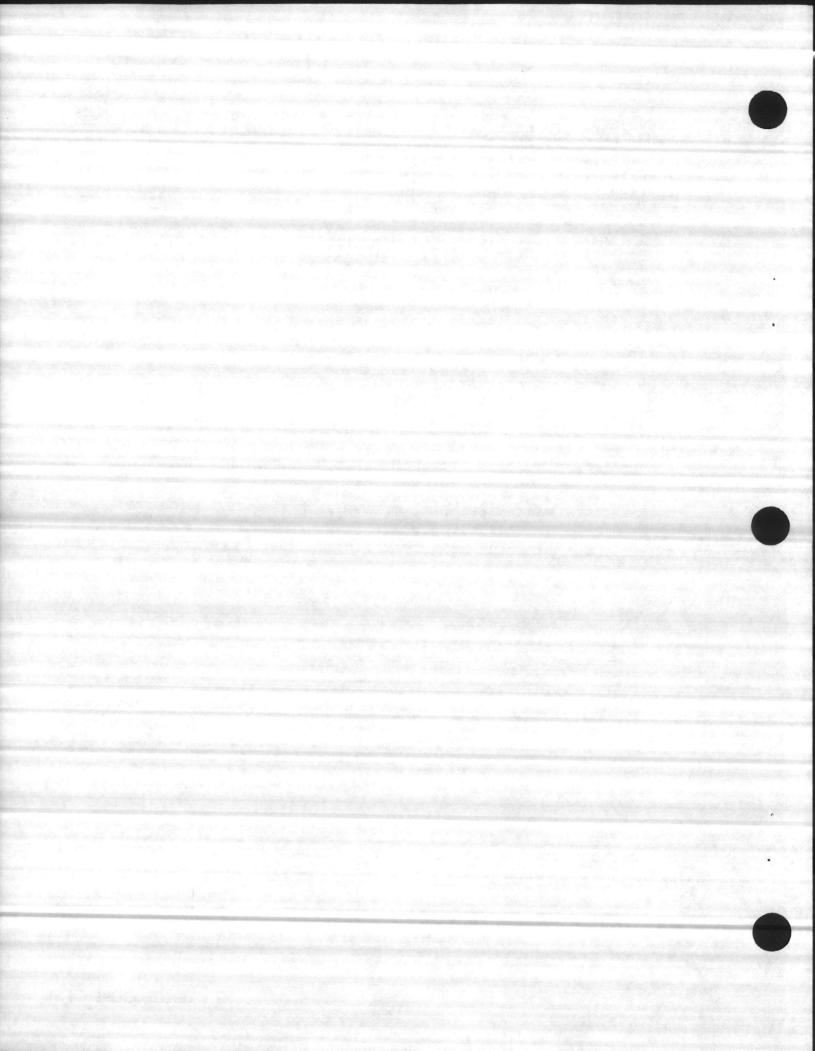
V. SPECIAL PRECAUTIONS/INFORMATION





- A. Not all hazardous substances in products are identified.
- B. Many labels do not tell how to safely dispose (for 2d FSSG HMDC, HMDO, NREAD, Base Orders, EPA Regulations).
- C. Utilize common sense:
 - Read product labels and pertinent SOPs and follow directions.
 - 2. Use product in well-ventilated area.
 - 3. Never mix chemicals or different brands of same product.
 - 4. If possible, avoid use of aerosols.
 - 5. Consult MSDS for full product information.
 - 6. Ensure adequate PPE is available and in excellent condition.
 - 7. Never overuse a product.
 - 8. Never leave containers open, or opened container unattended.
 - 9. Maintain products in original containers.
 - 10. Practice good housekeeping
 - a. avoid eating, drinking, tobacco products.
 - b. wash hands before and after each use.
 - C. DO NOT SMOKE!
 - 11. Be aware of fire extinguisher and eyewash locations.
 - Ensure personnel know emergency procedures for spills/leaks. Post phone numbers for HMDO/HMDC, Fire Dept, NREAD, IHO, NAVHOSP in conspicuous locations.
 - 13. Be alert to product reactions.
 - 14. Never use banned products (see attachment); find viable substitutes. Properly dispose of banned products in accordance with applicable orders and regulations.







REQUIRED INFORMATION

Brand name and trademark

Common or chemical name of hazardous substances in the product

Instruction for safe handling

Signal word

Child hazard warning

Description of hazard on front label

Warning statement for users



First aid instructions

Manufacturer name and address

EXAMPLE

Polyurethane Wood Finish

Contains: Polyhydric alcohol, silica, toluene diisocyanate

coating, surface preparation, coverage

DANGER: Combustible

DANGER: STORE OUT OF REACH OF CHILDREN/KEEP OUT OF REACH OF CHILDREN

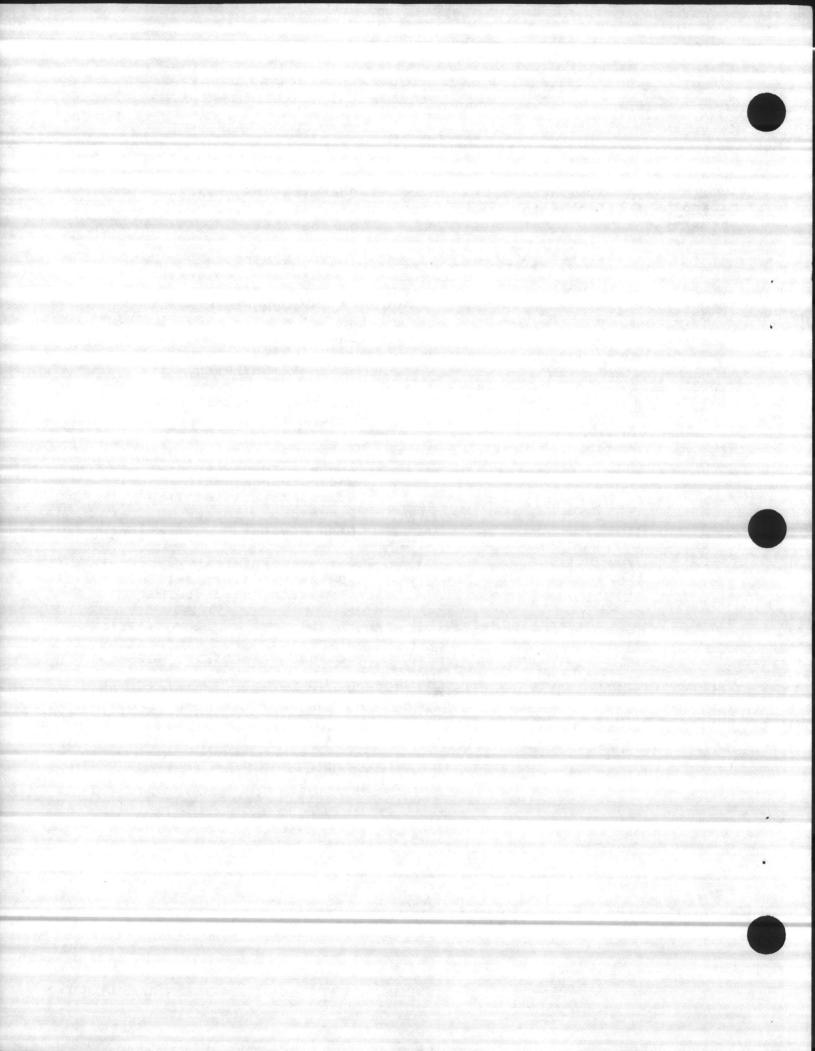
Harmful or fatal if swallowed

Keep from heat or open flame. Avoid breathing of vapor or contact with skin. Do not take internally. Close can after using. Use with adequate ventilation.

If taken internally, do not induce vomiting; call a physician immediately.

NASCO National Solvent Corporation Medina, Ohio U.S.A. 44256

THE USE OF BRAND NAMES IMPLIES NEITHER ENDORSEMENT NOR CRITICISM OF SPECIFIC PRODUCTS. THIS PRODUCT WAS USED FOR INSTRUCTIONAL PURPOSES ONLY.



HAZARD COMMUNICATION PROGRAM

UNIT PROGRAM

A. CHEMICAL INVENTORY/HAZARD EVALUATION/MSDS PROCUREMENT

- 1. MCB BO 5100.20
- 2. A C/S, Logistics, MCB, CLNC has MSDS responsibility
- 3. IH/HMDC responsibilities

B. Develop list of work operations for each shop, listing chemicals used and frequency of operation. This will assist IH in evaluation.

C. Establish Hazard Communication Stations for each work shop where MSDSs/HMISs and other communicative information can be found. Use binder system. Should contain:

- 1. Copies of written programs
- 2. MSDSs/HMISs
- 3. Instructions on understanding labels
- 4. Procedures for labeling
- 5. Pertinent phone numbers
- 6. Copy of Unit training program
- 7. List of definitions
- 8. Additional handouts to disseminate information should be located at the station.
- D. Unit/Shop Training Program

Explanation of HAZCOM Program, including the following:

- a. methods and observations used to detect presence or release of chemicals into the work area (monitoring, odor, visual appearance).
- b. physical and health hazards in the work area.
- c. measures workers can take to protect themselves from chemical hazards (PPE, emergency procedures).
- d. details of program, including that discussed during this training class.

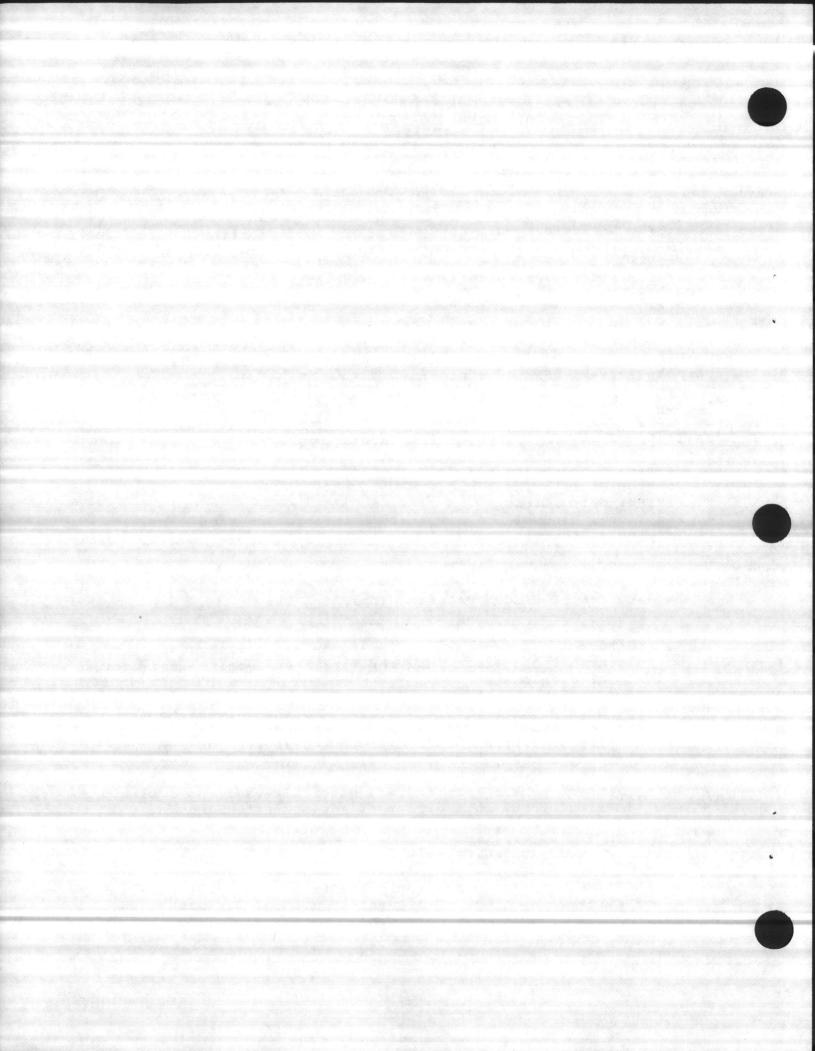
2. Using list of work operations and materials used, hold weekly safety meetings and focus on a different job operation and associated hazards each time.

3. Training materials available.

a. FHCP Training Set - 3/4 inch videotapes (no. 505215 DN), two trainer guides (no. 6050.5-G-1), and 15 student workbooks (no. 6050.5-W).



ENCLOSURE ())

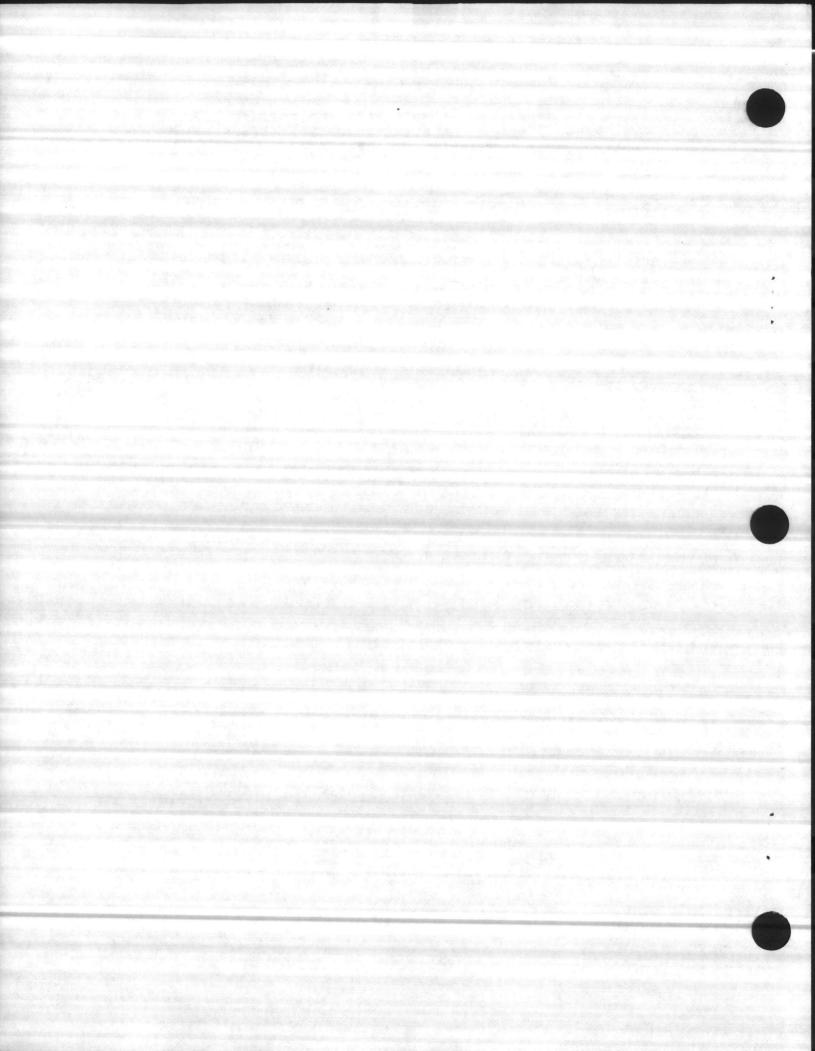


b. training package available, for 165 dollars, from National Audiovisual Center (NAC), Customer Services Staff, 8700 Edgeworth Drive, Capitol Heights, MD 20743-3701.

C. TAVSC

d. other

4. Document all training at shop/unit level. Training required for all personnel.





UNITED STATES MARINE CORPS MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542-5001

BO 5100.20 SAFD/mdg 30 Nov 1988

BASE ORDER 5100.20

From:	Commanding General
To:	Distribution List

Subj: HAZARD COMMUNICATION PROGRAM

Ref: (a) 29 Code of Federal Regulations, Part 1910.1200 (b) MCO 5100.25

1. Purpose. The Hazard Communication Program is designed to ensure pertinent data concerning the safe usage of hazardous materials is made available to the users of those materials. The purpose of this Order is to establish a Hazard Communication Program at Marine Corps Base, Camp Lejeune and to set forth responsibility for administration of the program.

2. <u>Background</u>. The growing list of hazardous materials within the government supply system requires constant vigilance against unsafe handling, mixing, storing and disposal. Exposures to hazardous materials may cause or contribute to many serious health problems such as heart and lung disorders, kidney and liver damage, cancer, sterility, mutation and skin diseases. Some materials may also have the potential to cause fires, explosions, or other serious mishaps. It becomes imperative to protect the user, the general public, and the environment by regulating the identification, transportation, storage, handling and use of hazardous material by providing a communication program.

3. Definition. For the purpose of this Order, a hazardous material is any material which because of its quantity, concentration, physical, chemical or infectious characteristics may pose a substantial hazard to human health or the environment when used, released or spilled into the environment. This Order does not apply to any consumer products. A consumer product is any product with which department heads/ organizational commanders/directors can demonstrate is used in the workplace in the same manner as normal consumer usage. Workers such as office workers, bank tellers, etc., who encounter hazardous materials only in non-routine, isolated instances are not covered by the provisions of this Order. This Order includes but is not limited to:

- a. Labeling of hazardous materials.
 - b. Material Safety Data Sheets (MSDS) requirements.
 - c. Personnel information and training, including training for non-routine tasks.
 - d. Hazardous material inventory.

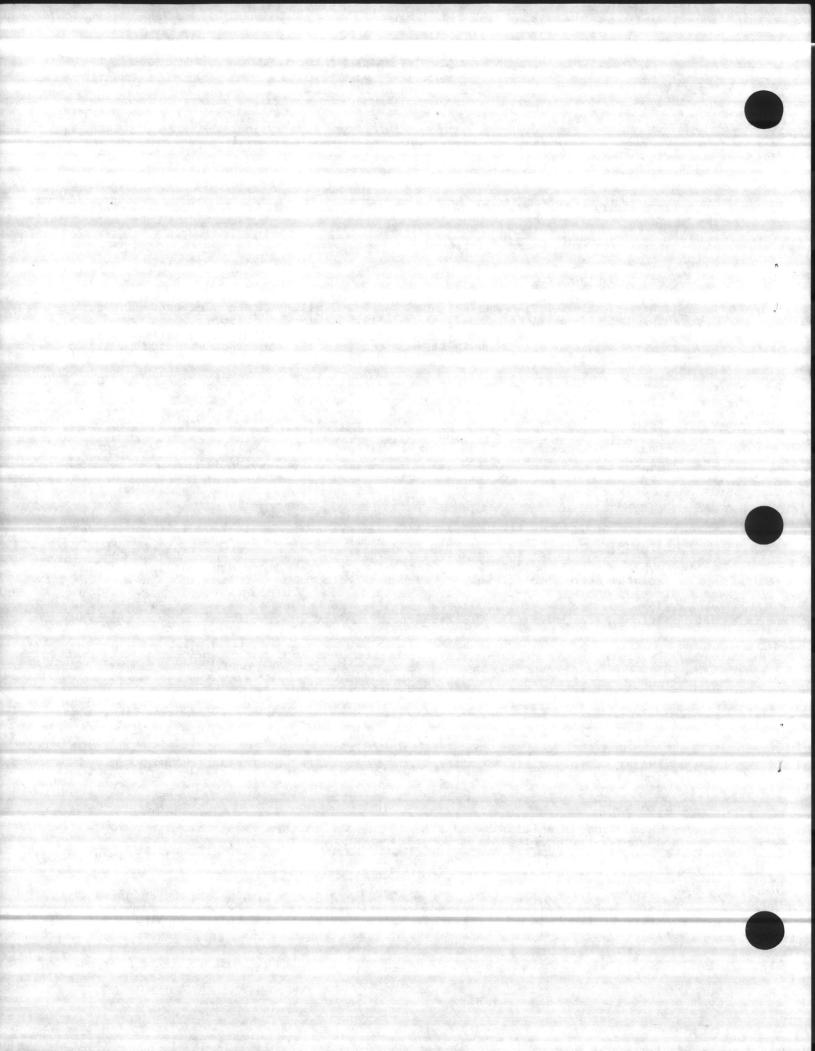
e. Hazardous material information for contractors working aboard Marine Corps Base, Camp Lejeune.

4. Labeling

a. Hazardous material must be clearly identified throughout its history with particular emphasis on identification for the end user. The affixing of appropriate warning labels to containers is the most practical means of accomplishing this objective.

b. Manufacturers, importers, and distributors are required by reference (a) to ensure that each container of hazardous material shipped to the user is labeled with the identity of the hazardous chemical, appropriate hazard warning, and the name and address of the chemical manufacturer or importer.





BO 5100.20 30 New 1988

c. Existing manufacturers labels on containers of hazardous materials shall not removed or defaced unless the containers are immediately marked with the required abel information as included in paragraph 4.b.

d. Upon removal from original shipping containers, the individual unit of packages of all hazardous materials must be immediately labeled as required in paragraph 4.b. Hazard labels shall be provided on each container prior to issue.

5. Macerial Safety Data Sheets (MSDS)

a. The MSDS is written or printed material which is designed to be a source of detailed information on chemical and physical hazards of material used in the workplace. The MSDS includes information on the specific identity of the hazardous product, its physical and chemical characteristics, known acute and chronic health effects and related health information, exposure limits, whether the material is considered to be a carcinogen, precautionary measures for handling, emergency first aid procedures, and the identification of the organization responsible for preparing information. Manufacturers are required to develop a MSDS for each hazardous material they produce and to furnish the appropriate MSDS to purchasers of the hazardous material.

b. Material Safety Data Sheets for all hazardous materials used must be readily available to personnel during each work shift.

C. Shop supervisors shall maintain copies of MSDS's covering hazardous materials used in their shops in a file or manual available to shop workers on all shifts. In addition to manufacturers MSDS's, the Assistant Chief of Staff, Logistics will have available the Hazardous Material Information System (HMIS) microfiche for hard print information on hazardous materials that are procured by national stock number.

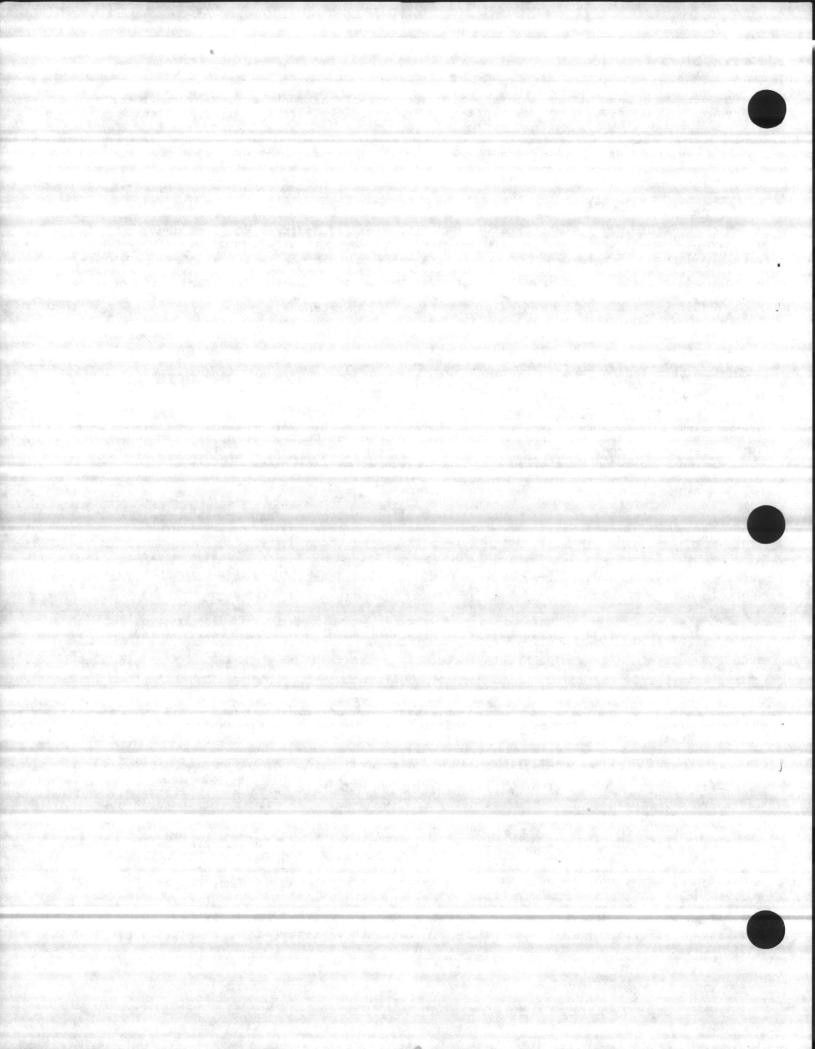
6. Training

a. References (a) and (b) outline the basic operation and requirements for the cupational Safety and Health Training Program. The objective of the training program is to reduce the incidence of job-related hazardous material exposure and delineate necessary protective measures. Reference (a) more specifically requires that personnel be provided with information and training on hazardous material in their work areas at the time of initial assignment and whenever a new hazard is introduced into the work area.

U. Hazardous material training must cover, at a minimum, information on the requirements of reference (a); the availability and details of this Order, including an explanation of the labeling requirements; an explanation of the MSDS, and how personnel may obtain and use the hazard information; the physical and health hazards of specific materials used in the work area; measures personnel can take to protect themselves, including personal protective equipment (PPE), engineering controls of the process, appropriate work practices, and emergency procedures; and methods that may be used to detect the presence or release of a hazardous material in the work area. Personnel must also be informed of the hazards of non-routine tasks that may take place in their work area.

c. Supervisory personnel will receive a minimum of two hours of documented formal training annually as required by reference (b) and as established by this Order. The training will be designed to prepare supervisors in complying with the labeling, MSDS, and inventory requirements of reference (a), as well as to assist them in ongoing subordinate personnel training.

d. All personnel involved in the handling or use of hazardous material must receive at a minimum one hour initial documented formal hazardous material training. Training must be updated when personnel are assigned to new areas or when shop processes change to introduce new chemical hazards to the work area. Shop supervisors will ensure that initial training is provided to personnel newly assigned to their areas. Updates of training due to process changes will be accomplished as necessary shop supervisors during weekly standup safety meetings. Informal training and dating provided by the supervisor must be documented quarterly on a cumulative basis



and reported to the Civilian Personnel Division and Nonappropriated Fund Personnel Division quarterly for inclusion in the Official Personnel Folder. Training records for military personnel will be retained at the unit level.

Hazardous Material Inventory

a. A complete inventory of all hazardous materials used must be developed and maintained for each shop. This inventory will serve as a tool in the process of providing nazardous material information to personnel. The updated inventory listing will be printed at least guarterly and will include location and chemical or common name for each hazardous material, matching that found on appropriate corresponding MSDS'S.

b. Maintenance personnel are frequently called upon to perform repair operations in areas where hazardous materials are present. They must have information about such materials and the potential dangers before they enter these areas in order to take the necessary precautions to protect themselves. Before assigning jobs in high hazard areas, maintenance supervisors should contact the Industrial Hygienist, extensions 5707/2/07, and Base Safety, extensions 3891/5725, for an evaluation of the hazards and requirements for work precautions. Supervisors of the Base Maintenance Division should contact the Base Maintenance Industrial Hygienist, extension 3046, for an evaluation and recommendations prior to job assignment in high hazard areas. Figh hazard areas include but are not limited to, areas in and around process and storage tanks, confined spaces, ventilation duct work and piping for chemical tanks, and storage compounds for hazardous materials.

8. Action

a. Department Heads/Commanders and Directors

(1) Appoint in writing a Hazardous Material Safety Officer (HMSO) for those units engaged in industrial operations, i.e., Facilities, Logistics, Special Services, the Dependent Schools Maintenance Section, etc. The HMSO may appoint in writing a Hazardous Material Safety Coordinator(s) (HMSC) to serve in the absence of and to assist the HMSO in order to provide continuity at the using unit level for hazardous material information, training, inventory, and MSDS control.

(2) Provide the Base Safety Manager, Industrial Hygienist and Base Fire Protection Division with updated list of HMSO's and HMSC's.

(3) Ensure that supervisors and HMSO's are trained in the use and interpretation of MSDS's to enable them to effectively provide the required training for subordinate personnel. MSDS training for HMSO's/HMSC's and supervisors is available through the Base Safety Office.

Assistant Chief of Staff, Logistics

(1) Implement procedures to ensure acquisition and distribution of MSDS's for all nazardous materials purchased, to include open purchase, BPA, etc.

(2) Maintain the HMIS and provide hard print copies of MSDS's to all Marine Corps Base and HMSO's and the Base Safety Manager upon request.

(3) Implement procedures to ensure that all containers of hazardous materials are labeled in accordance with reference (a) prior to issue.

c. Assistant Chief of Staff, Morale, Welfare and Recreation

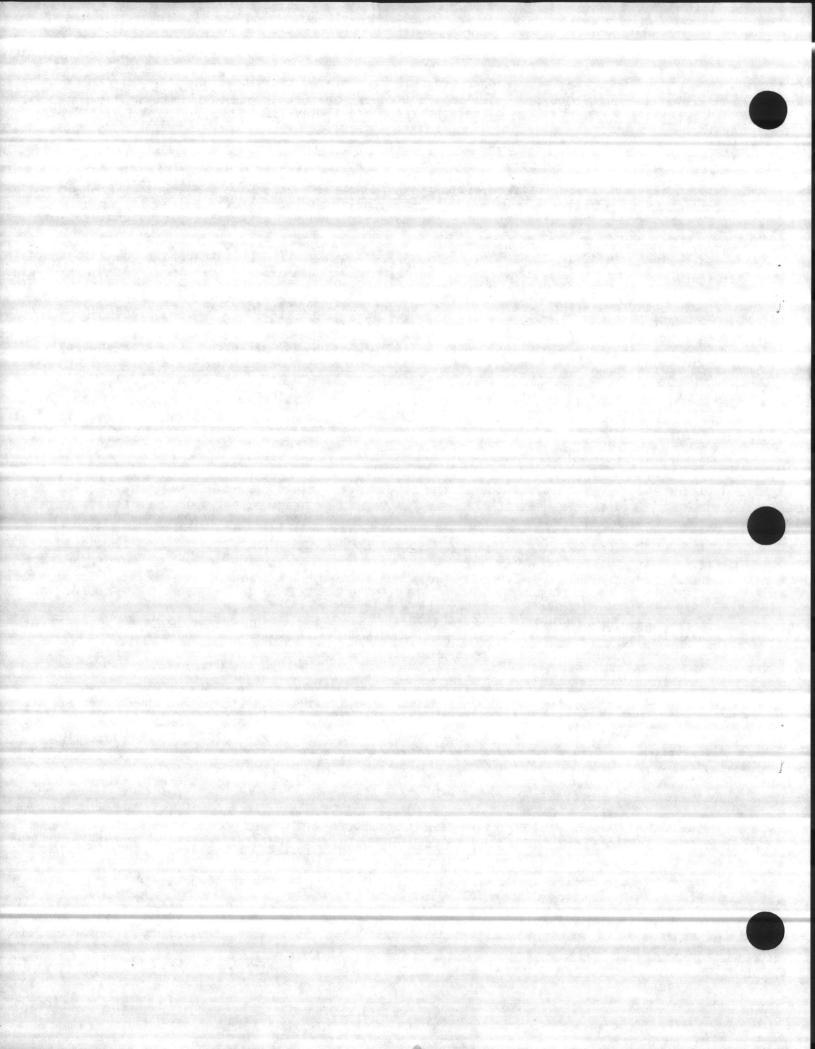
(1) Implement procedures to ensure acquisition and distribution of MSDS's for all hazardous materials purchased by Morale, Welfare and Recreation Department.

(2) Coordinate with Assistant Chief of Staff, Logistics to obtain MSDS information from the Marine Corps HMIS.

(3) Forward copies of MSDS's received to Assistant Chief of Staff, Logistics to ensure inclusion of MSDS's in MSDS file.







BU 5100.20 30 Nov 1988

c. Base Safety Manager

(1) Maintain on file MSDS's for all locally purchased, non-standard stock hazardous items, i.e., those procured in small quantities for local use, Blanket Purchase Agreements (BPA's), open purchase, etc., in support of the Hazardous Material Safety Training Program.

(2) Monitor the overall Hazard Communication Program by adequate inspections and surveys.

(3) Upon request, provide technical assistance to Marine Corps Base units in developing Hazardous Communication Program procedures.

(4) Provide support to the Civilian Personnel Division, Training Branch and Non-Appropriated Fund Personnel Division (NAFPD) by making available specific information and instructions on hazardous materials.

(5) Provide assistance to Department Heads/Commanders and Directors for training shop supervisors, and HMSO's.

e. Hazardous Material Safety Officer (HMSO)

(1) Hazardous Material Safety Officers will serve as the unit point of contact for all matters relating to hazardous materials.

(2) Compile and maintain a comprehensive inventory of hazardous materials utilized in each respective workplace.

(3) Ensure MSDS's are on file and current for each hazardous item identified on the unit inventory. Ensure acquisition of MSDS's on all nonstandard, nonstocked hazardous materials which are procured by open purchase. Copies of such MSDS's shall be forwarded to the Base Safety Manager.

(4) Ensure that safety and health education training is presented to all personnel working with hazardous materials to include awareness of the potential hazards involved, relevant systems of exposure, emergency treatment, precautions for safe use and disposal as well as PPE and controls appropriate to the situation. Information contained in MSDS's form the basis for this training.

(5) Maintain an adequate supply of "GENERIC" (fill in the blank) hazard labels to be affixed to any container into which a hazardous chemical is transferred from its original container. The label must contain the chemical name, hazard warning, and protection required.

f. Civilian Personnel Division/Director, Non-Appropriated Fund Personnel Division

(1) Provide training support in the development and implementation of a training program for all personnel who handle and use hazardous materials.

(2) Will maintain the training records for personnel as required by current directives.

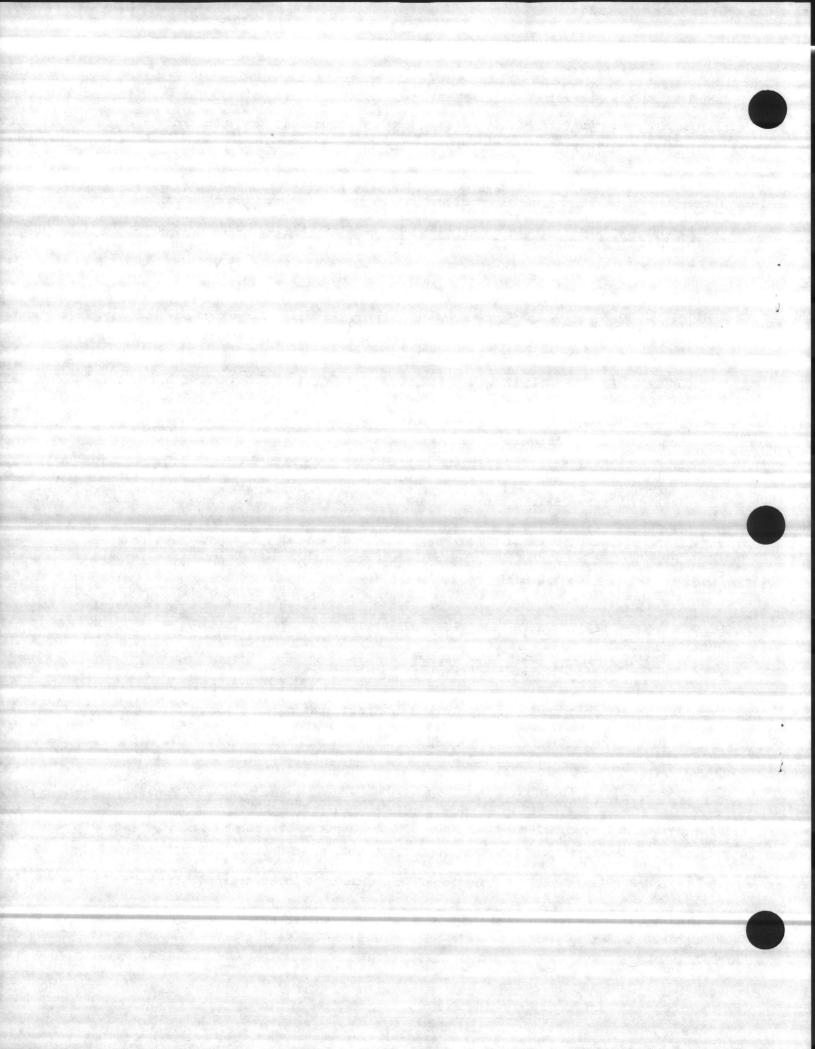
g. Supervisors

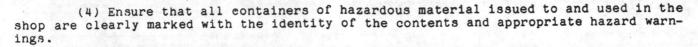
(1) Will familiarize themselves with the hazards presented by each hazardous material used or stored in their cognizant area. This will be accomplished by frequent review and study of relevant MSDS's. The supervisor will be aware of material hazards, adverse effects, characteristics and protective measures required for each hazardous material encountered in their work area.

(2) Ensure that subordinate personnel are trained in accordance with references (a) and (b) as well as paragraph 6 of this Order.

(3) Provide and enforce the use of PPE needed to protect personnel from known r potentially adverse effects of hazardous materials.

4





(5) Ensure that all process tanks, equipment and portable containers are clearly labeled with the name of the contents and appropriate hazard information.

(6) Ensure that all personnel read and understand all hazardous material labels, MSDS's, and other hazard information appropriate to the work area.

(7) Ensure that a copy of this Order is readily available to personnel upon request.

h. Resident Officer-in-Charge of Construction. Ensure all service and construction contracts under ROICC cognizance require a meeting between the contractor, a Base Safety representative and the affected shop supervisor prior to the contractor initiating work within the facility. The meeting will be scheduled for the purpose of informing the contractor of hazardous materials which their personnel may encounter and of appropriate work precautions and protective equipment. Ensure contracts also specify the contractor furnish the Base Safety Office, Industrial Hygienist and Base Fire Protection Division with a MSDS for each hazardous material the contractor will introduce into facility workplaces occupied by Marine Corps Base personnel and, further, ensure the contractor complies with the requirements of reference (a) for such materials.

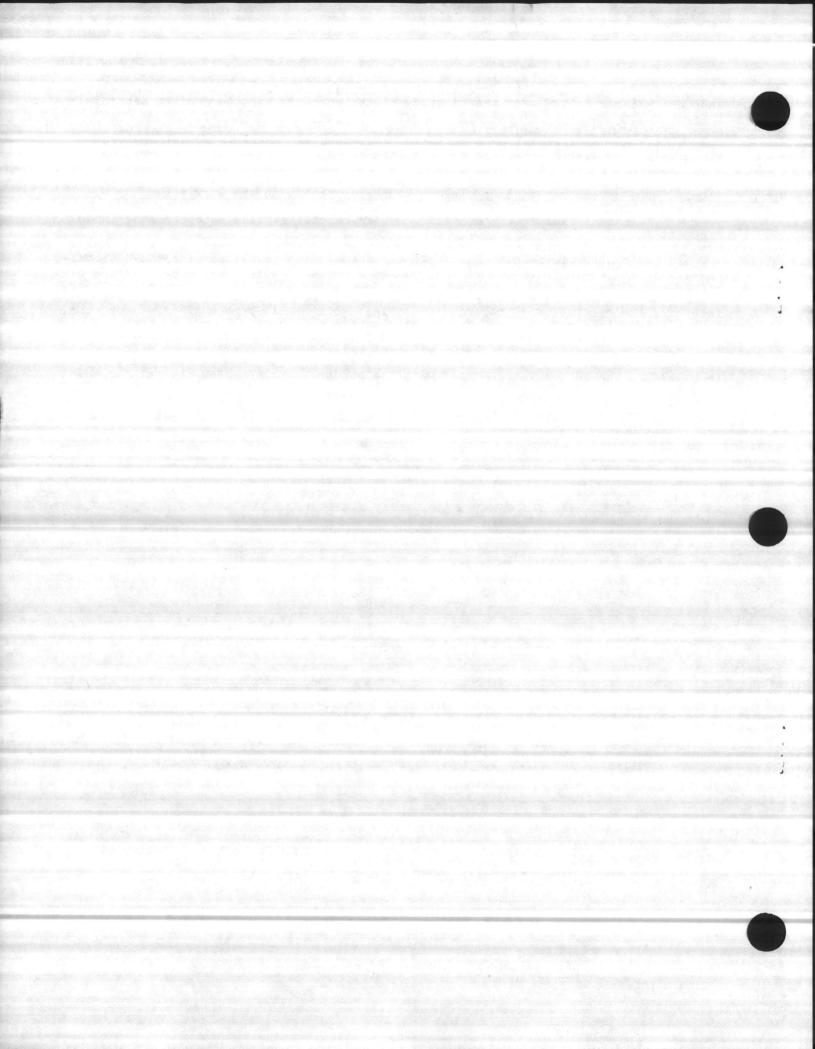
10. <u>Concurrence</u>. This Order has been coordinated and concurred in by the Director, East Coast Commissary Complex.

KEISER

Chief of Staff

DISTRIBUTION: A





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DESCRIPTION:

V

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L-4559-C May 1985

MATERIAL SAFETY DATA SHEET

An explanation of the terms used herein may be found in OSHA 29 CFR 1910.1200, available from OSHA regional or area offices. (Essentially similar to U.S. Department of Labor Form OSHA-20 and generally accepted in Canada for information purposes) Do Not Duplicate This Form. Request an Original.

I. PRODUCT IDENTIFICATION

	Acetylene	SYNONYMS Acetylen, Ethine, Ethyne, Narcy	lene
FORMULA	C ₂ H ₂	CHEMICAL Alkyne	
		MOLECULAR . 26.038	

TRADE NAME Acetylene (This product is intended for welding and cutting use.)

II. HAZARDOUS INGREDIENTS

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding and cutting with the normal use of this product are covered by Section VI. The term "hazardous" should be interpreted as a term required and defined in OSHA 29 CFR 1910.1200 and does not necessarily imply the existance of any hazard.

MATERIAL (CAS NO.)		1984-1985 ACGIH TL	-TWA (OSHA-PEL)	
Acetylene (74-86-2)		100 Simple asphyxiant (Non		
	62 41			
		Manual Contractor		
	III. PHYSICAL	DATA		

BOILING POINT, 760 mm. Hg	Not Applicable	SUBLIMATION POINT	-84°C (-119.2°F) @ 760mm Hg
SPECIFIC GRAVITY (H2O = 1)	Not Applicable	VAPOR PRESSURE AT 21 °C.	635 psig
VAPOR DENSITY (air = 1)	0.91	SOLUBILITY IN WATER, % by wt.	Slight
PERCENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	Not Applicable

APPEARANCE AND ODOR Colorless gas at normal temperature and pressure; garlic-like odor.

EMERGENCY PHONE NUMBER

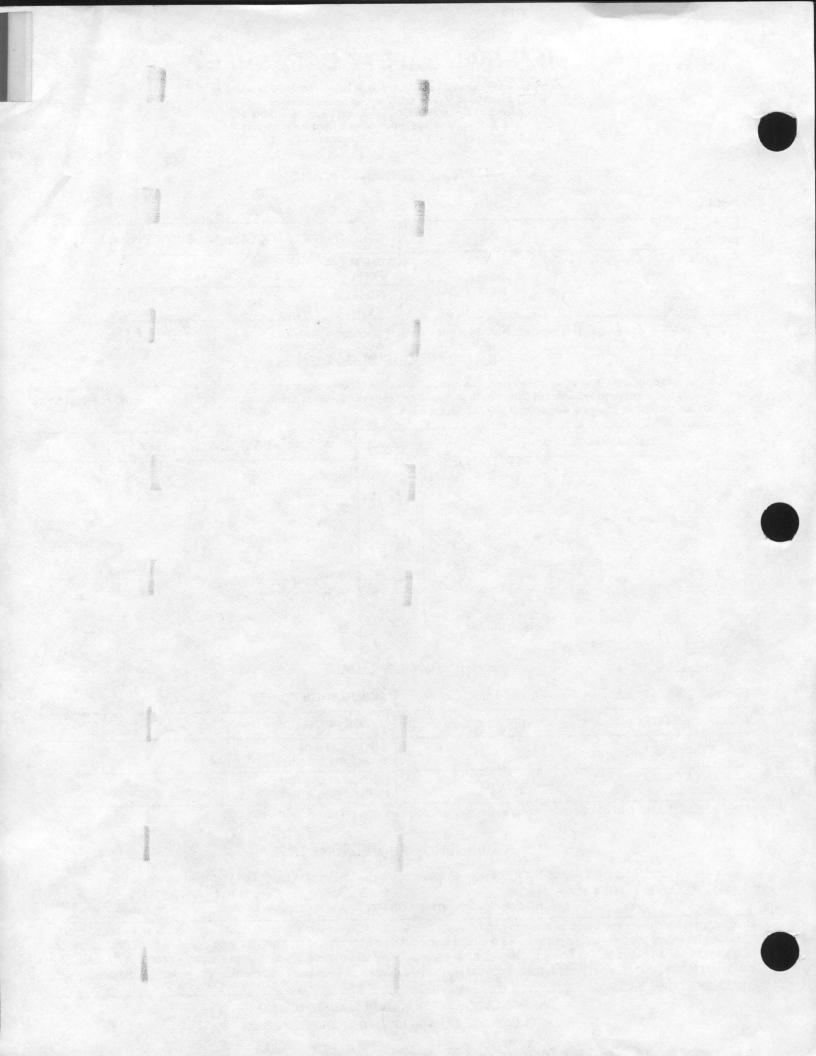
IN CASE OF EMERGENCIES involving this material, further information is available at all times:

In the USA 304 - 744-3487 In Canada 514 - 645-5311

For routine information contact your local supplier

Union Carbide requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

UNION CARBIDE CORPORATION C LINDE DIVISION UNION CARBIDE CANADA LIMITED C LINDE DIVISION



IV. HEALTH HAZARD DATA

IRESHOLD LIMIT VALUE

he ACGIH 1984-85 recommended limit for welding fume, not otherwise classified (NOC), is 5mg/m³. TLV-TWA's should be used as a guide in the control of health hazards and not as fine lines between sale and dangerous concentrations. See Section VI for specific fume constituents which may modify this TLV-TWA.

EFFECTS OF OVEREXPOSURE AND EMERGENCY AND FIRST AID PROCEDURES working with welding and cutting may create one or more of the following health hazards:

FUMES AND GASES can be dangerous to your health and may cause serious lung disease."

HEAT RAYS (INFRARED RADIATION from the flame or hot metal) can injure eyes.

NOISE can damage hearing.

Acetylene is an asphyxiant. Moderate concentrations may cause headache, drowsiness, dizziness and unconsciousness. Lack of oxygen can cause death. Keep your head out of the fumes. Do not breathe fumes and gases caused by the process. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. The type and amount of fumes and gases depend on the equipment and supplies used. Possibly dangerous materials may be found in fluxes, coatings, gases, and metals. Get a Material Safety Data Sheet (MSDS) for every material used. Air samples can be used to find out what respiratory protection is needed.

Wear correct ear, eye, and body protection.

Short term overexposure to fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes.

IXTURES: When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, expected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an ustrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids re properties which can cause serious injury or death.

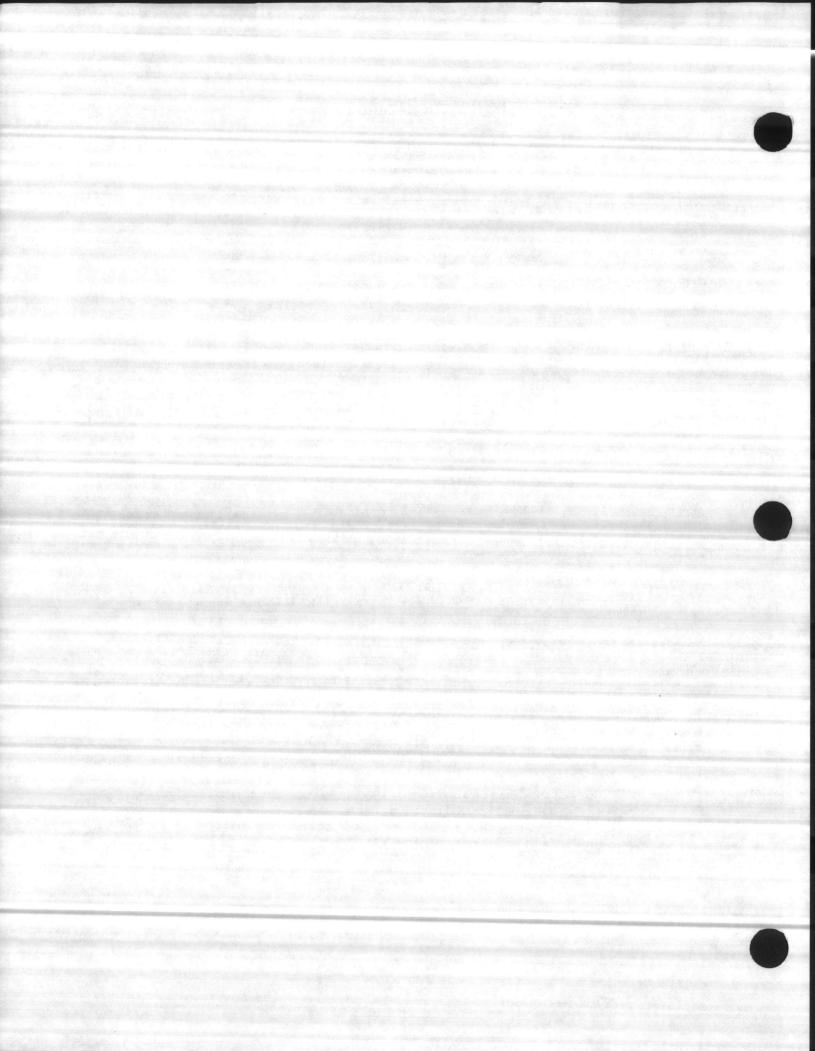
A detailed description of the Health Hazards and their consequences may be found in Linde's free safety booklet L-2035. You may obtain copies from your local supplier, or by writing to Union Carbide Corporation, Linde Division, Communications Department, 39 Old Ridgebury Road, Danbury, Connecticut, 06817-0001.

FIRST AID IN CASE OF EMERGENCY - Call for medical aid. Employ First Aid techniques recommended by the American Red Cross. IF BREATHING IS DIFFICULT give oxygen. Call a physician. IF NOT BREATHING, begin artificial respiration, preferably mouthto-mouth. If no detectable pulse, begin external heart massage. Immediately call a physician. IN CASE OF EYE BURN call a physician.

***NOTES TO PHYSICIAN:**

- Gases, fumes, and dusts may cause irritation to the eyes, lungs, nose, and throat. Some toxic gases associated with Acute welding and related processes may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty breathing, frequent coughing, or chest pains.
- Protracted inhalation of air contaminants may lead to their accumulation in the lungs, a condition which may be seen Chronic as dense areas on chest x-rays. The severity of change is proportional to the length of exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on x-rays may be caused by non-work related factors such as smoking, etc.





V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	- 17.8°C (0°	F) T.C.C.	AUTOIGNITION TEMPERATURE	299°C (571°F)
FLAMMABLE LIMITS IN AIR, % by volume		2.3%	UPPER	100%
EXTINGUISHING MED	IA	e beldeste statistica	and the constant of the second	
See paragraphs below.				

SPECIAL FIRE FIGHTING PROCEDURES

Refer to CGA pamphlet SB-4, "Handling Acetylene Cylinders in Fire Situations."

Evacuate all personnel from danger area. Immediately cool containers with water spray from maximum distance taking care not to extinguish flames. Remove ignition sources if without risk. If flames are accidentally extinguished, explosive re-ignition may occur. Use self-contained breathing apparatus. Stop flow of gas if without risk while continuing cooling water spray. Remove all containers from area of fire if without risk. Allow fire to burn out. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Extremely flammable gas. Forms explosive mixtures with air and oxidizing agents. Container may rupture due to heat of fire. Do not extinguish flames due to possibility of explosive re-ignition. Flammable vapors may spread from leak. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with approved explosion meter. No part of a container should be subjected to a temperature higher than 52°C (approximately 125°F). All containers are provided with a pressure relief device designed to vent contents when they are exposed to elevated temperature. Contact with copper, silver, or mercury or their alloys or halogens can cause, explosion.

VI. REACTIVITY DATA

	STABIL	ITY	CONDITIONS TO AVOID
	UNSTABLE	STABLE	Stable as shipped. Avoid use at pressures above 15 psig.
1	X		

INCOMPATIBILITY (materials to avoid)

Copper, silver, mercury or their alloys, oxidizing agents, acids, halogens, moisture.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition or burning may produce $CO/CO_2/H_2$. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction or oxidation of the material being worked.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID
May Occur Will not Occur		Elevated temperature and pressure and/or the presence of a catalyst.
X	The Louis Department of the second	

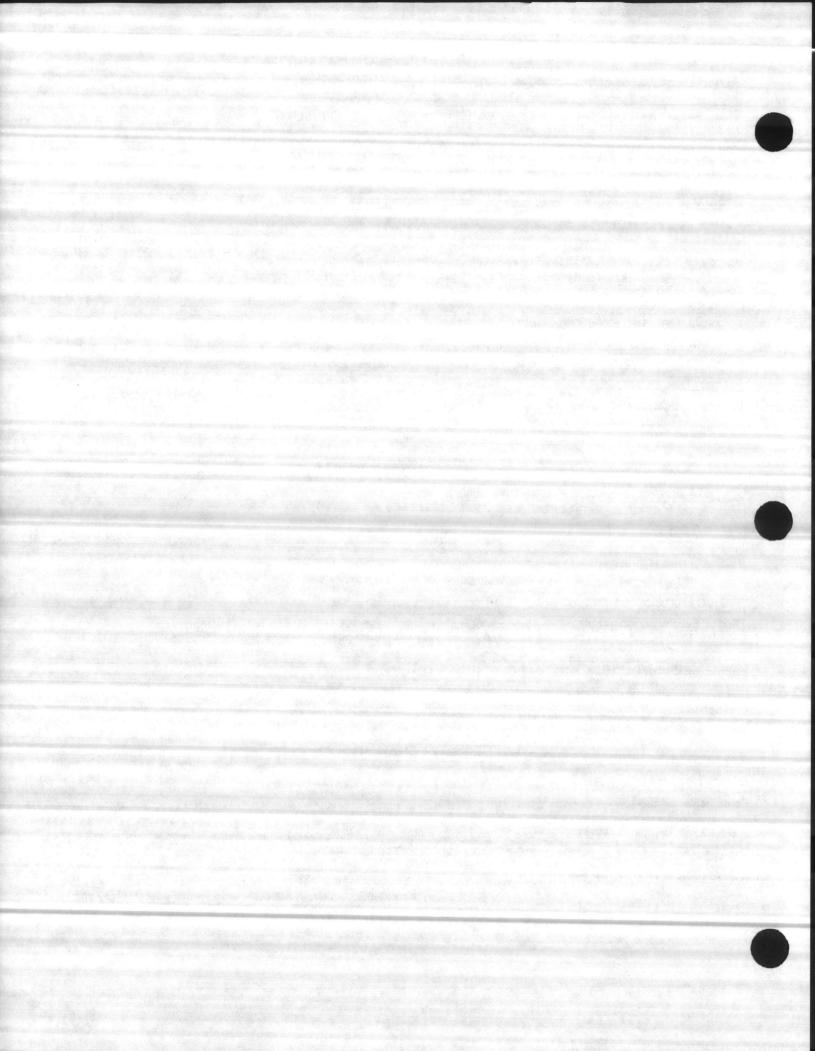
VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Forms explosive mixtures with air (See Section V). Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if without risk. Reduce vapors with fog or fine water spray. Shut off leak if without risk. Ventilate area of leak or move leaking container to well-ventilated area. Flammable gas may spread from leak. Before entering area, expecially confined areas, check atmosphere with appropriate device.

WASTE DISPOSAL METHOD Prevent waste from contaminating surrounding environment. Keep personnel away. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and local regulations.





VIII. SPECIAL PROTECTION INFORMATION

PIRATORY PROTECTION (specify type) — Use respirable fume respirator or air supplied respirator when working in ned space or where local exhaust or ventilation does not keep exposure below TLV. Select as per OSHA29 CFR1910.134.

LOCAL EXHAUST — Use enough ventilation, local exhaust or both, to keep the fumes and gases belowTLV's in the worker's breathing zone and the general area. Train the worker to keep his head out of the
fumes.MECHANICAL (general)ALWAYS WORK WITH ENOUGH VENTILATION

VENTILATION

SPECIAL

OTHER Depends on specific use conditions, and location. Use adequate ventilation or personal respiratory protection. See Section IX and OSHA29 CFR1910.252.

Not applicable

PROTECTIVE GLOVES

Welding gloves recommended

EYE PROTECTION — Wear goggles with filter lens selected as per ANSI Z49.1. Provide protective screens and goggles, if increasary, to protect others. Select as per OSHA29 CFR1910.133.

OTHER PROTECTIVE EQUIPMENT — As needed, wear hand, head, and body protection which help to prevent injury from radiation, and sparks. See ANSI Z49.1. At a minimum this includes welder's gloves and protective goggles, and may include arm protectors, prons, hats, shoulder protection, as well as substantial clothing. Train the worker not to touch live electrical parts.

IX. SPECIAL PRECAUTIONS

s and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being worked, ocess, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and 'o which workers may be exposed include: coatings on the metal being worked (such as paint, plating, or galvanizing), the set of workers and the volume of the work area, the quality and amount of ventilation, the position of the worker's head with aspect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from eaning and degreasing activities).

ne recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an r sample from inside the worker's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1, available from the American celding Society, 550 N.W. Le Jeune Rd., Miami, FL 33126.

ead and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard 49.1, "Safety In Welding And Cutting" published by the American Welding Society and OSHA Publication 2206 (29CFR1910), U.S. overnment Printing Office, Washington, D.C. 20402 for more details. For further safety and health information refer to Linde's free .fety booklet L-2035.

THER HANDLING AND STORAGE CONDITIONS

sat and sparks during use could be the source of ignition of combustible materials. Prevent fires.

afer to NFPA 51B "Cutting and Welding Processes" and NFPA 50 "Oxygen-Fuel Gas Systems." Use piping and equipment adequately asigned to withstand pressures to be encountered. Gas can cause rapid suffocation due to oxygen deficiency. Store and use with requate ventilation. Close valve when not in use and when empty. Never work on a pressurized system.

e opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions use of the product are not within the control of Union Carbide, it is the user's obligation to determine the conditions of safe use the product.

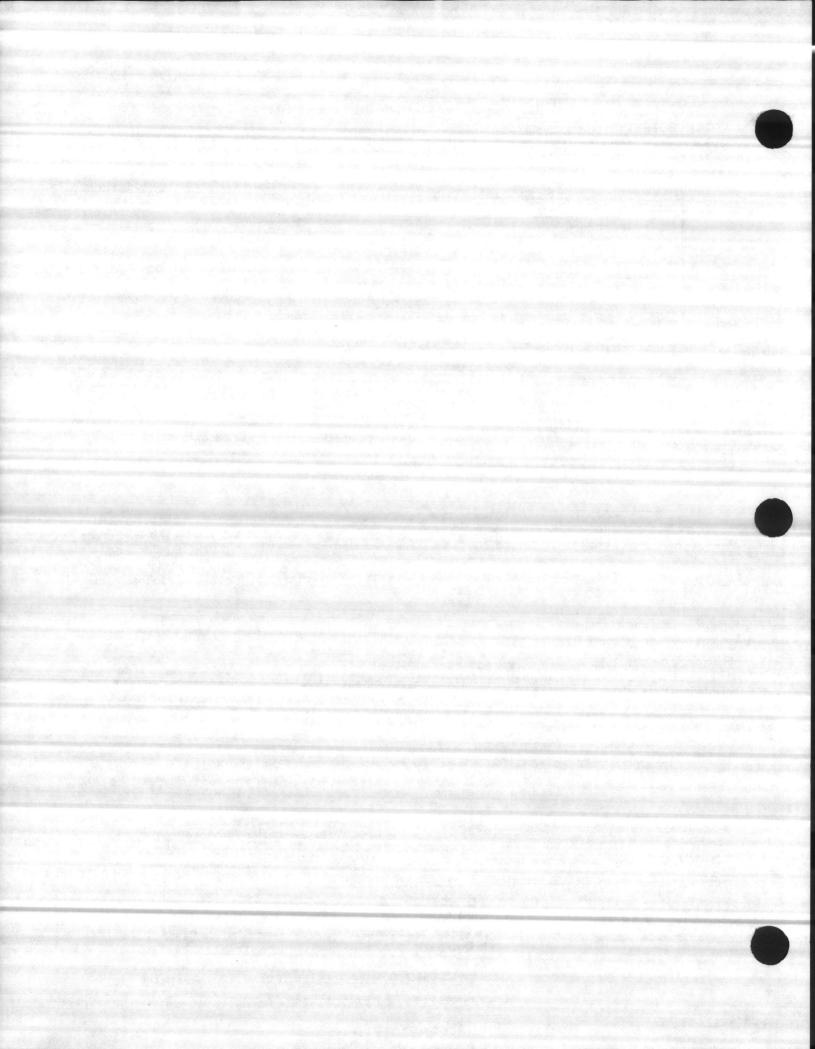


GENERAL OFFICES IN THE USA: Union Carbide Corporation Linde Division 39 Old Ridgebury Road Danbury, CT 06817-0001

IN CANADA: Union Carbide Canada Limited Linde Division 123 Eglinton Avenue East Toronto, Ontario M4P IJ3

Other offices in principal cities all over the world.

Lithographed in U.S.A.



DESCRIPTION:

Acid, HYdrochloric

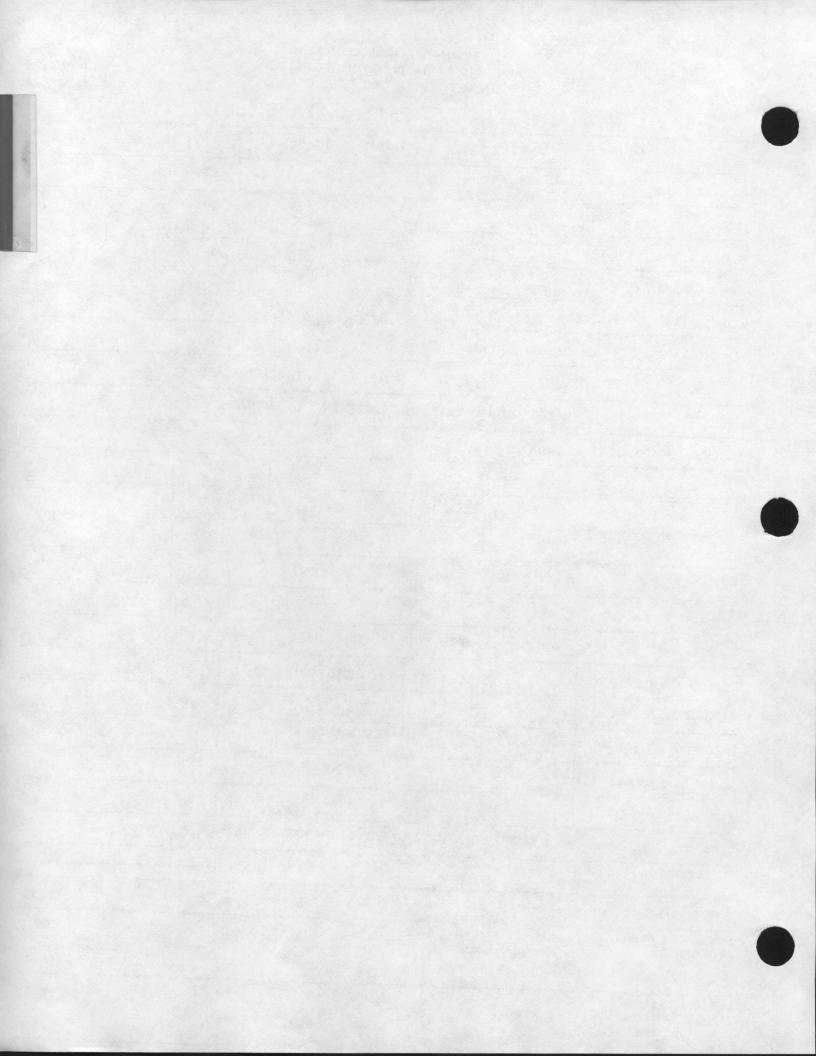
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EASTMAN KODAK COMPANY APPROVED BY U.S. DEPARTMENT OF LABOR "ESSENTIALLY SIMILAR" TO FORM OSHA-20



			7E.	
ODUCT NAME: Hydr	ochloric Acid	5.	ZE: 1 pt. & 6	1b.
EMICAL NAME: Hyda	cochloric Acid	SCD ND. =	13061 900485	
	eous mixture	MIN = R-0	$\begin{array}{r} 196.400 \\ 0 = 7647 \\ (716) 72 \end{array}$	-01-0
ANUFACTURER: East	tman Kodak Company		-	
DDRESS: 343	State Street, Roch	ester. New York 14650		
OR INFORMATION ON HEAL	TH HAZARDS CALL:			
•		INFORMATION EFFECTIVE AS	OF: 7-6-78	
and the second sec	SECTION II HAZARD	OUS INGREDIENTS OF MIXTURES		
RINCIPAL HAZARDOUS COM	PONENT (S)	%	6	TLV (Units)
RINCIPAL HALARDOUS COM			38.0 5 PI	om*
ydrogen Chloride Gas		36.5 -	- 38.0 5 P	
		(*ACG	IH 1977)	
	SECTION			
		(*ACG A III PHYSICAL DATA SPECIFIC GRAVITY (H ₂ O=1)		
BOILING POINT ("F.)	SECTION 227°F (108°C)	SPECIFIC GRAVITY (H2O=1)	1.19 (15/4	
BOILING POINT (°F.) VAPOR PRESSURE (mm Hg.)		SPECIFIC GRAVITY (H ₂ O = 1) PERCENT VOLATILE BY VOLUME (%) EVAPORATION RATE	1.19 (15/4	.)
BOILING POINT ("F.)	227°F (108°C)	SPECIFIC GRAVITY (H ₂ O = 1) PERCENT VOLATILE BY VOLUME (%)	1.19 (15/4	
BOILING POINT (°F.) VAPOR PRESSURE (mm Hg.)	227°F (108°C) 0.8 Complete	SPECIFIC GRAVITY (H ₂ O = 1) PERCENT VOLATILE BY VOLUME (%) EVAPORATION RATE (=1)	1.19 (15/4	
BOILING POINT ("F.) VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR = 1) SOLUBILITY IN WATER APPEARANCE AND ODOR	227°F (108°C) 0.8 Complete	SPECIFIC GRAVITY (H ₂ O = 1) PERCENT VOLATILE BY VOLUME (%) EVAPORATION RATE (1.19 (15/4 100 	
BOILING POINT ("F.) VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER APPEARANCE AND ODOR	227°F (108°C) 0.8 Complete Clear, colorless SECTION IV FIRE	III PHYSICAL DATA SPECIFIC GRAVITY (H:O=1) PERCENT VOLATILE BY VOLUME (%) EVAPORATION RATE (1.19 (15/4 100 	
BOILING POINT ("F.) VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR = 1) SOLUBILITY IN WATER APPEARANCE AND ODOR	227°F (108°C) 0.8 Complete Clear, colorless SECTION IV FIRE	SPECIFIC GRAVITY (H ₂ O = 1) PERCENT VOLATILE BY VOLUME (%) EVAPORATION RATE (1.19 (15/4 100 	dor
BOILING POINT ("F.) VAPOR PRESSURE (mm Hg.) VAPOR DENSITY (AIR = 1) SOLUBILITY IN WATER APPEARANCE AND ODOR FLASH POINT (Method used	227°F (108°C) 0.8 Complete Clear, colorless SECTION IV FIRE	III PHYSICAL DATA SPECIFIC GRAVITY (H ₂ O = 1) PERCENT VOLATILE BY VOLUME (%) EVAPORATION RATE (1.19 (15/4 100 	dor



	-	-	-	
1	3	0	6	1

SECTION V HEALTH HAZARD DATA

	THRESHOLD	LIMIT	VALUE	
--	-----------	-------	-------	--

EFFECTS OF OVEREXPOSURE <u>INHALATION</u>: Vapor causes severe irritation and/or ulceration of respiratory tract. <u>EYES</u>: Contact with the liquid causes severe burns. Vapor causes severe burns. Vapor causes severe burns. EMERGENCY AND FIRST AND <u>INHALATION</u>: Remove to fresh air. If respiratory problems develog

PROCEDURES water for at least 15 minutes and get medical attention. <u>SKIN:</u> Immediately flush with plenty of water for 15 minutes while removing contaminated clothing and shoes. Get medica attention.

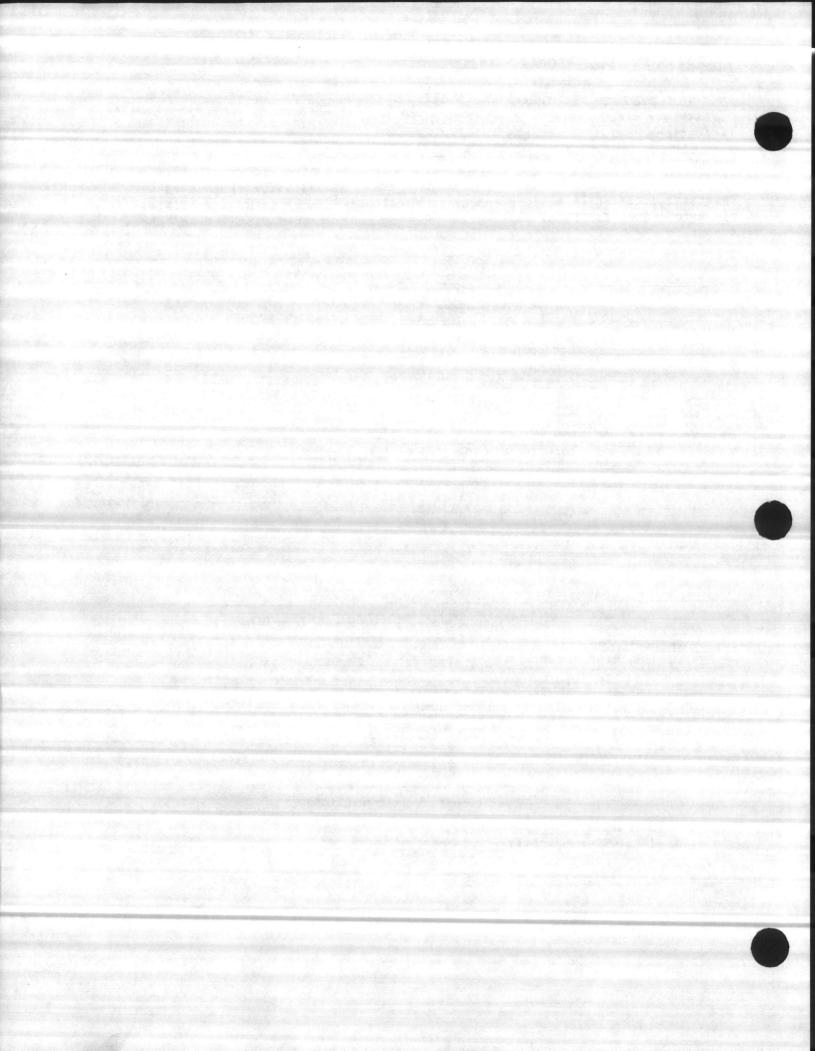
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		SECTIO	ON VI REACTIVITY DATA
STABILITY	UNSTABLE	1	CONDITIONS TO AVOID
	STABLE	x	
INCOMPATIBILITY (Materials to avoid) Strong	oxidizers, ca	arbides
HAZARDOUS DECOMPOSITION		HÇl Gas	and the second
HAZARDOUS POL	MERIZATION	CONDITIONS TO	AVOID
May Occur Wi	Il Not Occur X ^f		and the second
		SECTION VII S	SPILL OR LEAK PROCEDURES
STEPS TO BE TAKE IN CASE MATERIAL RELEASED OR SPIL	IS vermi	ng suitable p culite. Plac with soap and	protective clothing, absorb spilled material on ce in fiber carton. Incinerate. Wash spill area d water.
		Water.	ECIAL PROTECTION INFORMATION
RESPIRATORY PROT (Specify type) A	ECTION n approved	acid vapor re	espirator if ventilation is inadequate
VENTILATION	LOCAL EXHAU		
	MECHANICAL	general) Yei	
PROTECTIVE GLOVI	ES Yes		EYE PROTECTION Yes
OTHER PROTECTIVE		cessary to p	revent skin contact
	a star a star for	SECTION D	X SPECIAL PRECAUTIONS
PRECAUTIONS TO B		None	

MER PRECAUTIONS

None

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MATERIAL SAFETY DATA SHEET

MOBAY CHEMICAL COMPANY PITTSBURGH, PENNSYLVANIA 15205

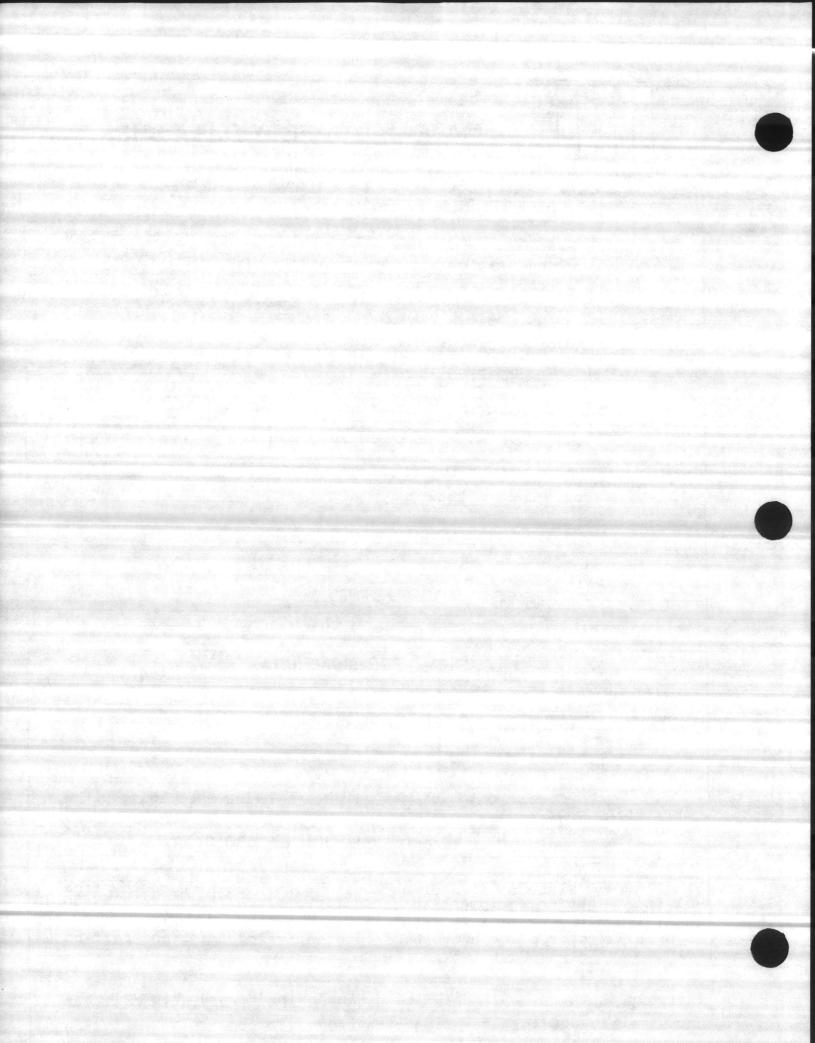
	SECTION I	and the second
MANUFACTURER'S NAME MOBAY CHEMIC	CAL COMPANY	EMERGENCY TELEPHONE NO. (412) 923-1800
ADDRESS (Number, Street, City, State, and ZIP Code) Penn-Lincoln Parkway West, Pit CHEMICAL NAME AND SYNONYMS	tsburgh, Penn	TRADE NAME AND SYNONYMS
CHEMICAL FAMILY Acid	FORMULA	нсі

SECTION II HAZARDOUS INGREDIENTS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES		*	TLV (Units)		
Hydrochloric acid	~	82	5		
		12	ppm		
	ine en la compañía de	1.1.1			
			- Andre		
			a		

SECT	ON III PHYSICAL DATA
BOILING POINT (*F.)	SPECIFIC GRAVITY (H20=1) (air=1) 1.26
VAPOR PRESSURE (mm Hg.)	PERCENT VOLATILE BY VOLUME (%)
VAPOR DENSITY (AIR+1)	EVAPORATION RATE (*1)
SOLUBILITY IN WATER	

irritating odor.

SECTION IV FIRE AND EX	PLOSION HAZARD DA	TA	
FLASH POINT (Method used)	FLAMMABLE LIMITS	Lei	Uel
EXTINGUISHING MEDIA Since no fire or expl HCl fire fighting equipment suitab SPECIAL FIRE FIGHTING PROCEDURES DE Provided Should the area of fire contain HC ed by full cover plastic or rubber tained breathing apparatus.	<u>le for other hazard</u> i vapors firemen st	ould be r	protect-
UNUSUAL FIRE AND EXPLOSION HAZARDS There is, however, a latent fire of tacts metal, due to generation of h	And the second	when HCl	con-



SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

5 ppm per 8 hours exposure by A.C.G.I.H EFFECTS OF OVEREXPOSURE

Fumes of conc.HCl results in coughing.choking.and inflammation of the upper respiratory tract:exposed individuals should leave the contaminated area immediately.

EMERGENCY AND FIRST AID PROCEDURES

Skin contact-wash with large amounts of water and soap; consult a

physician. Eye contact-wash with water for 15 minutes and consult eye physician Inhalation-remove from contaminated area; administer oxygen if necessary

Swallowing-induce vomiting by drinking warm soapy water.

SECTION VI REACTIVITY DATA CONDITIONS TO AVOID STABILITY UNSTABLE STABLE INCOMPATABILITY (Materials to avoid) Highly corrosive to active metals with evolution of hydrogen gas HAZA ROOKS DECOMROSITION PRODUCTS which is highly flammable when mixed with air CONDITIONS TO AVOID MAY OCCUR HAZARDOUS POLYMERIZATION WILL NOT OCCUR

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Flush down sewer with large amounts of water when spilled. A fog nozzle attached to water supply from a fire hose will absorb the gases or vapors in immediate area until mist or gas can be shut off waste DISPOSAL METHOD For appreciable quantities of acid, neutralization with an alkaline material is required before disposal into a surface water system, State, and Federal regulations must be observed. Local,

	SECTION VIII SPECIAL PROTE	CTION INFORMATION
RESPIRATORY PRO	DIECTION (Specily lype) Self-contained <u>Bureau of Mines is adequa</u> LOCAL EXHAUST	breathing apparatus approved
· · · · · · · · · · · · · · · · · · ·	LOCAL EXHAUST	SPECIAL
VENTILATION	MECHANICAL (General)	OTHER
PROTECTIVE GLO	Rubber or plastic gloves	PROTECTION Safety goggles and face shield
OTHER PROTECTI Rubber or	VE EQUIPMENT plastic suits and rubber sa	

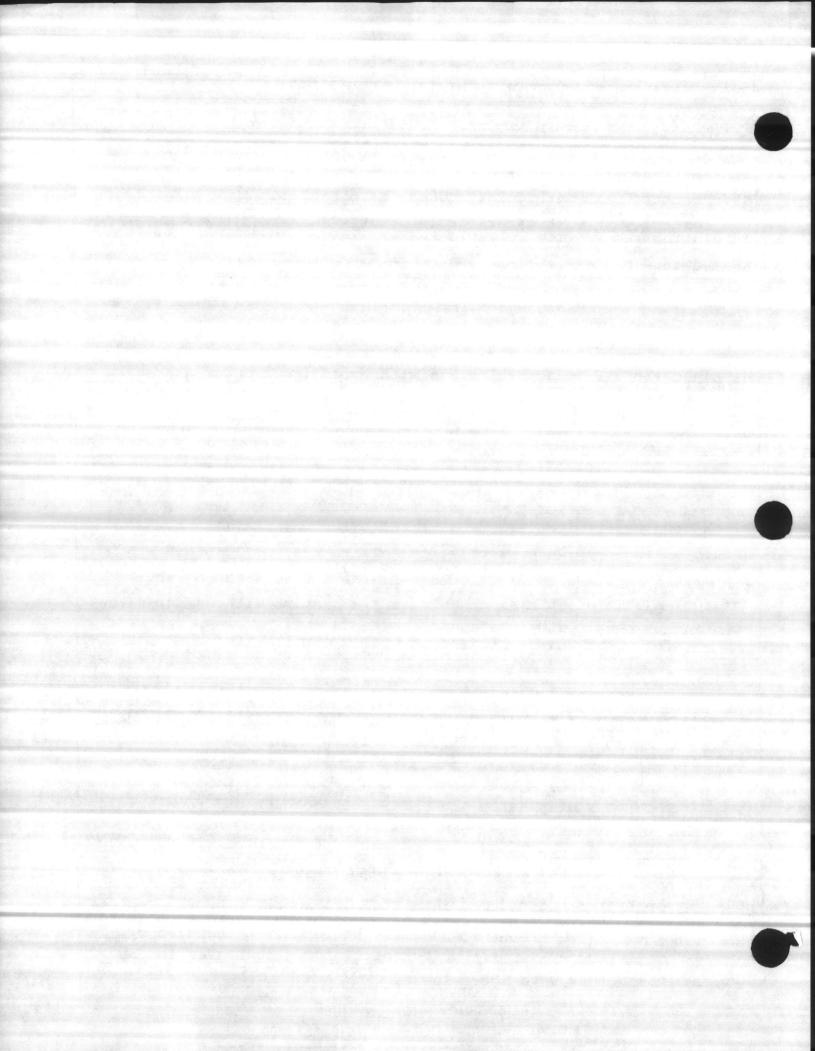
SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING HCl must be stored and shipped in containers approved by the Dept.of Transportation which classifies it as a corrosive liquid. A cool dry storage area should be provided and it should only be handled by A Leten PRE- ant I Could

roperly protected personnel; for further information, refer to the

LMCA Chemical Safety Data Sheet SD-39

EMERGENCY PHONE NUMBER MOBAY CHEMICAL COMPANY 412-923-1800

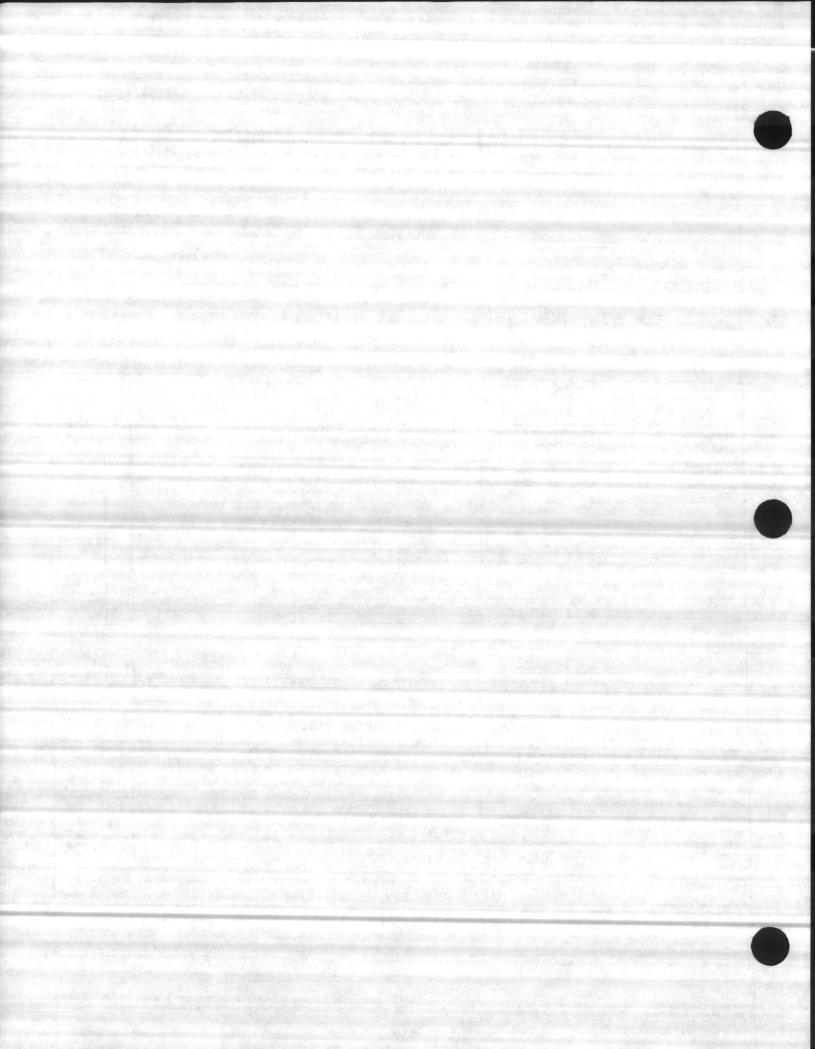


				OF LABOR th Administ	ON	rm App 18 No.	roved 44-R1387
MATERIA	L	SAFE	TY	DATA	SHEET JUN		1985
Required under US Shipbuilding,				egulations for FR 1915, 191			
		SECT					1 - 1989 1 - 1989
MANUFACTURER'S NAME RICCA CHEMICAL COMPANY					EMERGENCY TELEPHO 817 461-5601	NE NO.	
ADDRESS /Nymber, Street, City, State, and ZIP C 448 West Fork Dr. Arling	ton;	Texas	76012		the stranger and	1	1.7.14
CHEMICAL NAME AND SYNONYMS Hydrochloric Acid CHEMICAL FAMILY Inorganic Acid			FORM	TRADE NA	ME AND SYNONYME	00 N)	
SECTION	N 11 -	HAZAF	RDOUS	INGREDIE	NTS		
PAINTS, PRESERVATIVES, & SOLVENTS	×	TLV (Units)	A 15	LLOYS AND M	ETALLIC COATINGS	×	TLV (Units)
PIGMENTS			BASE	METAL			
CATALYST			ALLON	rs	langer and the second		
VEHICLE			METAL	LIC COATINGS	;		
SOLVENTS			FILLE	METAL	DRE FLUX		
ADDITIVES			OTHER	IS			2.
OTHERS		for the start	19 - Carl	a dan ba			
HAZARDOUS MIXTURE	S OF O	THER LIC	DUIDS, S	OLIDS, OR GAS	SES	*	(Units)
Hydrochloric Acid (v/v)						8.3	5ppm
274 		i de la composition d La composition de la c			and a second		22 22
	agan a An		1. (Jac	1		1	
SEC	TION	,		AL DATA			
	T			IC GRAVITY (H	-0-11	T	
VAPOR PRESSUILE (mm Hg.)	21	-	PERCE	T, VOLATILE	Approx.	1.	02

VAPOR PRESSURE (mm Hg.) BY VOLUME (%) EVAPORATION RATE VAPOR DENSITY (AIR=1) SOLUBILITY IN WATER Infinite . APPEARANCE AND ODOR Colorless solution; higher concentrations have HC1 odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA FLASH POINT (Method used) None FLAMMABLE LIMITS Lei Uel EXTINGUISHING MEDIA -SPECIAL FIRE FIGHTING PROCEDURES . UNUSUAL FIRE AND EXPLOSION HAZARDS -

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THE INFORMATION FUGHISHED HERCIN IS ELLIFYED TO SE ALCORATE MUD REPRESENTS THE BEST GATA CURRENTLY AVAILABLE TO US. NO WARRANTY. EXPRESSED OR IMPLIED. IS MADE AND RICCA CHEMICAL COMPANY ASSUMED NO LEGAL RESPONSIBILITY OR LIABILITY RESULTING FROM ITS USE.

SECTION V . HEALTH HAZARD DATA

RESHOLD LIMIT VALUE 5 ppm

EFFECTS OF OVEREXPOSURE Hydrochloric Acid can cause serious injury at strong concentrations.

EMERGENCY AND FIRST AID PROCEDURES Irrigate affected area. Get medical help. Ingestion: dilute with water or milk, do not induce vomiting. Get Medical Help.

			SECTIO		REACTIVITY DATA
STABILITY	UN	STABLE	an a Nobel	CONDITIO	NS TO AVOID
	ST	ABLE	x		
					hylenediamine, Ammonium Hydroxide in contact with Metals, Chlorine from Oxidiz
HAZARDOUS		MAY OCCU	JR		CONDITIONS TO AVOID
POLYMERIZATI	ON	WILL NOT	OCCUR	X	a second and the second s

SECTION VII - SPILL OR LEAK PROCEDURES

Cover the contaminated surface with Sodium Bicarbonate or a soda ash-slaked lime mixture(50-50). Mix and add water if necessary to form a slurry. Scoop up slurry and wash down the drain with excess water. Wash site with soda ash solution. WASTE DISPOSAL METHOD Add slowly to large volume of agitated solution of soda ash and slaked lime. Add neutralized solution to excess running water.

		ALC: NO.	
Self contai	notection (Specify type) ned breathing apparatus		
VENTILATION	LOCAL EXHAUST		SPECIAL
	MECHANICAL (General)	-	OTHER _
PROTECTIVE GLO	Kubber	E	Face Shield
OTHER PROTECT	Laboratory coat		

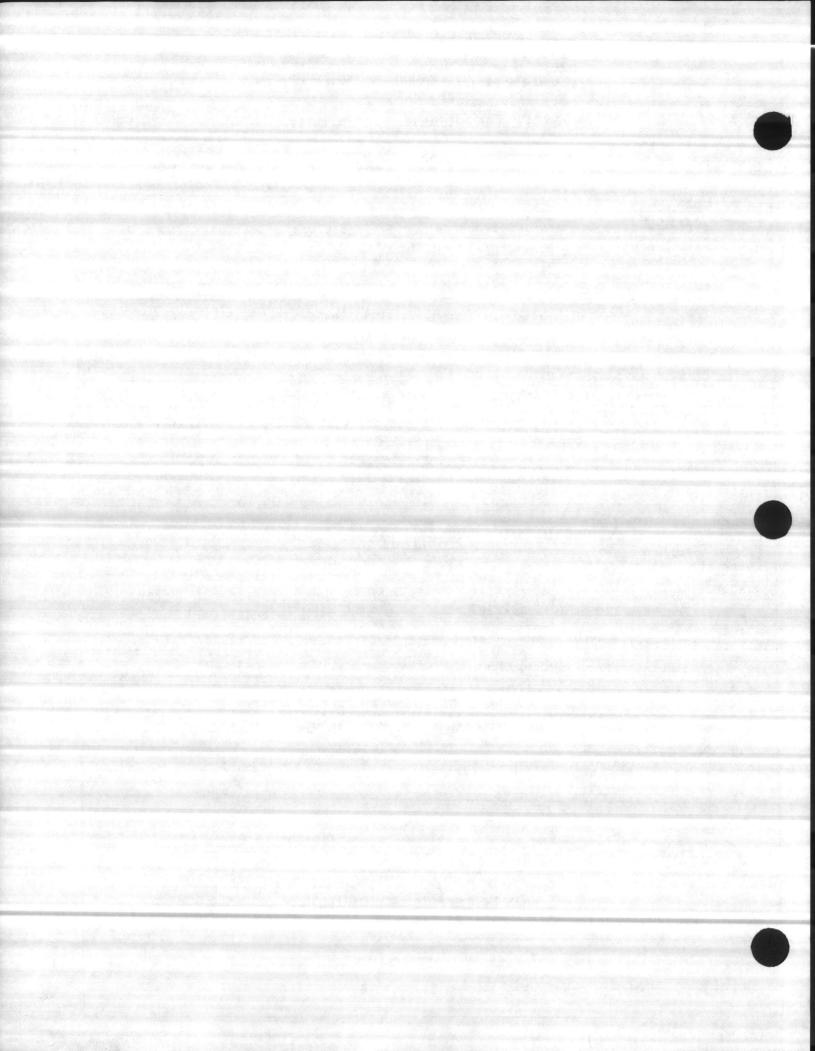
SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

-THER PRECAUTIONS

Store at room temperature

3700



HON - 44 TROOUS MATERIALS DETERMINATION

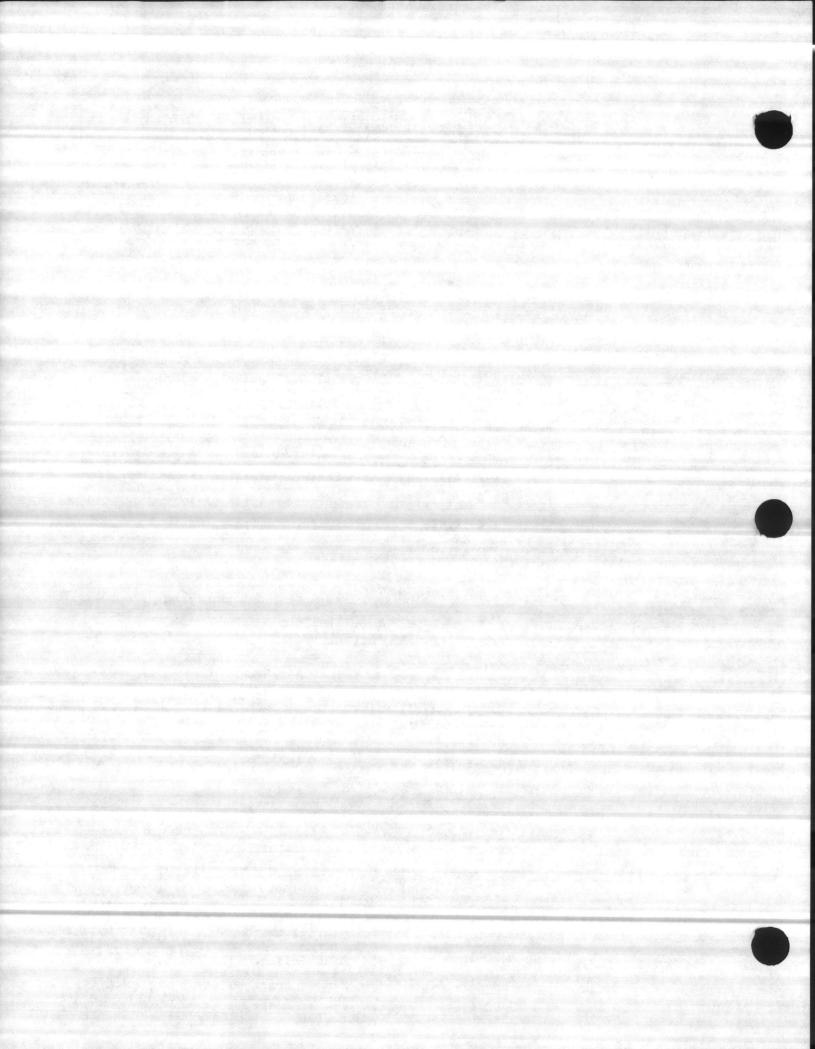
RICCA CHEMICAL COMPANY We. ("Isme of Supplier)

We, (tame of Supplier) have determined that the products listed below (or attached), which are sold to American Scientific Products and/or American Physicians Service & Supply are <u>run-hazardous</u> per the federal OSHA Hazard Communications Rule and/or respective state Right-to-Know laws. Therefore, a Material Safety Sata Short but not be producted for the product() Sheet has not been prepared for the product(s).

> • . i -JUN Supplier Representative i 4 1985 Dute

List the catalog numbers and item description of each of the non-hazardous products below, or as an attachment to this document.

&S Cat. No.	Mfr. Cat. No.	Item Description
	8130-16, 32	Sulfosalicylic Acid, 20%
	8146-16	Sulfuric Acid, 0.7%
	8200-32, 1,275,571	Stel and tomat hy a brozon
<u>1977 - 1977 - 19</u> 77	8230-32, 1	Sulfuric Acid, 0.0833 N
w. All the second second second	8250-32,1,2.5,5	Sulfuric Acid, 0.100 N
en halen 	8255-32, 1, 5	Sulfuric Acid, 0.1142 N
	8260-32, 1, 5	Sulfuric Acid, 0.200 N
AN LOW MAN	8370-16, 32	Tartaric Acid, 2%
States and the	8375-4	Tartaric Acid, 50 gm
New States and States and States	8380-4, 16	Tellurium Standard, 1 ml. = 1 mg.
ing in the second	8390-4, 16	Thallium Standard, 1 ml. = 1 mg.
	8400-4, 16	Thymol Blue, 0.04%
	8410-4, 16	Thymol Blue, 0.4%
	8670-16, 32	Total Ionic Strength Adjustment But
entre de la companya de la companya Na companya de la comp	8700-4, 16	Tungsten Standard, 1 ml. = 1 mg.
	8800-32, 1	Tungstic Acid Reagent
ang aga	8850-16, 32	Turk Blood Diluting Fluid
ergentage designifieres sets sets	8900-4, 16	Uranium Standard, 1 ml. = 1 mg.
	9120-32	Wash Solution
	9150-1, 2.5, 5	Water
	9450-4, 16	Zinc Acetate, 2 N
defe for state for the state of the	9490-16	Zinc Standard, 1 ml. = 0.001 mg.
- National Angle Angle - Angle - Angle	9495-16	Zinc Standard, 1 ml. = 0.1 mg.
	9500-4, 16	Zinc Standard, 1 ml. = 1 mg.
	9620-16	Zinc Sulfate, 10%
	9650-16, 32, 1	Zinc Sulfate, 1.180 Spec. Grav.
and the second	9700-4, 16	Zirconium Standard, 1 ml. = 1 mg.



DESCRIPTION:

Acid Sulfuric 0.250N

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April 2, 1986

To: AMERICAN SCIENTIFIC PRODUCTS

Re: Request for Material Safety Data Sheet (OSHA Form 20 or Equivalent) for:

Sulturic Acid 0.250 Normal 8270 Cat. No. **ITEM:**

The Code of Federal Regulations Part 1910.1200, concerning Hazard Communication, explicitly defines the requirements necessitating the development of Material Safety Data Sheets.

According to these definitions the above item either does not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the item does not present any immediate threat to health or safety. Although our experience with this item does not indicate that any specific precautions are necessary to its intended general laboratory use, we recommend that it, as well as all laboratory chemicals and equipment, be subject to careful handling, good technique and proper storage.

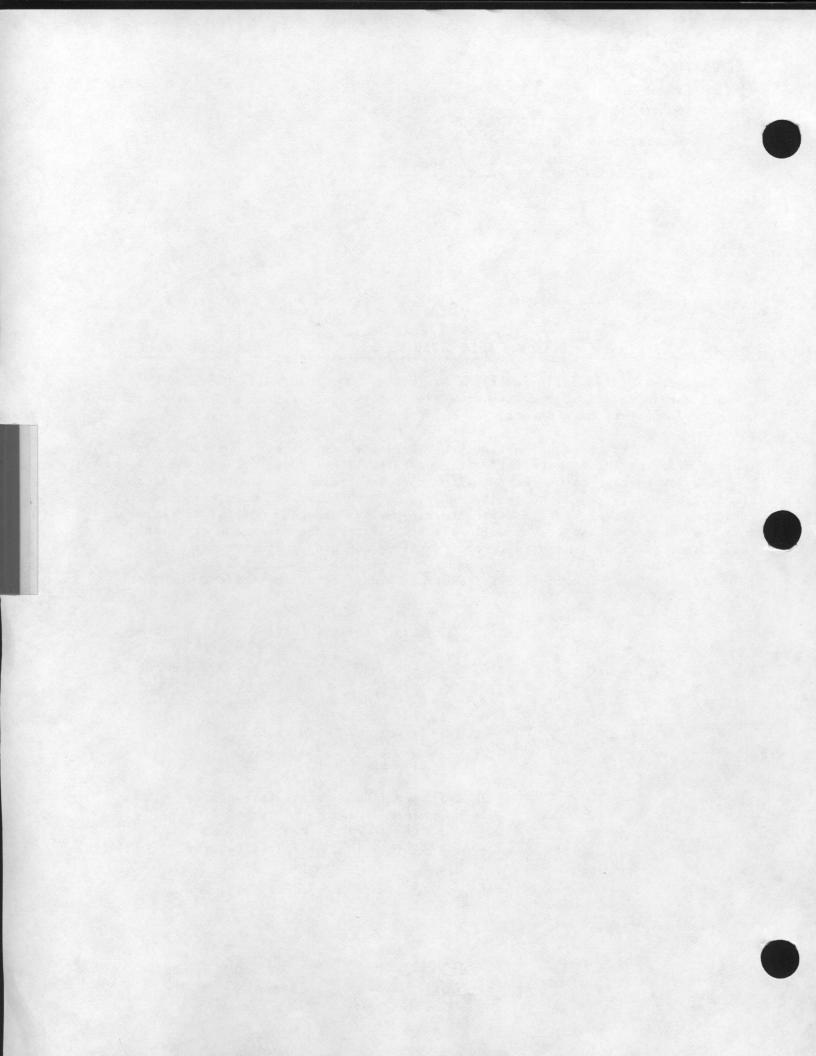
If additional information is required, please do not hesitate to contact us.

Respectfully submitted,

RICCA CHEMICAL COMPANY P.O. Box 13090 Arlington, Texas 76013

817-461-5601

Emergency numbers after hours, weekends and holidays: 817-277-7076 - Paul J. Ricca 817-433-8132 - M. Neil Pugsley



MATERIAL SAFETY DATA SHEET Anderson Laboratories, Inc. 5901 Fitzhugh Avenue Fort Worth, TX 76119

Telephone 817-457-4474 EMERGENCY TEL. 800-424-9300 (CHEMTREC)

DATE: 6/25/85 The materials listed in this Data Sheet are classified in accordance with the definitions set forth in 29CFR Parts 1915, 1916 and 1917.

I. PRODUCT NAMES:

SULFURIC ACID, 0.02 NORMAL, EPA, APHA, ASTM, AOAC, for Alkelinity SULFURIGMACTD, -0.01639 NORMAL, 1 ml = 1 mg, HCO3, USGS, for Alkelinity SULFURIC ACID. 0.023 NORMAL SULFURIC ACID, 0.0357N, 1 ml = 0.5 mg N, USGS, for WH3 SULFURIC ACID, 0.0883N, SULFURIC ACID, 0.12 MOLAR, SULFURIC ACID, 0.04 MOLAR, SULFURIC ACID, 0.10 NORMAL SULFURIC ACID, 0.20 NORMAL SULFURIC ACID, 0.25 NORMAL SULFURIC ACID. 0.50 NORMAL SULFURIC ACID, 0.667 NORMAL SULFURIC ACID, 1 + 19, ASTM D512, for Chloride SULFURIC ACID, 1 . 49, ASTM, for Cyanide, Chromium SULFURIC ACID. 1.00 NORMAL SULFURIC ACID. 7 - 993. ASTM D2330. surfectent SULFURIC ACID, Normality solutions to 1.00N CHEMICAL FAHILY: Inorganic Acid TRADE NAME: N/A DOT SHIPPING NAME: SULFURIC ACID SOLUTION

- DOT HAZARD CLASS: CORROSIVE MATERIAL DOT. I.D. NO .: UN1830 II. HAZARDOUS COMPONENTS >1x: Sulfuric Acid (CAS NO 7664-93-9) to 4.9% w/w Aqueous
- III. PERTINENT PHYSICAL DATA: Boiling pt.: 100 C(Min) Flesh pt.: N/A Vapor pressure: 20mm (Max)Hg at 20 C
- APPEARANCE AND ODOR: Colorless and odorless liquid. IV. FIRE AND EXPLOSION DATA: Keep away from strong reducing agents; such
- as powdered zinc.
- V. HEALTH HAZARD DATA: TOXIC DOSE: Oral-rat; LD50, 2140mg/Kg. Ten ml of these solutions contain not more than 490mg of sulfuric acid.
- VI. REACTIVITY DATA: Does not form hazardous decomposition products. Avoid contact with strong alkalies and combustible liquids.
- VII. SPILL AND LEAK PROCEDURES: Neutralize with sode ash. Wash with a copious supply of water.
- VIII. SPECIAL PROTECTION INFORMATION: Use safety glasses and rubber laboratory protection.
 - IX. SPECIAL PRECAUTIONARY INFORMATION: Use prudent laboratory procedures. X. FIRST AID AND OTHER PROCEDURES: CALL A PHYSICIAN.
 - EXTERNAL: Immediately flush skin or eyes with plenty of water for at least 15 minutes. FOR EYES: Get medical attention. INTERNAL: Do not give emetics or baking soda. Give tap water, milk

or Milk of Magnesia. Give whites of eggs beaten with water. DISCLAIMER OF LIABILITY

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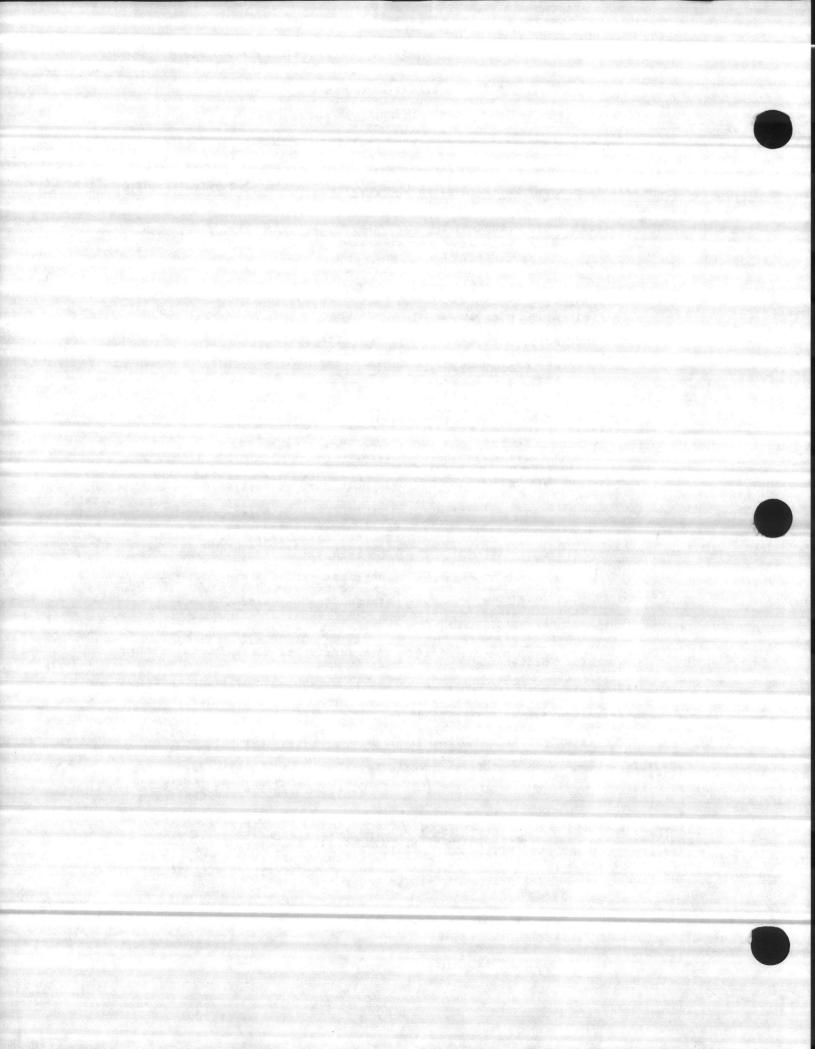
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The information in this MSDS was obtained from sources which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS ACCURACY OR CORRECTNESS.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY DIRECTLY OR INDIRECTLY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT OR THE INFORMATION FURNISHED THEREWITH



DESCRIPTION:

Acid Sulfuric 1.00

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U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration Form Approved OMB No. 44-R1367

MATERIAL SAFETY DATA SHEET JUN 1985

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

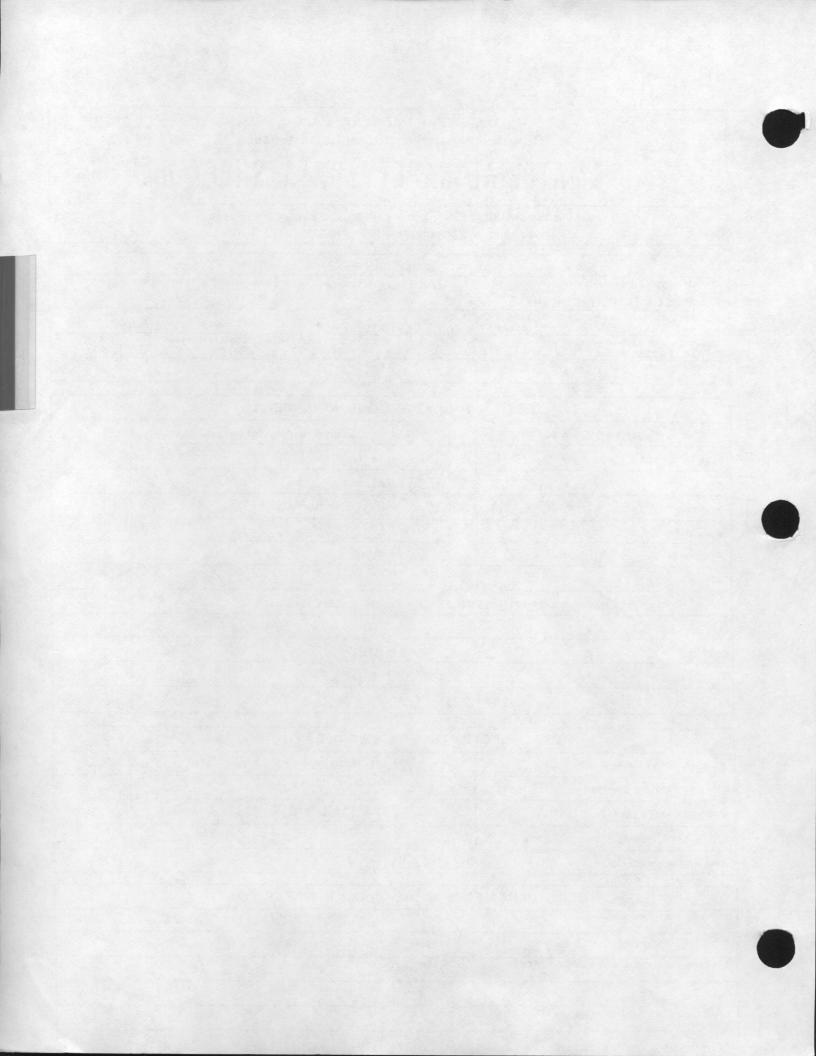
SE	C	ГІ	0	N	1

MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	•
RICCA CHEMICAL COMPANY ,		817 461-5601	
ADDRESS (Number, Street, City, State, and ZIP Code) 448 West Fork Dr. Arlington, TX	76012		1
Sulfuric Acid	RCC	Cat No 0300 (1.00 N)	
CHEMICAL FAMILY Inorganic Acid	H SO,		1

SECTION	- 11 -	HAZAR	RDOUS INGREDIENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	×	TLV (Units)	ALLOYS AND METALLIC COATINGS	×	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURE	SOF	OTHER LI	QUIDS, SOLIDS, OR GASES	*	TLV (Units)
Sulfuric Acid (v/v)				2.8	1ppm
			·		

	SECT	TION III -	PHYSICAL DATA	
BOILING POINT ("F.)	Approx	212	SPECIFIC GRAVITY (H20+1) Approx	1.03
VAPOR PRESSUILE (mm Hg.)		-	PERCENT, VOLATILE - BY VOLUME (%)	100
VAPOR DENSITY (AIR+1)		-	EVAPORATION RATE (<1
SOLUBILITY IN WATER		Inf		
APPEARANCE AND ODOR	Colorless,	Odorless	liquid	

FLASH POINT (Meined used) None	FLAMMABLE LIMITS None	Lei	Uei
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			



DESCRIPTION:

Bromeresol Green 145-S

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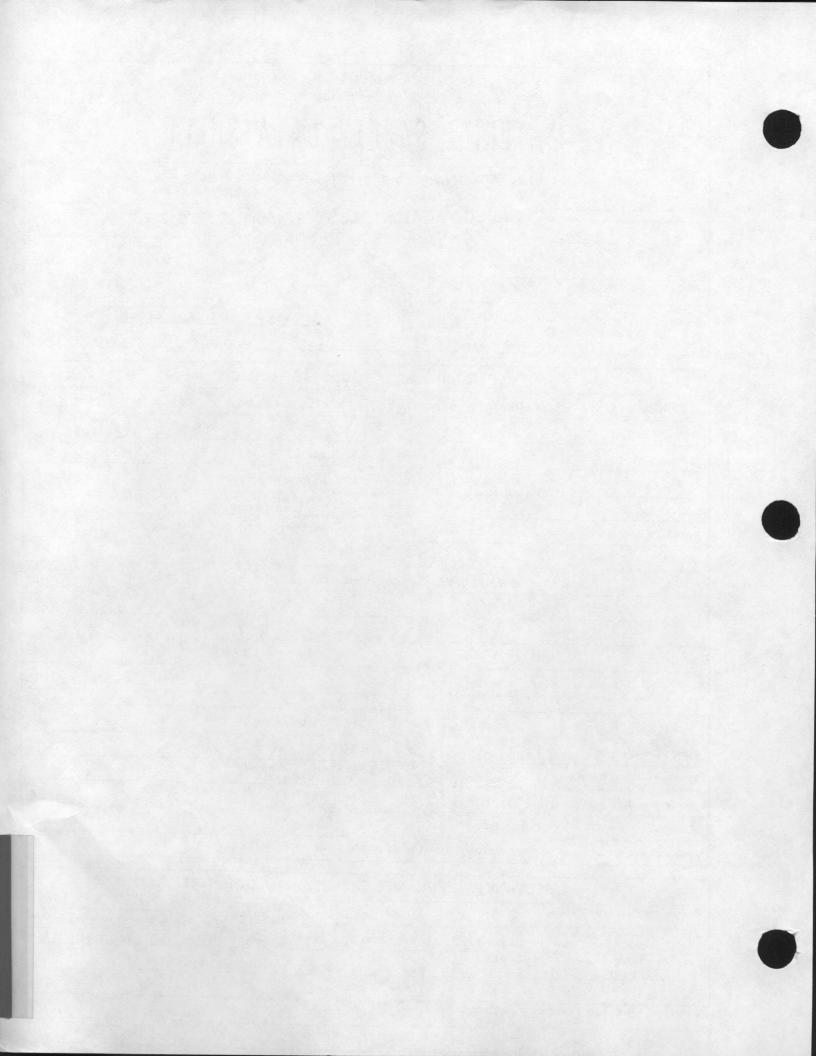
· · · · · · · · · · · · · · · · · · ·			T DF LABOR Health Adminis		Form Actio DME No. 44	
MATERIA	LS	AFET	Y DATA	SKEET		
Required under USD	L Safety	and Hea!	th Regulations fo	r Ship Repairing,		
18	A.K.A. 5 Marine 1	Street, Farmi	L SYSTEMS	j		
HELLIGE, INC.		(516) 293-		222-0300	HUNE NO.	
ADDRESS (Number, Street, City, Sicie, and ZIP Co	ode) E	77 Stev	art Ave., G	arden City, N.Y.	11530	
Tetrabromo-m-cresolutonphthale	in		145-S		n	
CHEMICAL FAMILY Organic Indicator		. F	ORMILA	405+CH3+H20		
SECTION	III • F	AZARD	OUSINGRED	ENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	*	TLV (Units)	ALLOYS AND	METALLIC COATINGS	x	TLV (Unit
PIGMENTS (e	ASE METAL			
CATALYST		4	LLOYS			
VEHICLE		1 1	ETALLIC COATIN	IGS	; ;	
SOLVENTS			ILLER METAL	CORE FLUX		
ADDITIVES		c	THERS			
OTHERS						
HAZARDOUS MIXTURE	S OF OT	HER LIQU	DS, SOLIDS, OR C	ASES	*	(Unit
			No	thanol	1 23	
				omcresol Green	0.1	

SEC.	TION III -	PHYSICAL DATA	
BOILING POINT ("F.) 100% Methanol	148.1	SPECIFIC GRAVITY (H20=1)	0.9621
	97	PERCENT, VOLATILE BY VOLUME (%)	998
VAPOR PRESSURE (MM H9.) 100% Methanol -t 20°C VAPOR DENSITY (AIR+1) 100% Methanol	1	EVAPORATION RATE	5.91
SOLUBILITY IN WATER COmplete	1		
APPEARANCE AND ODOR Green-blue co	olor, sli	ght methanol odor	

		D EXPLOSION HAZARD DAT		Uei
FLASH POINT (Meihod und) 93	°F. C.C.	Methanol by volume	53	36
Carbon dioxide or dry	chemical for :	small fires. Alcohol or p	olymer foa:	
Addition of water to	ε s burning fuel πa	ay reduce the intensity	of the flar	ne.

UNUSUAL FIRE AND EXPLOSION HAZARDS

- .



SECTION V . HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 200 ppm of 100% Methanol

Effects of OVEREXPOSURE Swallowing the liquid causes inebriation, headache, nausea, and vomiting leading to severe illness, blindness and perhaps death. Liquid causes eye irritation.

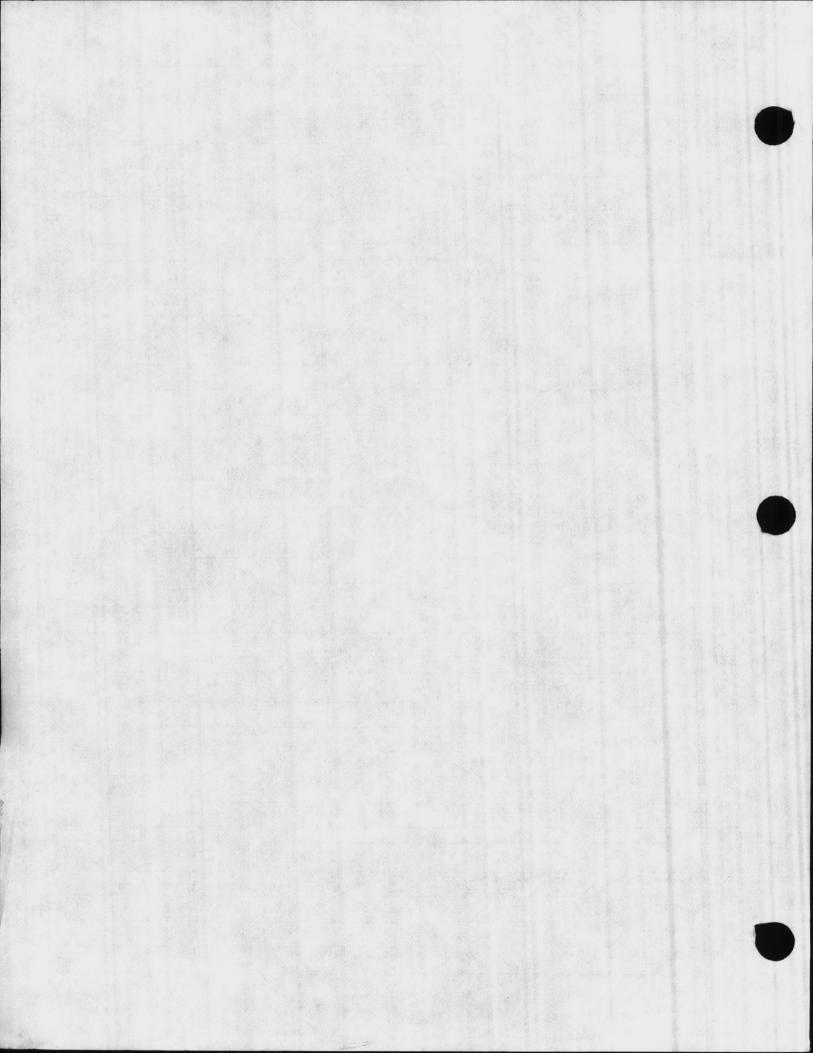
EMERGENCY AND FIRST AID PROCEDURES Flush skin & eye contact with plenty of water, GEt medical care for eyes. If swallowed, induce vomiting at once by tickling back of throat (repeat until fomit is clear). Then give 2 tablespoons of baking soda in a glass of water. Call physician at once.

E . I To see the			ocom		EACTI ITY DATA		
STABILITY	0	NSTABLE	TABLE		CONDITIONS TO ALOID		
	ST	ABLE	x	Heat,	sparks, fire		
HAZARDOUS D	ECOMPC	SITION PROD	UCTS				
HAZARDOUS (MAY OCCU	JR		CONDITIONS TO AVOID		
	POLYMERIZATION		WILL NOT OCCUR				

EPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR S Eliminate all sources of ignition. F	PILLED lush spilled material with large
volume of water.	
ASTE DISPOSAL METHED Small quantities may be diluted with	water and washed down a drain or sewer.

	SECTIC	ON VIII - SPECIAL	PROTECTION I	NFORMATION
RESPIRATORY P	ROTECTION (Speci)	y type)		
VENTILATION	LOCAL EXHAL	preferable	9	SPECIAL
	MECHANICAL	(General) acceptable	•	OTHER
PROTECTIVE GL	oves plast	ic gloves.	EYE PROTECTIO	overall goggles
OTHER PROTECT	IVE EQUIPMENT	Impervious ap	on and boots,	safety shower, eye bath

Avoid high	TAKEN IN HANDLING AND STORING temperatures, keep out of direct sunlight. Do not leave container
open.	
CTHE PRECAUTIONS	May be fatal or cause blindness if swallowed: Keep from heat,



TAB PLACEMENT HERE

DESCRIPTION:

Caustic Potash-

potassium hydroxide

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Confidential Records Management, Inc. New Bern, NC 1-888-622-4425 9/08



J. T. Baker Chemical Co.

222 Red School Lane Phillipsburg, N.J. 08865 24-Hour Emergency Telephone -- (201) 859-2151

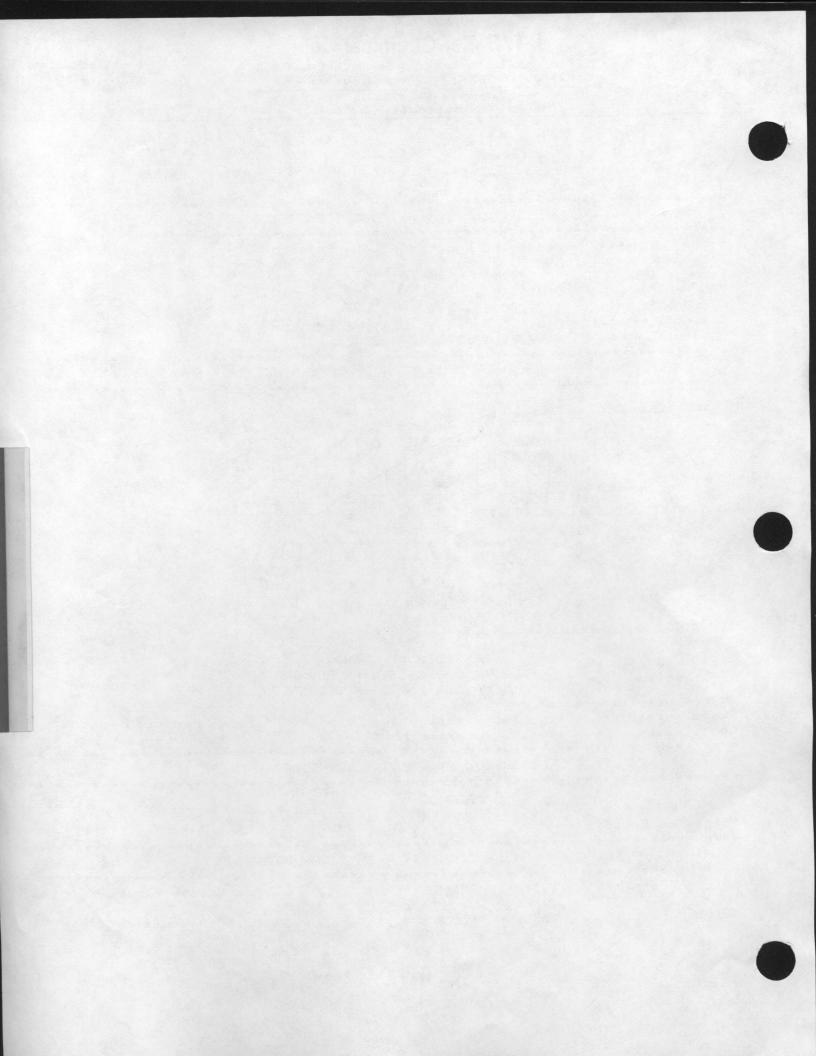
Chemtrec # (800) 424-9300 National Response Center # (800) 424-8802



P5887 -01 Effective: 10/08/8	Potassium Hydrox 85	ide, 45% Solutio		Page: 1 d: 10/09/85
	SECTION I - PRODUC	T IDENTIFICATION	************	
Product Name: Formula: Formula Wt: CAS No.: NIOSH/RTECS No.: Common Synonyms: Product Codes:	Potassium Hydroxide, 4 KOH 56.11 01310-58-3 TT2100000 ; Caustic Potash; Lye; 5042,3144,5379,3143,53	Potassium Hydra 41	te	
	PRECAUTIONAR	Y LABELLING		
BAKER SAF-T-DATA	¹ Sustem			
Laboratory Protect	SEVERE NOINE	CONTACT CONTACT CONTACT SLIGHT SEVERE		
Presentingen tob	COGGLESS LAD COAT	HOOD EFCOPER CLOVES		
Precautionary Labe	el Statements			10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Avoid breathing va	POISON! CAUSES SEU MAY BE FATAL , on skin, on clothing apor. Keep in tightly o thoroughly after hand	IF SWALLOWED closed container	. Use with a	dequate

***************	SECTION II - HAZA			
	Component		<u>%</u>	CAS No.
Potassium Hydroxid	le		45	1310-58-3
	SECTION III -	PHYSICAL DATA		
Boiling Point:	133°C (271°F)	Vapor	Pressure(mmHg	g): 39
Melting Point:	-29°C (-20°F)	Vapor	Density(air=)	D: N/A

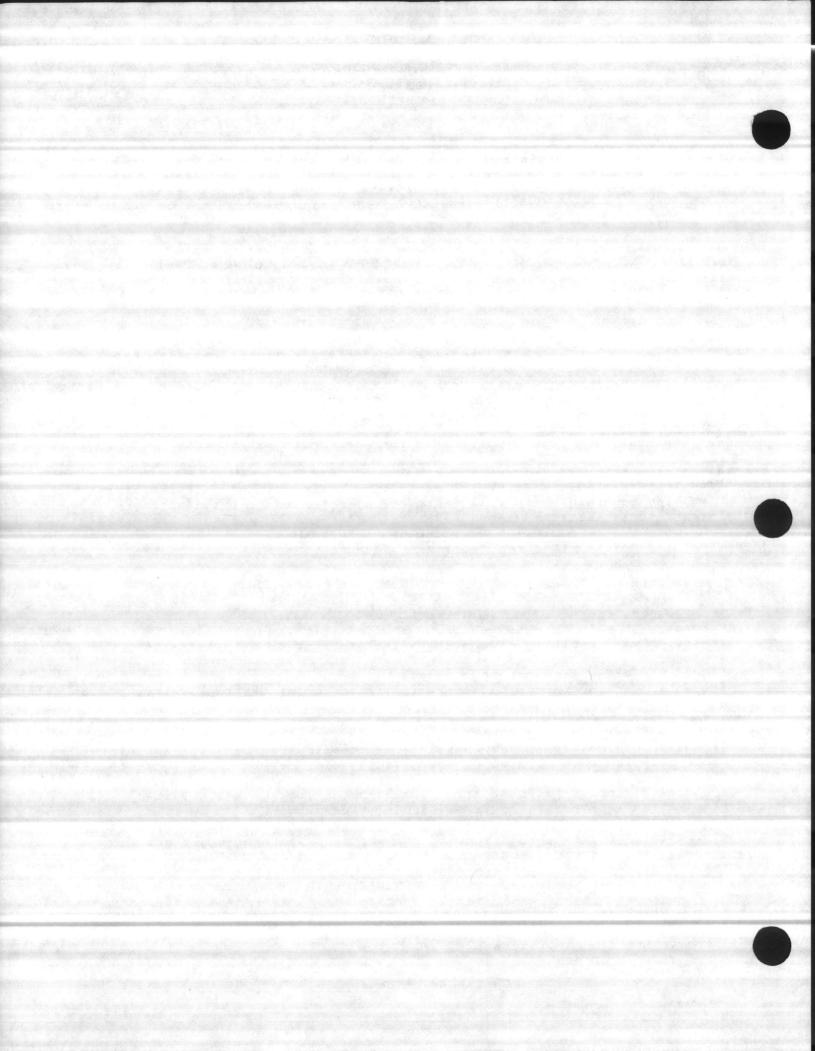
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JILBaker	24-Hour Emergency Telephone - (201) 8		SAFETY
•	Chemtrec # (800) 424-9300 National Response Center # (800) 424-	8802	SHEEL
P5887 -01 Effective: 10/08/85		Issued:	Page: 2 10/09/85
******	SECTION III - PHYSICAL DATA ((Continued)	
Specific Gravity: (H ₂ O=1)	1.44	Evaporation Rate: (Butyl Acetate=1)	N/A
Solubility(H ₂ 0):	Complete (in all proportions)	% Volatiles by Volume	: 55
Appearance & Odor:	Clear solution, no odor.		
S!	ECTION IU - FIRE AND EXPLOSION	HAZARD DATA	;
Flash Point: N/6	NFPA 70	04M Rating: 3-0-1	
Fire Extinguishing M Use extinguishi	<u>1edia</u> Ing media appropriate for surro	unding fire.	
<u>Special Fire-Fightin</u> Firefighters St	hould wear proper protective eq	uipment and self-conta	ined
Firefighters sh	ng Procedures hould wear proper protective equatus with full facepiece opera SECTION U - HEALTH HAZARD	ted in positive pressur	ined re mode.
Firefighters sh breathing appar	hould wear proper protective equatus with full facepiece operations	ted in positive pressur	ined re mode.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpose	SECTION U - HEALTH HAZARD al-rat)(mg/kg) -	DATA 365	ined re mode.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpos Contact with sk Ingestion may r mouth.	SECTION U - HEALTH HAZARD al-rat)(mg/kg) - ure in or eyes may cause severe ir esult in severe intestinal irr	DATA 365 ritation or burns.	ined re mode.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpose Contact with sk Ingestion may r mouth. Liquid may caus Inhalation of v	SECTION U - HEALTH HAZARD al-rat)(mg/kg) -	DATA 365 ritation or burns. itation with burns to	re mode.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpose Contact with sk Ingestion may r mouth. Liquid may caus Inhalation of o Inhalation may Emergency and First If swallowed, d	<pre>second wear proper protective equatus with full facepiece opera SECTION U - HEALTH HAZARD al-rat)(mg/kg) ure in or eyes may cause severe ir esult in severe intestinal irr e permanent eye damage. apors may cause severe irritat be harmful or fatal.</pre>	DATA 365 ritation or burns. itation with burns to ion of the respiratory cious, give large amour	system.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpose Contact with sk Ingestion may r mouth. Liquid may caus Inhalation of o Inhalation may Emergency and First If swallowed, d water. Follow with water. If inhaled, rem respiration. I In case of conta at least 15 min	<pre>section of the section of the s</pre>	DATA 365 ritation or burns. itation with burns to ion of the respiratory cious, give large amour ice or whites of eggs, thing, give artificial oxygen. skin with plenty of wa	system.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpose Contact with sk Ingestion may r mouth. Liquid may caus Inhalation of o Inhalation of o Inhalation may Emergency and First If swallowed, d water. Follow with water. If inhaled, rem respiration. I In case of cont.	<pre>nould wear proper protective eq atus with full facepiece opera SECTION U - HEALTH HAZARD al-rat)(mg/kg) ure in or eyes may cause severe ir esult in severe intestinal irr e permanent eye damage. apors may cause severe irritat be harmful or fatal. Aid Procedures o NOT induce vomiting; if cons with diluted vinegar, fruit ju ove to fresh air. If not brea f breathing is difficult, give act, immediately flush eyes or utes while removing contaminate efore re-use.</pre>	DATA 365 ritation or burns. itation with burns to ion of the respiratory cious, give large amour ice or whites of eggs, thing, give artificial oxygen. skin with plenty of wa ed clothing and shoes.	system.
Firefighters sh breathing appar Toxicity: LD ₅₀ (or Effects of Overexpose Contact with sk Ingestion may r mouth. Liquid may caus Inhalation of o Inhalation may Emergency and First If swallowed, d water. Follow with water. If inhaled, rem respiration. I In case of conta at least 15 min	<pre>section of the section of the s</pre>	DATA 365 ritation or burns. itation with burns to ion of the respiratory cious, give large amour ice or whites of eggs, thing, give artificial oxygen. skin with plenty of wa ed clothing and shoes.	system. ts of beaten ter for

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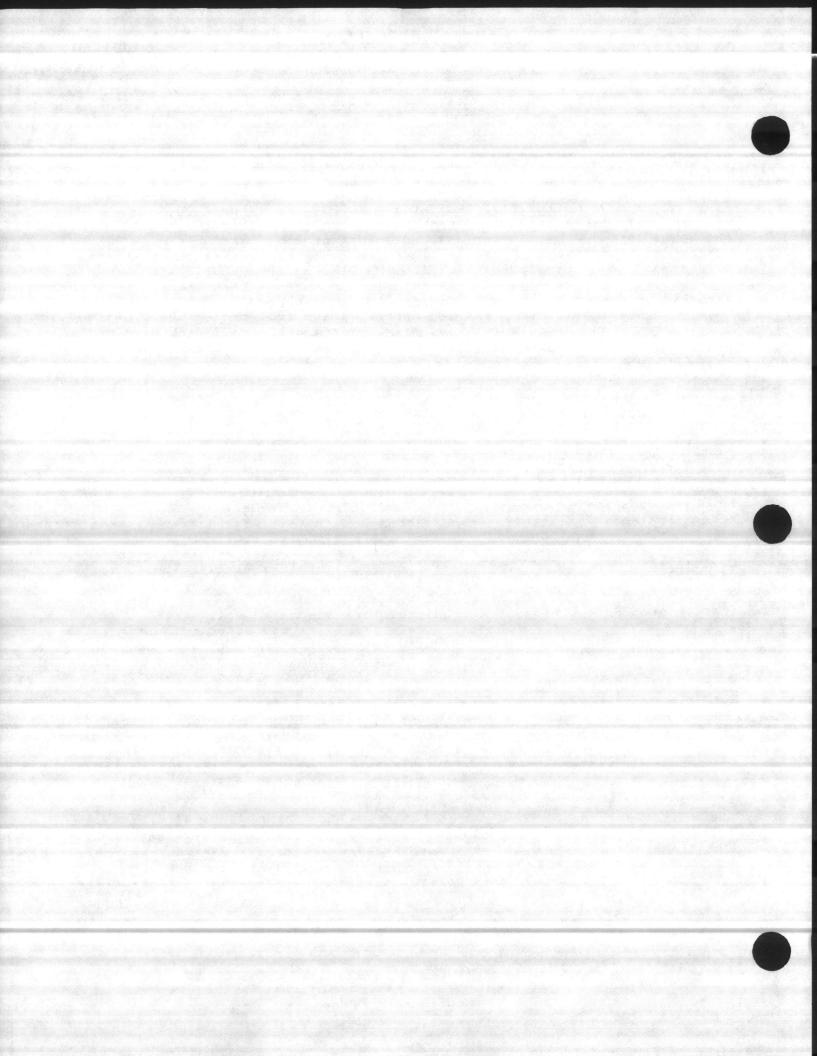
J. T. Baker Chemical Co.

222 Red School Lane Phillipsburg, N.J. 08865 24-Hour Emergency Telephone -- (201) 859-2151

Chemtrec # (800) 424-9300 National Response Center # (800) 424-8802

MATERIAL SAFETY DATA SHEET

Effective: 10/08/85 SECTION VI Incompatibles: water SECTION VII Steps to be taken in the even Wear self-contained brea leak if you can do so wi spill with dilute HC1. caution.) J. T. Baker Neutracit-2 ^R for spills of this produ Disposal Procedure Dispose in accordance wi environmental regulations EPA Hazardous Waste Number: SECTION VIII Ventilation: Use of TLV i Respiratory Protection: None condi- high If co a sel Eye/Skin Protection: Safet prote	thing apparatus and full protective clothing. Stop thout risk. Ventilate area. Carefully neutralize Flush area with flooding amounts of water. (Use caustic neutralizer is recommended ct. th all applicable federal, state, and local s.
Incompatibles: water SECTION VII Steps to be taken in the even Wear self-contained brea leak if you can do so wi spill with dilute HCL. caution.) J. T. Baker Neutracit-2 ^R for spills of this produ Disposal Procedure Dispose in accordance wi environmental regulations EPA Hazardous Waste Number: SECTION VIII Ventilation: Use of TLV i Respiratory Protection: None conda high, If co a sel Eye/Skin Protection: Safet prote	<pre>, strong acids, organic materials - SPILL AND DISPOSAL PROCEDURES t of a spill or discharge thing apparatus and full protective clothing. Stop thout risk. Ventilate area. Carefully neutralize Flush area with flooding amounts of water. (Use caustic neutralizer is recommended ct. th all applicable federal, state, and local s. D002 (Corrosive Waste) - INDUSTRIAL PROTECTIVE EQUIPMENT general or local exhaust ventilation to meet</pre>
Incompatibles: water SECTION VII Steps to be taken in the even Wear self-contained brea leak if you can do so wi spill with dilute HCL. caution.) J. T. Baker Neutracit-2 ^R for spills of this produ Disposal Procedure Dispose in accordance wi environmental regulations EPA Hazardous Waste Number: SECTION VIII Ventilation: Use of TLV in Respiratory Protection: None conda high, If con a sel Eye/Skin Protection: Safet protection IX -	<pre>, strong acids, organic materials - SPILL AND DISPOSAL PROCEDURES t of a spill or discharge thing apparatus and full protective clothing. Stop thout risk. Ventilate area. Carefully neutralize Flush area with flooding amounts of water. (Use caustic neutralizer is recommended ct. th all applicable federal, state, and local s. D002 (Corrosive Waste) - INDUSTRIAL PROTECTIVE EQUIPMENT general or local exhaust ventilation to meet</pre>
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EPA Hazardous Waste Number: SECTION VIII Ventilation: Use (TLV) Respiratory Protection: None conds high, If co a sel Eye/Skin Protection: Safet prote	s. D002 (Corrosive Waste) - INDUSTRIAL PROTECTIVE EQUIPMENT general or local exhaust ventilation to meet
SECTION UIII Ventilation: Use (TLU) Respiratory Protection: None conds high, If co a sel Eye/Skin Protection: SECTION IX -	- INDUSTRIAL PROTECTIVE EQUIPMENT general or local exhaust ventilation to meet
SECTION UIII Ventilation: Use (TLU) Respiratory Protection: None conds high, If co a sel Eye/Skin Protection: Section IX -	- INDUSTRIAL PROTECTIVE EQUIPMENT general or local exhaust ventilation to meet
TLV i Respiratory Protection: None condi- high If co a sel Eye/Skin Protection: Safet prote SECTION IX -	general or local exhaust ventilation to meet requirements.
TLV i Respiratory Protection: None condi- high If co a sel Eye/Skin Protection: Safet prote SECTION IX -	general or local exhaust ventilation to meet requirements.
conds high If co a sel Eye/Skin Protection: Safet prote SECTION IX -	KR 성영 수영법 영상방법은 이 것이 걸 때 그 것 같은 것같은 것 같은 것 같은 것 같은 것 같은 것 같은 것이다. 그 그 모두 것 이 가 걸 있 것 이 것 것 같은 것 같은 것 같은 것 같은 것
cond: high, If co a sel Eye/Skin Protection: Safet prote SECTION IX -	required where adequate ventilation
If co a sel Eye/Skin Protection: Safet prote SECTION IX -	itions exist. If airborne concentration is
a sel Eye/Skin Protection: Safet prote SECTION IX -	, a dust/mist respirator is recommended.
prote SECTION IX -	oncentration exceeds capacity of respirator, lf-contained breathing apparatus is advised.
prote SECTION IX -	ty goggles and face shield, uniform,
******************************	ective suit, neoprene gloves are recommended.
TM	STORAGE AND HANDLING PRECAUTIONS
SAF-T-DATA TM Storage Color Cod	le: White Stripe
<u>Special Precautions</u> Keep container tightly cl	losed. Store in corrosion-proof area.
SECTION X - TRANSPOR	TATION DATA AND ADDITIONAL INFORMATION
DOMESTIC (D.O.T.)	
	sium hydroxide, solution
UN/NA UN181	sive material (liquid) 4
Labels CORRO	
	- 그 도 Y 다 방법에는 했는 것 이야한 방법이었다. 또 한 것 같은 것으로 했는 것 이야가 한 것 같이 가지 않는 것 같이 하는 것이다. 한 것은 사람은 사람을 가야 한 것을 하는 것을 가지 않는





J. T. Baker Chemical Co.

222 Red School Lane Phillipsburg, N.J. 08865 24-Hour Emergency Telephone - (201) 859-2151

Chemtrec # (800) 424-9300 National Response Center # (800) 424-8802



*

 P5887 -01
 Potassium Hydroxide, 45% Solution
 Page: 4

 Effective: 10/08/85
 Issued: 10/09/85

 SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (Continued)

Reportable Quantity 1000 LBS.

INTERNATIONAL (I.M.O.)

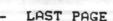
Proper Shipping Name	Potassium hydroxide, solution
Hazard Class	8
UN/NA	UN1814
Labels	CORROSIUE

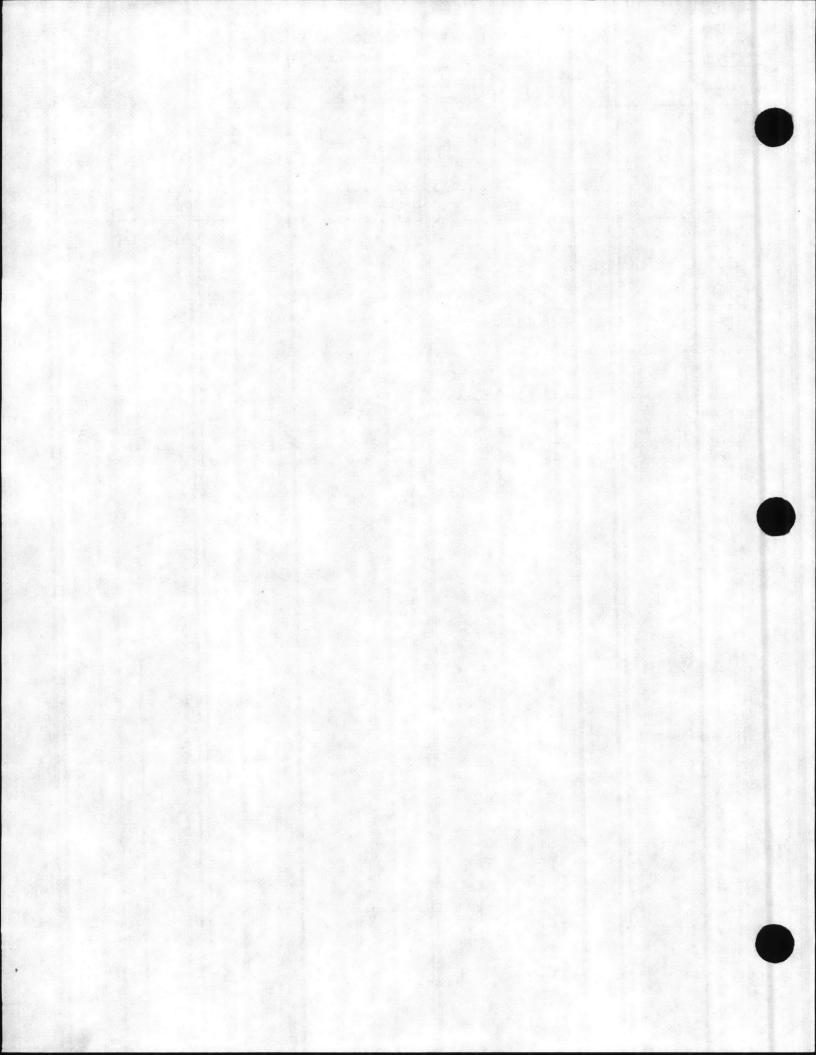
N/A = Not Applicable -	

N/H = Not Applicable or Not Available

The information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.







TAB PLACEMENT HERE

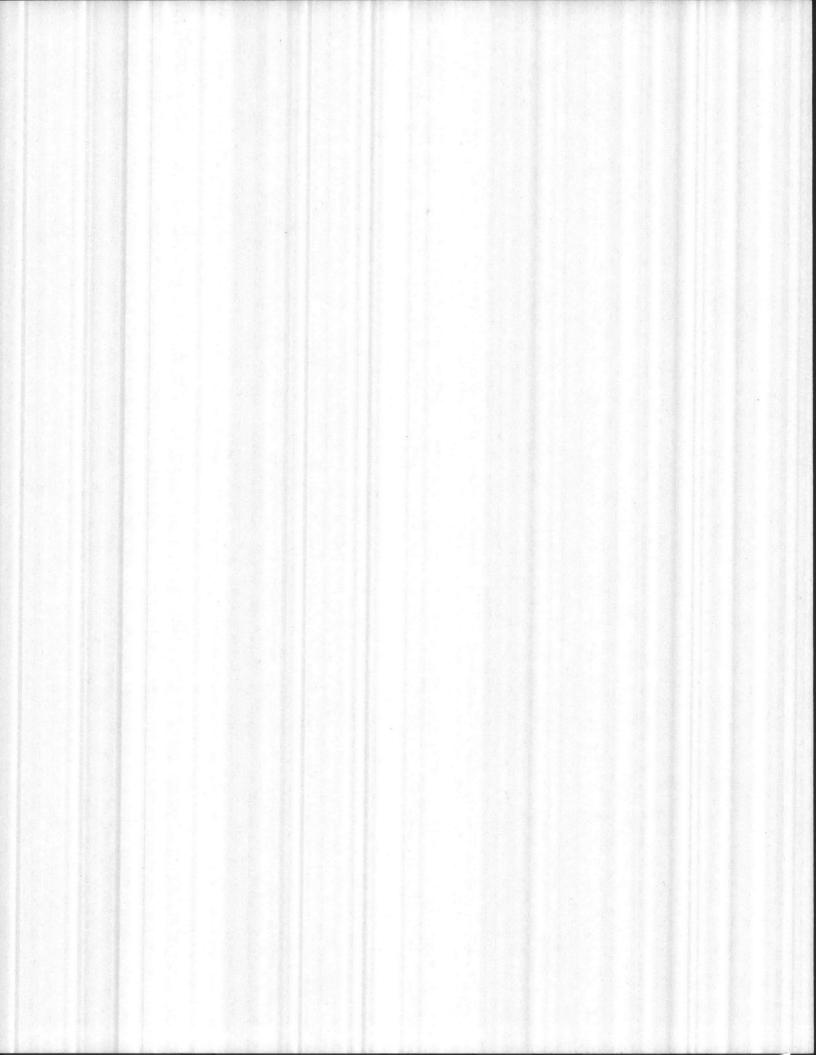
DESCRIPTION:

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Confidential Records Management, Inc. New Bern, NC 1-888-622-4425 9/08



	Capat.	Eyse	· ··	······································	
	RIKLE	EN®			FSC Class: 6850 GS-OOF-87463 No: NIS-G-0190
FED	ERAL			HEDU	LE
	FED	ERAL SUPPL	TORY SCHED		
	CONTRACT 74 Hudson Avenue	ber 25, 1985 t	07670 - (201	oer 24, 1987 ATION	
oints of Product	Maximur	n Order Limita num Order: 1 8 Contiguous S	BER: NIS-G-01 ation: \$20,000 x 6 Gallon Pail states and Wash J and Los Ange	.00 ington, DC	les County, CA
	NET PRIC	E: FOB 11.5. S	TOCKING POI	NTS	
FOB Eastern S Tenafly, NJ	•	List P 55 gal. drum	rice	G.S.A. Disco 55 gal. drum	
Akron, OH	tew Serina, tri	\$13.40/gal.	\$14.85/gal.	\$10.70/gal.	\$11.85/gal.
		FF and down	C dal pall	EE col dava	6 gal. pail
Los Angeles, CA	Stocking Points: Onem, UT	55 gal. drum	6 gal. pail	55 gal. drum	
	Seattle, WA	\$14.00/gal.		\$11.30/gal.	\$13.50/gal.
An additional dis	count for single volu 2%	- \$2,500.00 - \$			
	3%	- \$5,001.00 - \$ - \$15,001.00 - \$	15,000.00		1

P

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7516 -7152

PROMPT PAYMENT TERMS: 1% - 30 DAYS Delivery Within 30 Days After Receipt of Order ORDERS MAY BE PLACED BY CONTACTING PENETONE CORPORATION

CHRISHENSLEY

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YES

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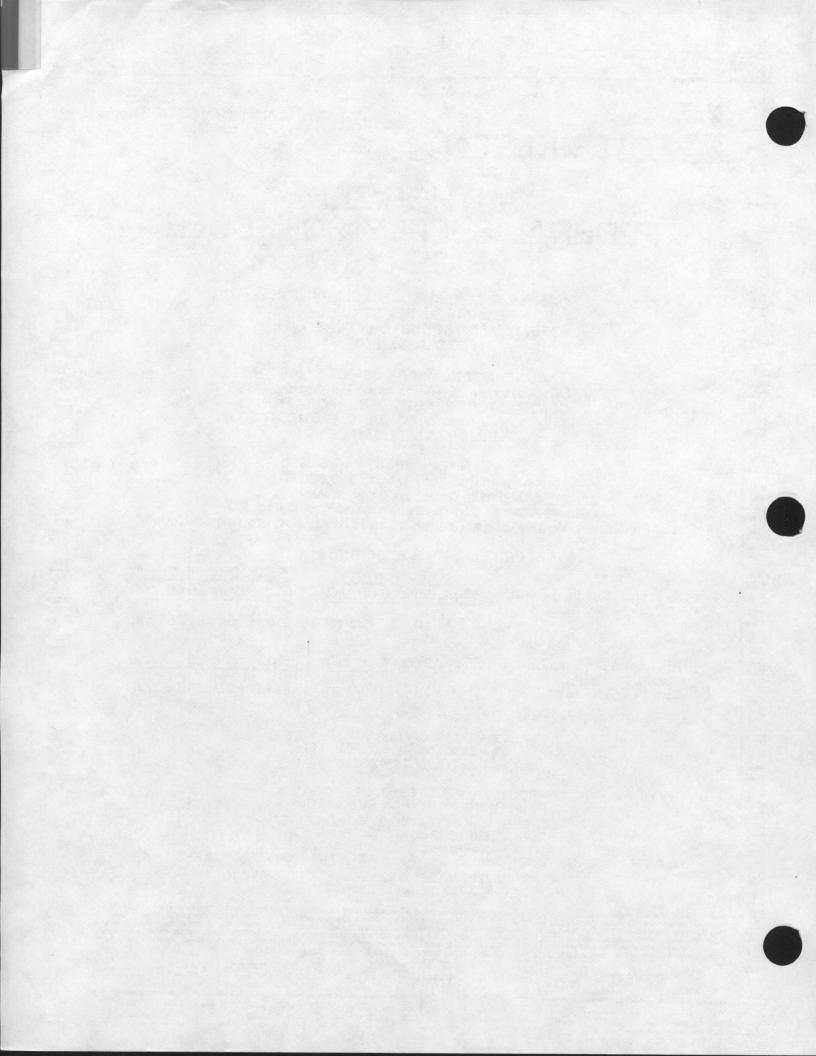
TENAFLY, NJ 07670, 74 Hudson Avenue, TEL. (201) 567-3000 TWX: 710-991-9700 LOS ANGELES, CA 90040, 6014 South Eastern Avenue, TEL. (213) 726-1579 TWX: 810-621-0574

PAYMENTS SHOULD BE MADE TO PENETONE CORPORATION, P.O. BOX 783, TENAFLY, NJ 07670

WARRANTY: All necessary adjustments of equipment procured hereunder not occasioned by accident or misuse through fault or negligence by the Government shall be made by the Contractor at his own expense, including transportation costs, if any, during the 90-day period after acceptance by the Government. All equipment procured hereunder is guaranteed for a period of one (1) year from date of acceptance. During the guarantee period all broken or defective parts not caused by accident or misuse through fault or negligence by the Government must be replaced, and all necessary equipment adjustments occasioned by such defective parts must be made, at the Contractor's expense, including labor, parts and transportation cost, if any.

PENETONE CORPORATION, 74 HUDSON AVENUE, TENAFLY, NJ 07670

-



CITRIKLEEN[®] US PATENT 4,511,488 A BIODEGRADABLE, WATER SOLUBLE SOLVENT CLEANER





An Environmentally Safe Solution For Today's Problems. . Tomorrow's Ecology

TYPICAL USES:

DESCRIPTION:

Citrikleen, nonpetroleum, nonchlorinated, solvent cleaning agent, provides environmental safety plus superior solvent degreasing efficiency.

Outperforms most solvent, solvent emulsion and alkaline cleaners for removal of heavy greases, carbonized oils, gear lubes, grease buildups, oily deposits, tar, even bituminous deposits . . . while providing a safer, more pleasant environment.

Equally effective in immersion, (coarse) pressure spray, foam on and manual, cleaning methods, or (outdoors) in steam cleaning applications.

Citrikleen has an application profile to suit almost any industrial, transportation or general plant maintenance operation. Used at varying concentrations with water, Citrikleen is most effective

• For removal of heavy grease and oils on shovel sticks, (cranes and diggers), trucks, mill stands, floots, oil cellars, tar pumps, valves.

 Carbonized oils and greases are easily removed from engines, transmissions, motors, housings and metal parts with Citrikleen in spray, foam, brush or dip applications. Water rinsed surfaces are clean.

• In waste treatment plants, Citrikleen is used for cleaning, degreasing and deodorizing lift stations, wet wells and walls, catwalks, bar screens, sump pumps, scum pits and troughs, transfer pipes and equipment.

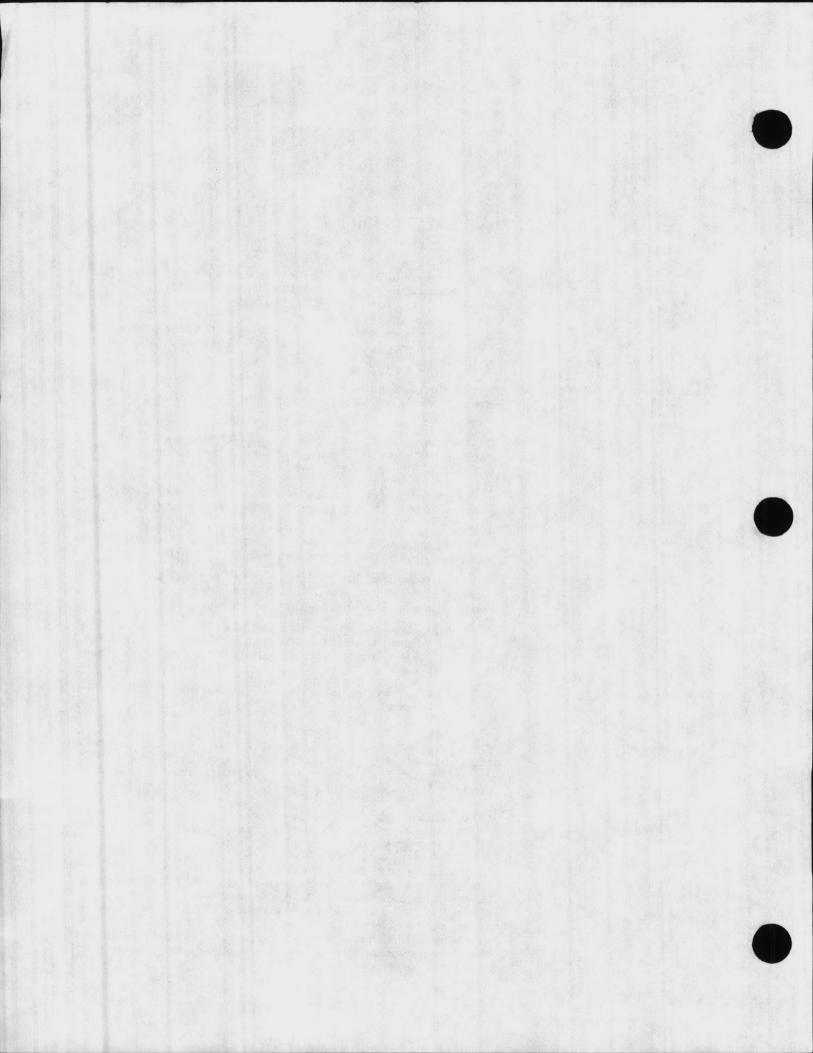
• For heavy duty cleaning and degreasing of all plant areas – from floors and walls, machinery and metal parts to production equipment, transport and mobile equipment, forklift trucks and associated materials handling equipment, metal areas.

• To replace vapor degreasing. Contact Penetone or the local Sales Engineer for further information.

Citrikleen is a biodegradable, water-soluble, heavy duty cleaner-degreaser formulated with an organic nonpetroleum hydrocarbon solvent and a multicomponent surfactant-emulsifier system to achieve superior cleaning and degreasing capabilities.

It has a natural, pleasant odor. The absence of any petroleum hydrocarbons in Citrikleen allows disposal after soil release into satisfactorily operating effluent treatment plants.

Used in concentrated form or at various water dilution rates, Citrikleen will rapidly penetrate and lift the widest range of petroleum, animal and vegetable based oils, fats and greases, which are then easily removed by water rinsing. The oily contaminants in used Citrikleen solutions, left in a still tank or holding pond after cleaning, will rise to the surface and separate. This oil may be removed by top skimming. The remaining bottom layer is clean, biodegradable, reusable liquid cleaning solution which can be flushed to the sewer if no longer needed.



DENCLUNE" CORPORATION

MATERIAL SAFETY DATA SHEE

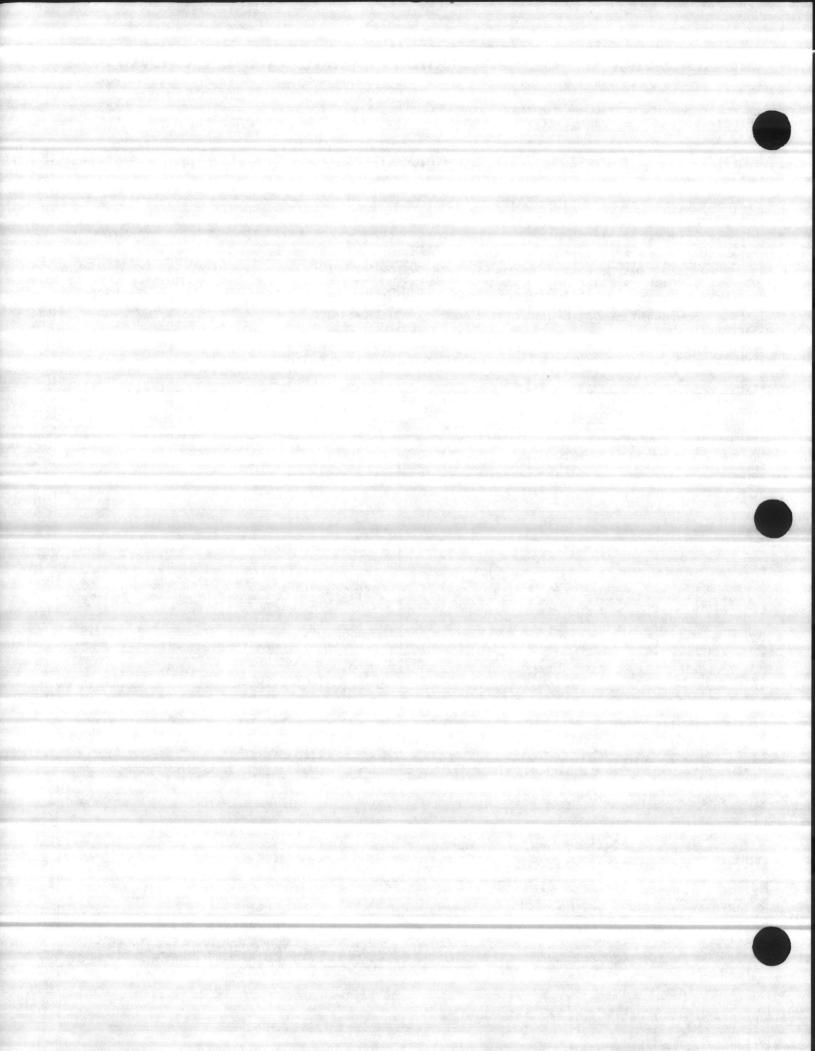
A Subsidiary of West Chemical Products, Inc.

74 HUDSON AVENUE, TENAFLY, NJ 07670 EMERGENCY TEL. NO. (201) 567-3000

(Confidential Formula – Information not to be disclosed to other than recipient and other regulatory agencies.)

DATE _____ April 11, 1986

TRADE NAME Citrikleen	and March and States and States	alay in the second s Second second	ingen von der Angele Stadelie Angele Stadelie
	· · · · · · · · · · · · · · · · · · ·		
CHEMICAL FAMILY Liquid Cleaner	the second		
A SERVICE NUMBER OF STREET			
COMPONENT OR MATERIAL CHEMICAL NAMES	CAS NO.	% by	TLV (Units)
Ethanolamine	141 - 43-5	5.0	3 ppm
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	£.,		
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BOILING POINT (PF)	DATA		
Approximately 212	VAPOR PRESSURE, P Not de		°F)
EVAPORATION RATE (ETHER =1) Not determined	VAPOR DENSITY (AI		anne Alexan
SOLUBILITY IN H2O, % by wt @ 20°C (68°F)	VOLATILES by VO	L.@ 70°F	
Forms stable emulsion SPECIFIC GRAVITY H2O = 1 @ 75°F	PH Negli		·
0.955	(10% solut	ion): 10.0	neros aportados en el provinción en el provinción de la provinción de la provinción de la provinción de la prov Para el provinción de la pr Para el provinción de la p
APPEARANCE & ODOR Clear light yellow liquid; citrus	s odor	dadog sigo in s	
STEEL ON WATER BAND	EXPLOSION DATA		
FLASH POINT	I FLAMMABLE	IPPER	LOWER
(Method Used) 165°F (C.O.C.)	EXPLOSIVE N D	TDETE	RMINED
EXTINGUISHING MEDIA CO2, dry powders, foam typ			
SPECIAL FIRE FIGHTING PROCEDURES			
Treat as Class B (oil type	e) fire	nin kontike rozente	
UNUSUAL FIRE & EXPLOSION HAZARDS		na sana na sa	
		CHARLEN LINE	
SECTION-V-LEMERGEN	Y AND FIRST AID	PROCEDURES	
EYES Immediately flush with water for severa		PROCEDURES	La de la companya de
EYES		PROCEDURES	



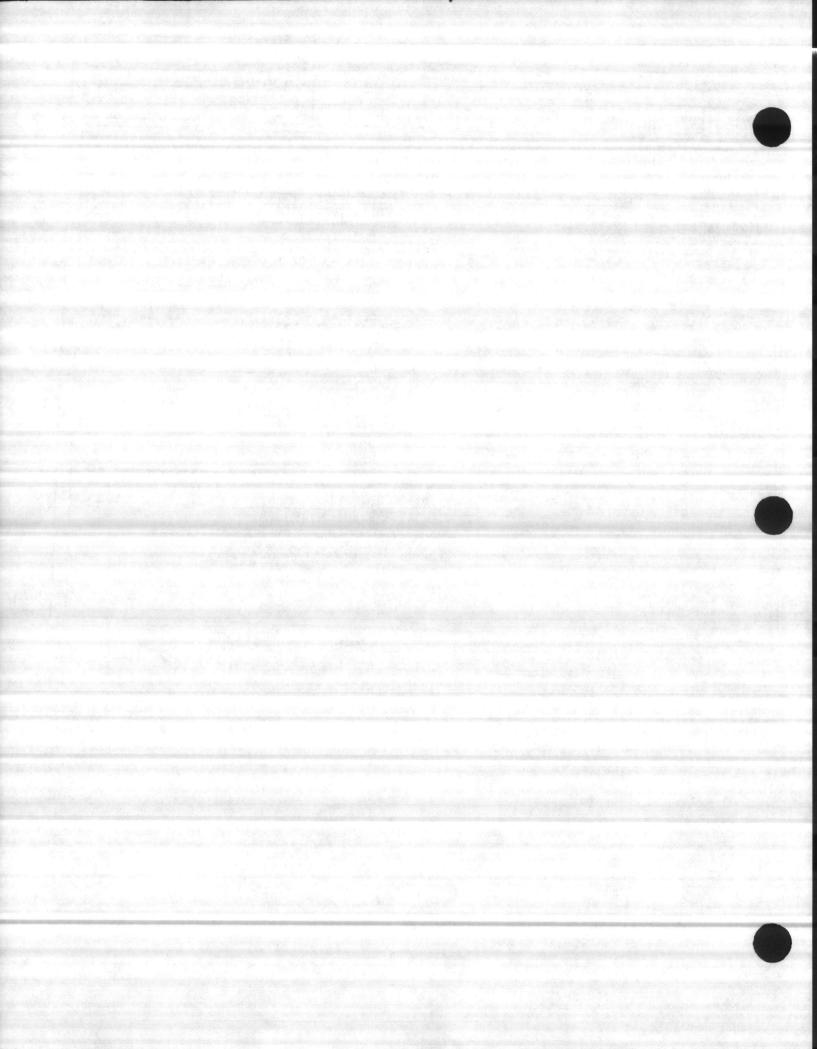
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MANUFACTURER	CODE & PART			eed	2. MANI	FACTI	URER'S	OTD	ora	tia	n			
Card Columne & Inr	. 22)				1 100	Dob	bs La	ine,	Sui	te #	204	•••		
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MANUFACTURER'S	ATALOG IDEN	190 CO	AND DA	t No	: GS-0	00F-8	7463			N	I/A		<u></u>	
Special Ite	M #NIS-G-	190 . Co	ntrac	T NO	. GS-0	00F-8	7463	1		N	I/A			
Special Ite	m #NIS-G-0	190 . Co	ntrac	NAM	OF ITE	REOU	7463	·		N	I/A			
Special Ite	M #NIS-G-	0190.00	ntrac	NAM	GS-GS-G	REOU	7463 JESTER	·						
Special Ite	M #NIS-G-U	6850	•.	Ci	trikle	en erou	7463 JESTED			. COL	.OR	N7A		•
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Special Ite	M #NIS-G-C	6850	•.	Ci	trikle	en erou	7463 Jested	,		. COL	.OR C		Drut	n
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Special Ite TECHNICAL MANUA CTA 50-970- 1 DESCRIPTION OF IT Solvent clean petroleum so	M #NIS-G-C	6250 rinseab	ole, c	Ci Ci	trikle		JESTED be		IES V/A	. COL	.0R 55 G	al.	AL NU	
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Special Ite TECHNICAL MANUA CTA 50-970- 1 DESCRIPTION OF IT Solvent clean petroleum so	M #NIS-G-U L NUMBER NDD A FSC TEM REOULSTE N/A N/A	6250 Prinseab	ntrac	MOI	DEL NUM N/A MARKS	65-00	DF0-8 trodu	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	125 1/A	512	.0R 55 G	seni N	AL NUI	
Special Ite	M #NIS-G-U L NUMBER NDD A FSC TEM REOULSTE N/A N/A	6250 Prinseab	ntrac	Ci Ci Conta	DEL NUM N/A MARKS EW Ite	65-00	DFO-8 trodu	3746: JCt0	IES N/A Ty S	siz	on 55 G	seni N	AL NUI	
TECHNICAL MANUA CTA 50-970- / DESCRIPTION OF IT Solvent clear petroleum so	M #NIS-G-U L NUMBER NDD A FSC TEM REOULSTE N/A N/A	6250 Prinseab	ntrac	Ci Ci Conta	DEL NUM N/A MARKS	65-00	DFO-E trodu 10	- SE 1 37463 JCC0 .70	IES V/A Try S per	siz	on 55 G	seni N	AL NUI	

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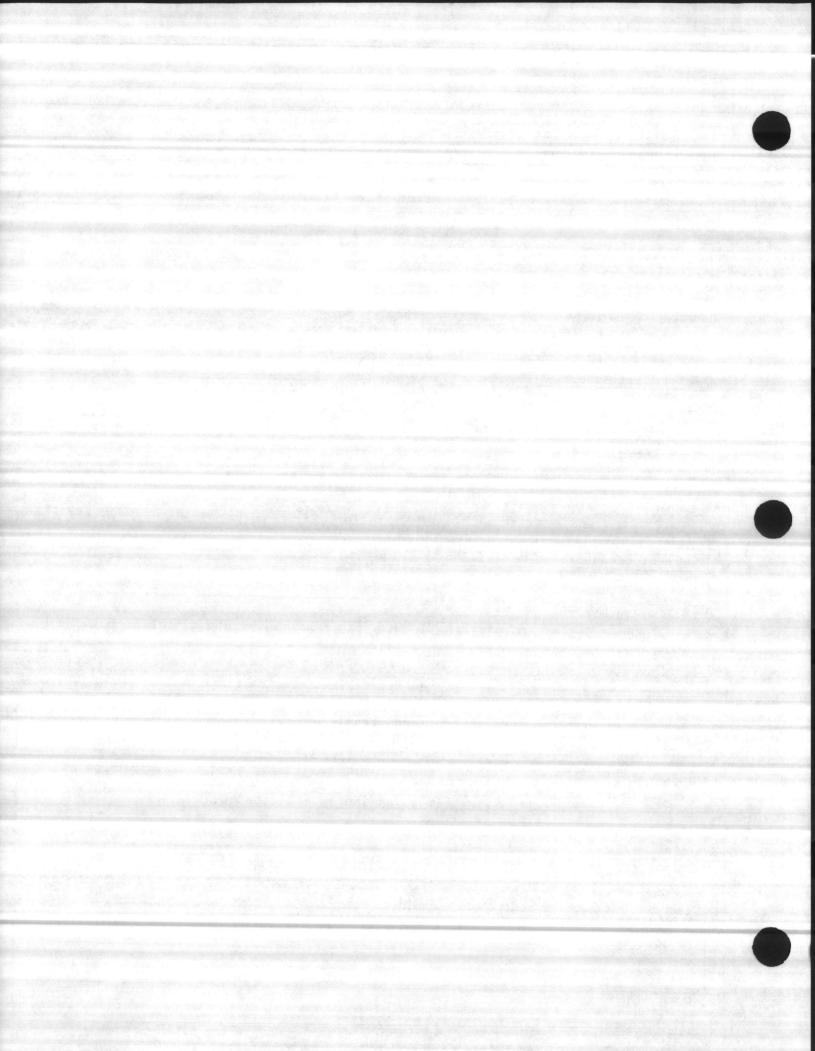
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NON-NON REQUISITION (MANUAL)

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	ablished; product has very low vapor pressure.
	F OVEREXPOSURE:
INILAL ATIO	n se nausea or irritation to mucous membranes.
	se nausea of ittitation to macous memory
SKIN	
May be o	corrosive on prolonged contact only.
EYES	
May be o	corrosive on contact only.
CHRONIC C	OVEREXPOSURE EFFECTS
Not asc	ertained.
	SECTIONALLIREACTIVITEDATALIST STATE
Product	is stable. IBILITY
Strong a	acids.
HAZARDO	US DECOMPOSITION PRODUCTS
None kn	
CONDITION	NS CONTRIBUTING TO POLYMERIZATION
Will no	t occur.
Collect	BE TAKEN IF MATERIAL IS RELEASED OR SPILLED on absorbent material or mop up tith water. IZING CHEMICALS
Not app	licable
WASTE DIS	SPOSAL METHOD sed emulsions to separate, skim off top oil layer and discharge bott
Allow u	sed emulsions to separate, skim off top off fayer and erections in accordance with EPA regulations.
layer 1	
	IPROJECTIVE FOURMENT SALAR
	TION REQUIREMENTS
Local e	exhaust recommended in confined areas.
7	RESPIRATORY Maintain adequate ventilation.
ECIAL PERSONAL PROTECTIVE EQUIPMENT	Eve Splash proof goggles, if splashing is anticipated.
CTIN	
ALPOTE	Solvent resistant
EG	OTHER CLOTHING & EQUIPMENT
0	Use goggles, apron, boots as required
PRECAUT	IONS TO BE TAKEN IN HANDLING & STORAGE (Always refer to label directions when using.)
Do not	reuse container. Dispose of container in accordance with local, st
and fed	leral EPA regulations.



CITRIKLEEN® BIODEGRADABLE, WATER SOLUBLE SOLVENT CLEANER AND DEGREASER

Surface

Mill housings;

shovel sticks,

trucks, mill stands, floors, oil cellars

PROPERTIES:

Physical Form and Odor
pH (concentrate)
Flash Point (concentrate) 165°F (C.O.C.)
(1:3 parts water)
Fire Point (concentrate)
Freezing Point Approximately 32°F
Solubility
Rinsability Excellent with water
Viscosity :BRK. Spindle No. 1 @ 60 RPM, approximately 18 cps
Waste Disposal
Metal Safety Safe for use on most metals
Caution: Prolonged immersion may attack certain aluminum alloys. Test before using.

Water

Dilution

Rates

1:1 to 1:10

or undiluted.

Method of Application

Use coarse spray, foam

on, or use dip. Rinse

water or dry rag wipe.

on or apply by brush.

Rinse with water.

TYPICAL USE DIRECTIONS:

Automotive parts, engines, housings, transmissions, all metal parts.	Heavy grease, oily deposits	1:2 to 1:20	Spray or brush on, or use in a cold tank dip. Rinse with water.
Waste treatment plants; wet wells & walls; lift sta- tions.	Waste fats, grease, oils, odor sources	1:1 to 1:5	Spray on using coarse spray under normal or low pressure. Allow 10-15 minutes dwell time. Water rinse before surface dries.
Industrial plant flooring	Heavy greases, oil, rubber marks	1:10 to 1:30	Spray, mop or brush on. or use power/vacuum scrubber with pickup.
Parts Washing	Grease, oils	1:3 to 1:20*	Used cold in recirculating dip tanks. Rinse with

Problem

. Soils

4:

lubes

Heavy grease,

deposits, tar,

oils, carbonized

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*At these dilutios ratios, Citrikleen is exempt from permit requirements under District Rule 11(d) (37), Air Pollution Control, County of San Diego, California.

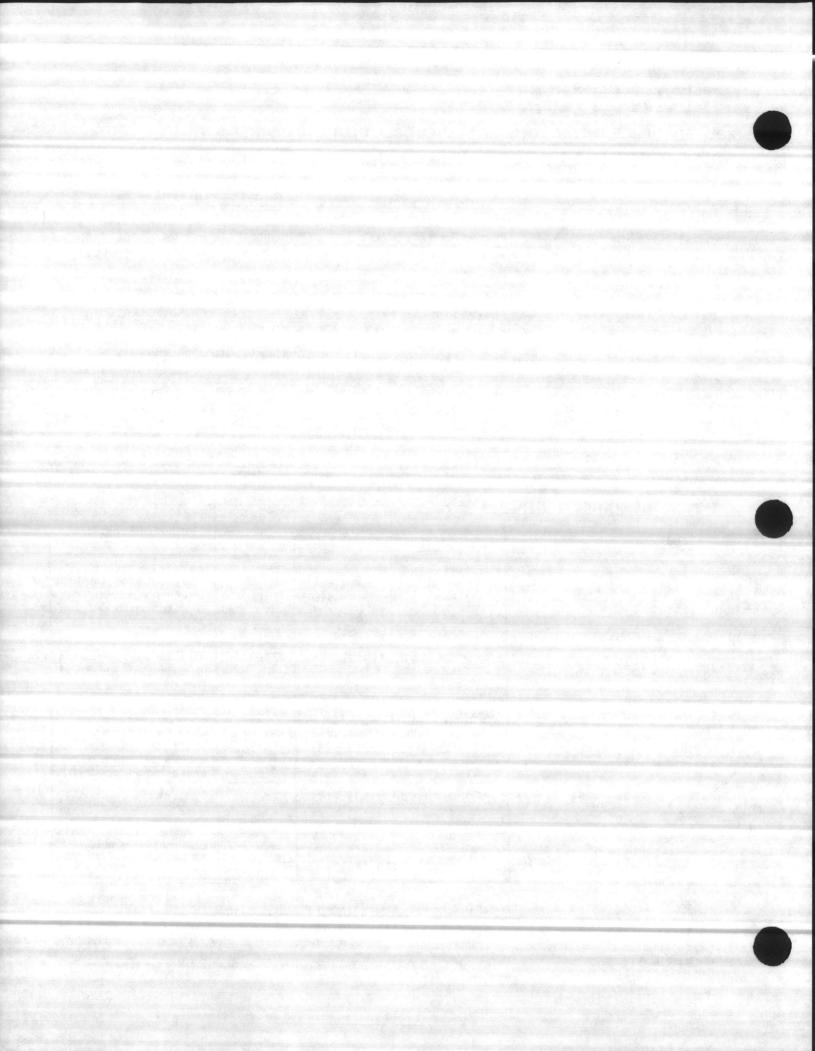
Before using, always read precautions and follow directions for use appearing on container label.



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SAFETY DATA:

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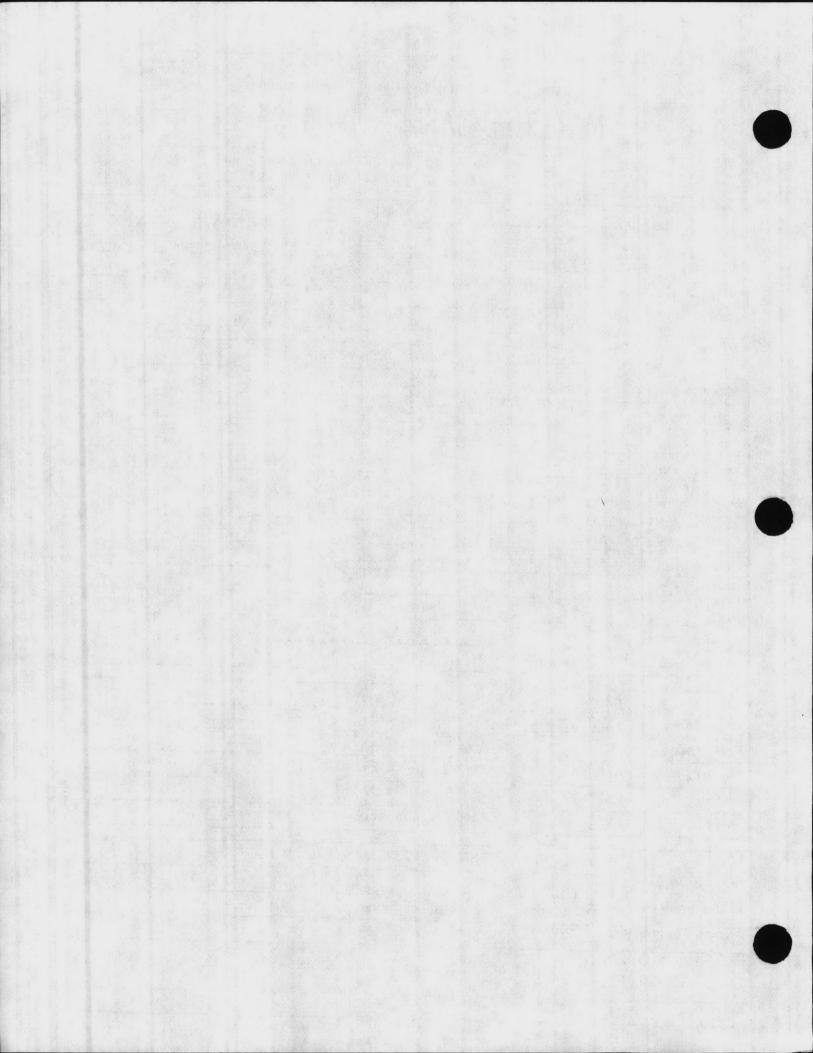


Occupation	nal S	alety an	ENT OF LABOR Id Health Adminis	tration	190, 4	4-11307
MATERIA		SAFE	TY DATA	211561		ener da he
Required under USD Shipbuilding, e	L Sal	ety and I hipbreaking	lealth Regulations for ng (29 CFR 1915, 19	r Ship Repairing, 016, 1917)		
		SECT	TION I			
MANUFACTURER'S NAME	0			EMERGENCY TELEPHONE (804) 485-1155	ENO.	
Chemical Research Products ADDRESS (Number, Street, City, State, and ZIP Co 3600 Koppens Way, Chesape CHEMICAL NAME AND SYNONYMS 1,2 - Vichlorobenzene	de) ake,	<u>Virg</u>	iria 23323 TRADEN	AME AND SYNONYMS Cope FG	•	
CHEMICAL NAME AND SYNONYMS 1,2 - Vichlorobenzene CHEMICAL FAMILY (organic) Chlorinated Benz	ene			<u>C6 114 C12</u>		
SECTION	11 -	HAZAI	IDOUS INGREDI	ENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	*	TLV (Units)	ALLOYS AND	METALLIC COATINGS	×	TLV (Units)
PIGMENTS			BASE METAL			
CAIALYST 1.2 - Dichlorobenzene			ALLOYS			
VEHICLE Petroleum Distillate			METALLIC COATING	35		
SOLVEN15			FILLER METAL PLUS COATING OR	COREFLUX		
ADDITIVES Oil Emulsifiers		(OTHERS			
othens Detergents			and the second			
HAZANDOUS MIXTUNES	OF C	DIHER LI	DUIDS, SOLIDS, ON G	ASES	*	(Units)
					_	
		- Carlos and				
SEC	TIO	<u>v III - F</u>	HYSICAL DATA	· · · ·		
	1	5° F	SPECIFIC GRAVITY	(H20=1) Apphax	1.	3
BOILING POINT (°F.) Range Approx. 350	Vat	La nation have the	PERCENT, VOLATIL	and the state of t		28:
		.07	EVAPORATION RAT	E Less tha	1	•
VAPOR DENSITY (AIR+1)	-		I - total have a star		(Section)	general de
SOLUBILITY IN WATER Negligible	d w	ith a a	romatic odor -	orange		
	1.2					
SECTION IV -	FIRI	E AND E	XPLOSION HAZ		enter de la	Uel
Den cup 167° F (Approx.)		,	Be volume		-9	20-
EXTINGUISHING MEDIA Water spray, d SPECIAL FIRE FIGHTING PROCEDURES	ry	chemica	l, boam or car	oun arvane		
the second s		ayalayaala soolaada Ta	a a server a server a server a server and the server and the			
			and the second			

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Form OSHA-20

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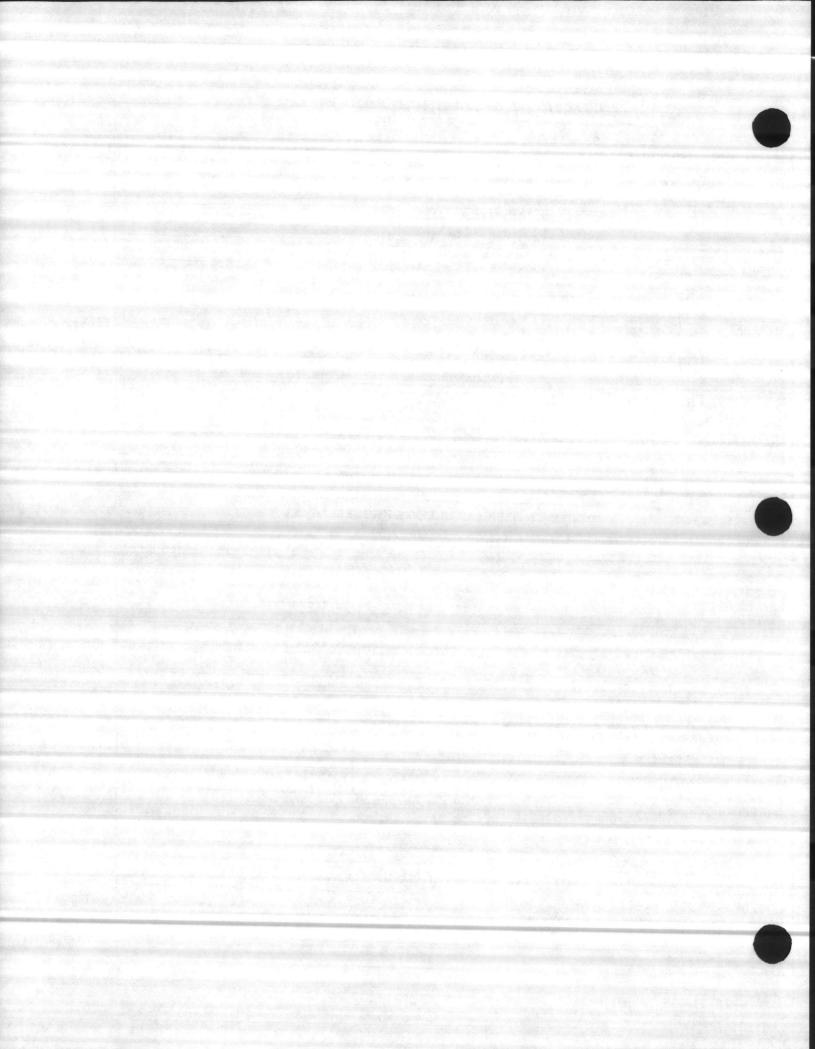


SHOLD LIN	IT VALUE	Non Toxic	2				
EFFECTS OF OV	EREXPOSURE	None					
	100						
EMERGENCY AN	D FIRST AID PRO	Flush wit	th water				
		Harmful A	in digest	ted			
	19	arati		PEACTIVIT		A	e e angelender i er er er er er er
		SECTI		NS TO AVOID		i i i i i i i i i i i i i i i i i i i	•
TABILITY	UNSTABLE	and the second				1	
	STABLE		None			• •	
	TY (Materials to av		Dilut	e only wi	ith wa	ler	<u> </u>
AZARDOUS DE	COMPOSITION PR	ODUCT5		CONDITIO	NS TO A	VOID	•
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WASTE DISPOSA	REN IN CASE MA	ON VIII -	Nop u Sewer SPECIAL	sfilled p or flus PROTECTI	h with	ı water	
NASTE DISPOSA	KEN IN CASE MA	ON VIII -	Nop u Sewer SPECIAL	porflus	h with	water FORMATION	
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Form OSHA-20 Rev. May 72



CHEMICAL RESEARCH PRODUCTS

3600 KOPPENS WAY CHESAPEAKE, VIRGINIA 23323 804/485-1155

Product 709

COPE

DESCRIPTION:

COPE is unique in that although there are many products, chemical and mechanical, that will unclog stoppages in sewer lines, there are only a few which are designed to prevent such stoppages. COPE, when used on a regular maintenance schedule, will prevent the build up of grease and oil in sewer lines, trickling filters, drain fields, grease traps, etc.

COPE is neither alkaline nor acidic and is safe to personnel as well as equipment. Only a small amount is used for each application, therefore COPE is economical. When the cost of unstopping clogged sewer lines is taken into consideration, COPE'S economy is quite pronounced.

COPE is a powerful emulsifier, liquifying agent, and odor controller. It will open traps and lines clogged with grease, safely and surely without damage to lines, and will completely eliminate the foul odors caused by these conditions. COPE will open leaching beds, drain lines, and grease traps; clear cess pools and septic tanks without affecting the enzyme action necessary to such systems. By opening these facilities, over flowing and unsanitary conditions are eliminated, thus odor is controlled at its source. By dissolving and emulsifying greases and permitting them to be carried through the lines, flies and roaches are prevented from nesting and feeding.

DIRECTIONS:

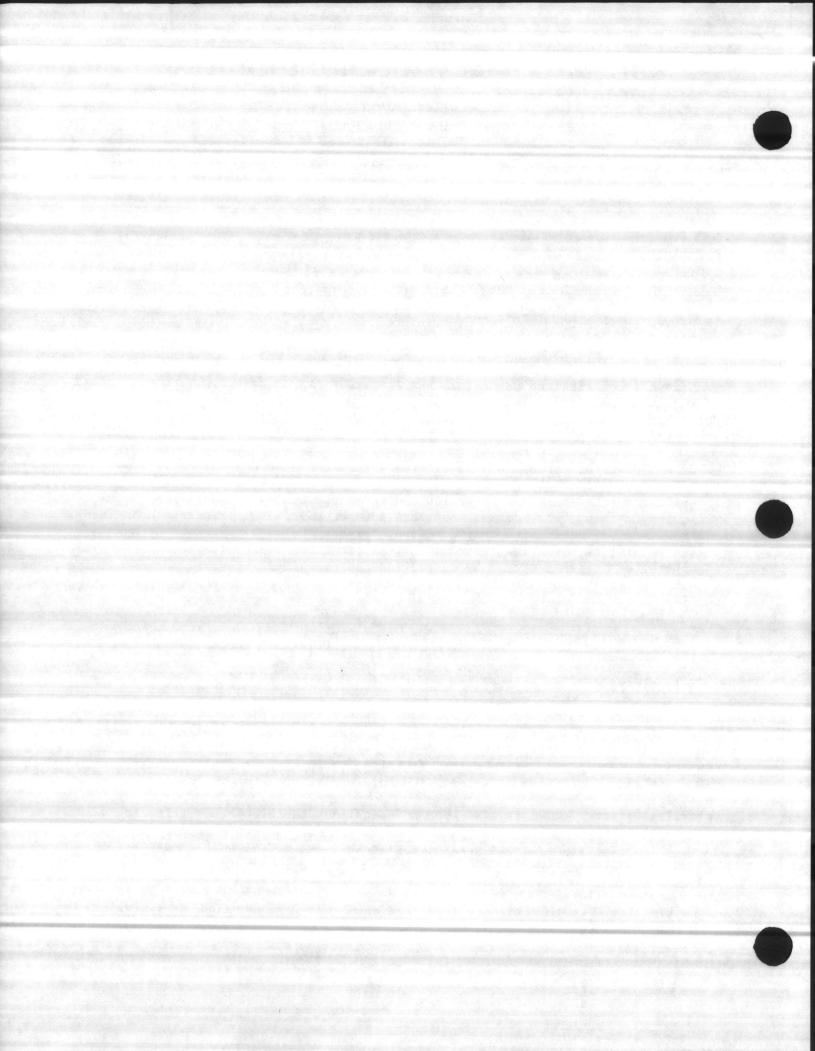
COPE is always diluted at the rate of 1 pint per gallon of water.

Septic Tank systems: COPE is charged or dripped into septic tanks, grease traps, sump pumps and holding tanks. COPE will dissolve the grease enabling the sewage to flow freely to the drain fields. The sand, gravel and rock in the drain fields are kept clean, letting the waste materials filter through the leaching area. Tops of the drain fields are then dry, clean and completely free from odors.

Trickling Filters: COPE is also used to open lines that lead from trickling filters to the chlorinated or leaching beds. COPE is dripped into these clogged areas and within a relatively short period of time the sand and stone fill become visible indicating a steady flow.

The amount of diluted COPE to use always depends upon the conditions that prevail. Allow time for COPE to act; once lines are open and clean use COPE as a regular maintenance procedure.

CHT. SYSTEM! COPE WILL BREAK DOWN CRYSTALLIZED SALT BUILDUP IN LINES AND ALLOW





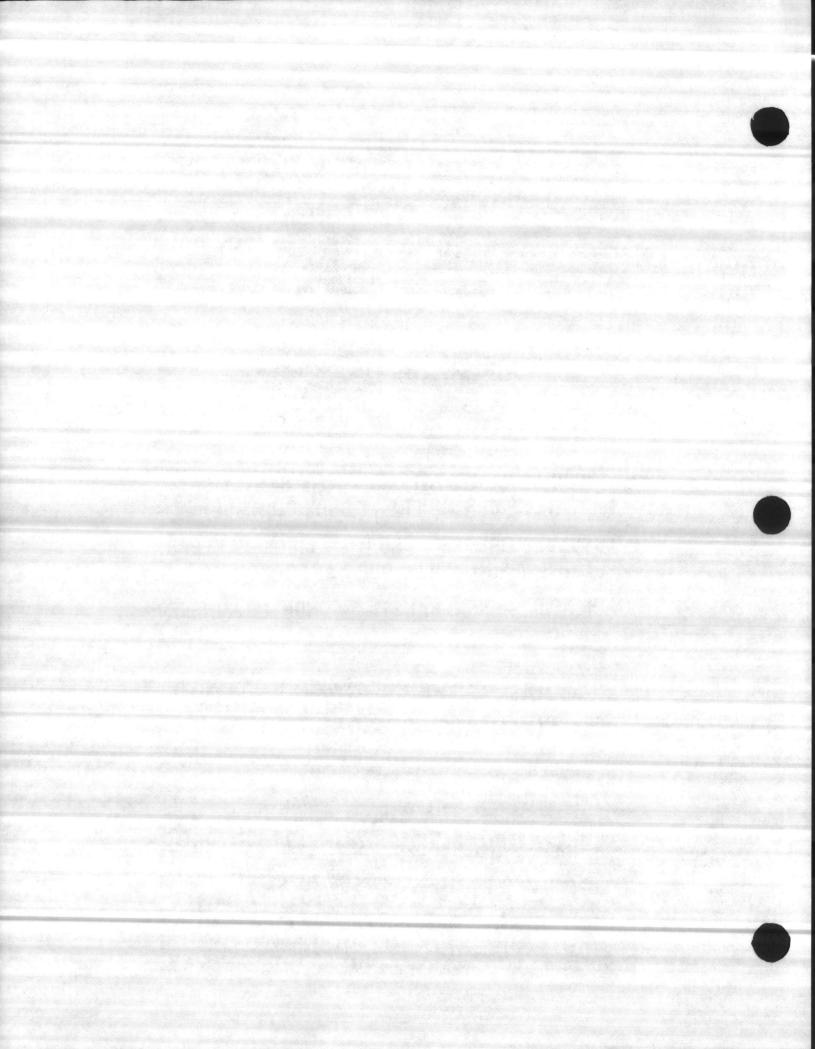
COPE

FOR SEWAGE SYSTEMS — CHT SYSTEMS REFUSE CONTAINERS — ODOR CONTROL

DISSOLVES GREASE - SOAP - MUCK - KEEPS LINES OPEN - KILLS ODOR AT ITS SOURCE NON ACID - NON CAUSTIC - NON CORROSIVE

JENERAL SERVICES ADMINISTRATION CONTRACT #GS-00S-56075







COPE dissolves grease, soap, muck in CHT SYSTEMS - PIPE LINES -TRAPS - LIFT STATIONS - PUMPING STATIONS - DRAINS - SEPTIC TANKS - TRICKLING FILTERS - SLUDGE BEDS.

COPE kills odors on LANDFILLS — GARBAGE CANS — REFUSE TRUCKS — TOILETS — URINALS.

COPE controls odor at its source; prevents vermin, flies and roaches from nesting and feeding.

DIRECTIONS

COPE DOES NOT WORK IMMEDIATELY; GIVE IT SUFFICIENT TIME.

C0. _ must always be diluted prior to use—at least 1 part COPE to 8 parts water (1 pint COPE per gallon of water.)

FOR ODOR CONTROL - Dilute 4 oz. COPE in 1 gallon water-spray or pour on contaminated source.

FOR GREASE TRAPS — Dilute 1 pint COPE in 1 gallon water for each 40 gallon capacity trap—apply every other day depending upon use. (Grease traps should be first cleaned manually; apply COPE to prevent clogging.)

FOR TOILETS, URINALS, SINKS, LAUNDRY BASINS – Dilute 1 pint COPE in 1 gallon water—pour daily 2 oz. in each unit to prevent grease buildup.

FOR SEPTIC TANKS, HOLDING TANKS — Dilute 1 pint COPE in 1 gallon water —use 1 gallon for each 500 gallon capacity of tank. COPE will dissolve grease and other organic matter to facilitate pumping. COPE does not affect en ...e action.

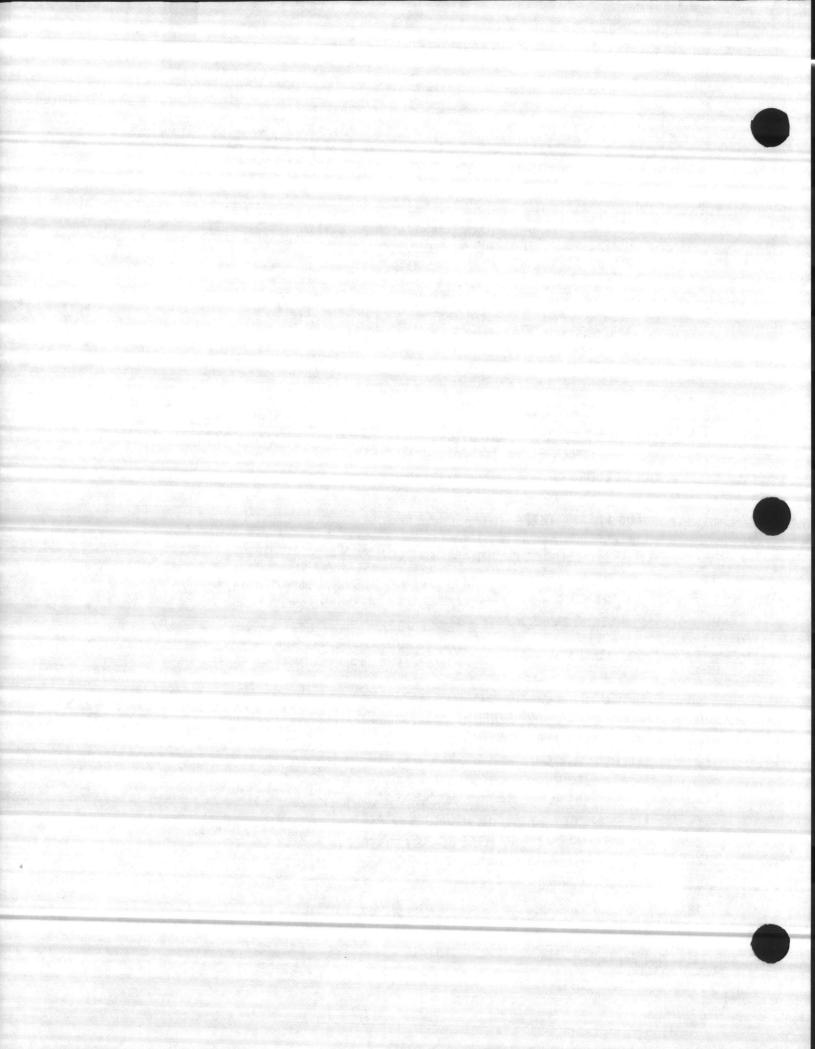
F... CHT SYSTEMS, LIFTING STATIONS, PUMPING STATIONS, FILTER BEDS, DRAIN FIELDS, AND OTHER USES – Contact technical department for instructions and information.

CAUTION: Avoid eye or skin contact. In case of skin contact wash with soap and water. In case of eye contact flush with fresh water for at least 15 minutes. See physician immediately.

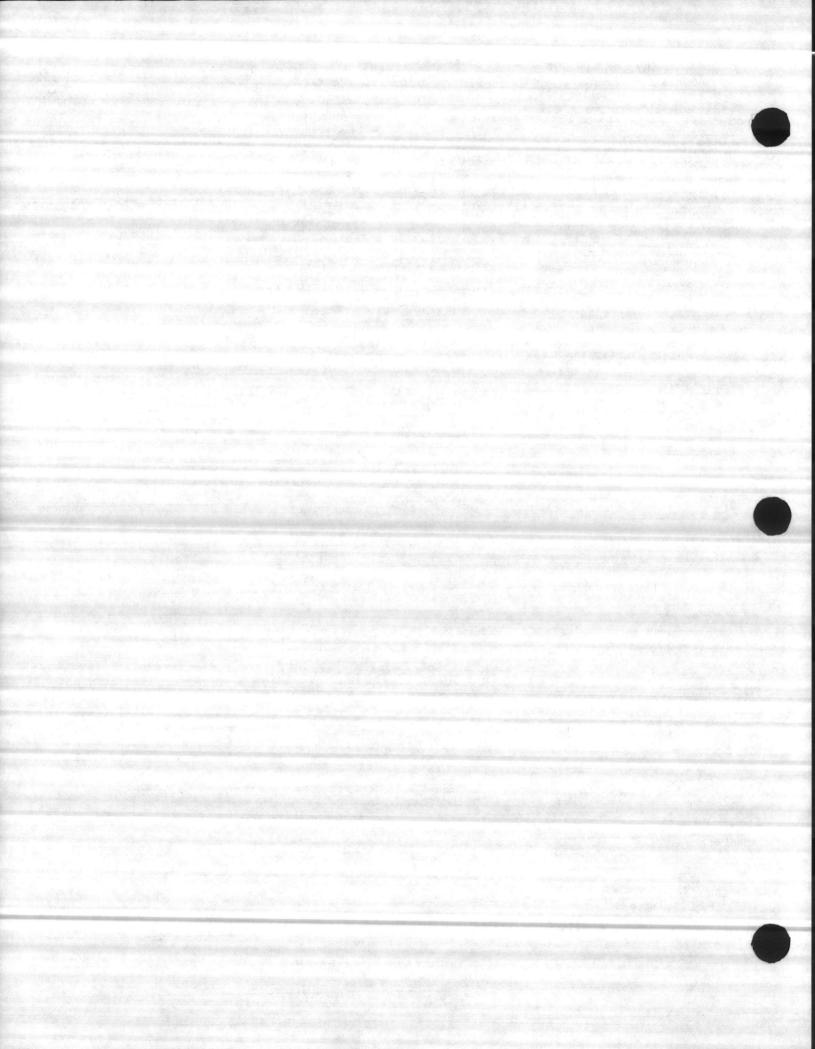
COPE CANNOT BE USED ON FIBRE GLASS TOILETS, FIBRE GLASS TANKS, OR ANY OTHER TYPE OF FIBRE GLASS CONSTRUCTION.

CHT SYSTEM: COPE will break down crystallized salt buildup in lines and allow proper flowing.





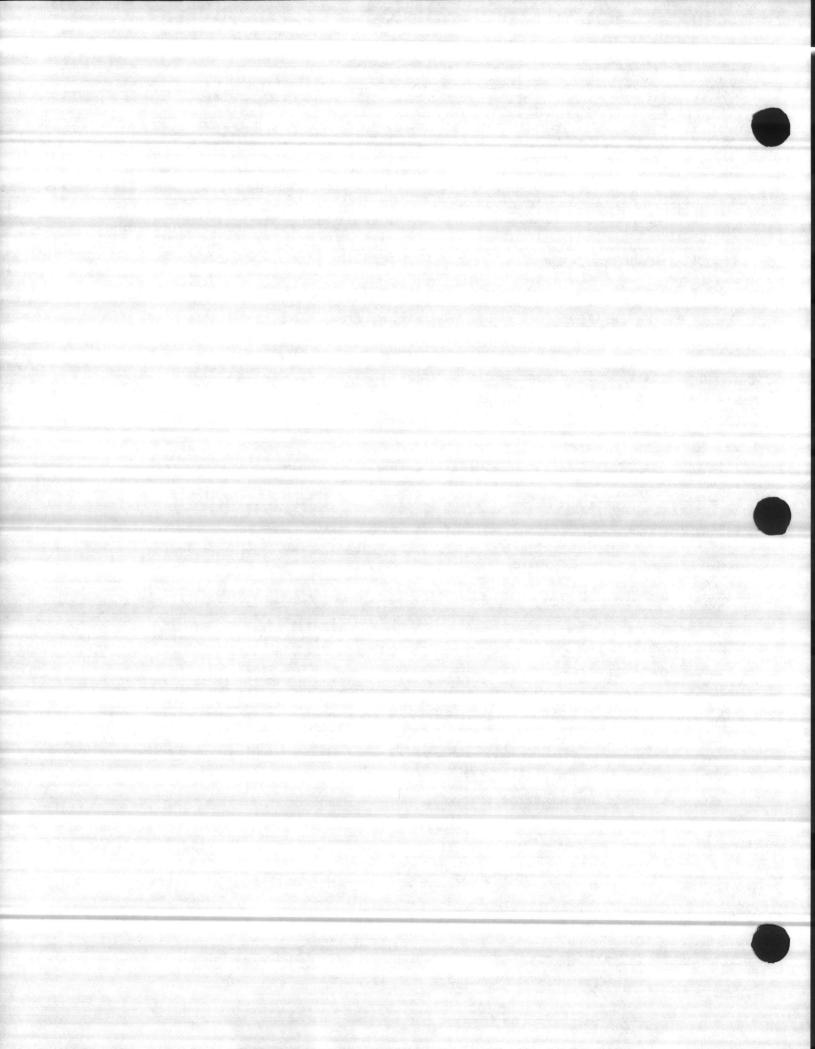
Material Safety Data Sheet May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.		U.S. Depa Occupational (Non-Mandat Form Appro		bor h Administration			
		OMB No. 121	8-0072	all shares and	81620		
IDENTITY (As Used on Label and List) GSA GLASS CLEANER (LIQUID) TYPE 1 CLASS 1		1 Note: Blank spa information	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.				
Section I NSN# 7930-00-184-942	3 CID A		-10F-48557				
Manufacturer's Name Hysan Corporation		Emergency Tele	phone Number				
Address (Number, Street, City, State, and ZIP Code)			23-1010 ber for Information				
4309 S. Morgan St.			76-8981				
Chicago, IL 60609		Date Prepared	104	and and an arrived	gende in stalle		
	and the second	10/27 Signature of Pre	parer (optional)	(1)			
	ant Britister		In. A	reports.			
Section II — Hazardous Ingredients/Iden	tity Information	on		00	te same se transférence de la seconda de Seconda de la seconda de la		
Hazardous Components (Specific Chemical Identity; C	Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional		
2-Propanol	a di gara da salar di sa	400 ppm	400 ppm	NE	1-5		
				-	a an		
	The second se		0-1				
iling Point	istics 212°F	Specific Gravity (H;	zO = 1)		0.995		
ection III — Physical/Chemical Character piling Point por Pressure (mm Hg.)	The second se	Specific Gravity (H; Melting Point	20 = 1)				
viling Point por Pressure (mm Hg.)	212°F 18	Melting Point Evaporation Rate	20 - 1)		>32°F		
viling Point por Pressure (mm Hg.) por Density (AIR = 1) ubility in Water	212°F	Melting Point	₂ O = 1)				
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Stability				A CONTRACTOR OF A CONTRACT			
	Unstable		Conditions to Avoid	None		8. e	
	Stable	1.2.					
Incompatibl	lity (Materials to Avoid)	X	l				
Hazardous D	ecomposition or Byprod	ucts	one				
an ganadar a			Oxides of carbo	on formed upon	combustion	1.	
Hazardous May Polymerization	May Occur		Conditions to Avoid	None			
	Will Not Occur	x					
Section V	- Health Hazard	Data					
Route(s) of E	ntry: Inha	lation?	No	Skin?	and the second	Ingestion?	ang sanah sanah
Health Hazard	ds (Acute and Chronic)		No	Ye	5	Y	es
Eyes -	May cause pair	n or	irritation. In	gestion - May	be harmful	if swallowe	d
May car	use gastrointes	stina	l discomfort.		a dina ang sang sang sang sang sang sang san	and the second s	
			and the second	and the second second second			
Carcinogenici	ty: NTP	?	No	IARC Monographs?	No	OSHA Regulated	? No
		A. Sala	and the second				when applying a
Signs and Syl	mptoms of Exposure	Da	in or irritatio	-			
		ra		Π.	Strength 1	ALC: NO.	
1. 1. 1. A.L.		1.11					
Medical Condi	itions		Contraction of the second				
senerally Agg	ravated by Exposure	Un]	nown	a data data data data data data data da			distant in a
	d First Aid Procedures Flush with wat	er.	Call physician	if irritation	persists.	Ingestion -	- Give
Eves - water c	Flush with wat or milk. Call	physi	ician.		persists.	Ingestion -	- Give
Eyes - water c Section VII	Flush with wat or milk. Call - Precautions fo	physi r Safe	ician. Handling and Use ed or Spilled		persists.	Ingestion -	- Give
Eyes - water c Section VII	Flush with wat or milk. Call	physi r Safe	ician. Handling and Use ed or Spilled		persists.	Ingestion -	- Give
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Eyes - water c Section VII	Flush with wat or milk. Call — Precautions fo aken in Case Material Is	physi r Safe	ician. Handling and Use ed or Spilled		persists.	Ingestion -	- Give
Eyes - water c Section VII	Flush with wat or milk. Call — Precautions fo aken in Case Material Is	physi r Safe Release	ician. Handling and Use ed or Spilled	e up spills.		Ingestion -	- Give
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N.A.



DESCRIPTION:

Cresol Red Indicator 185-5

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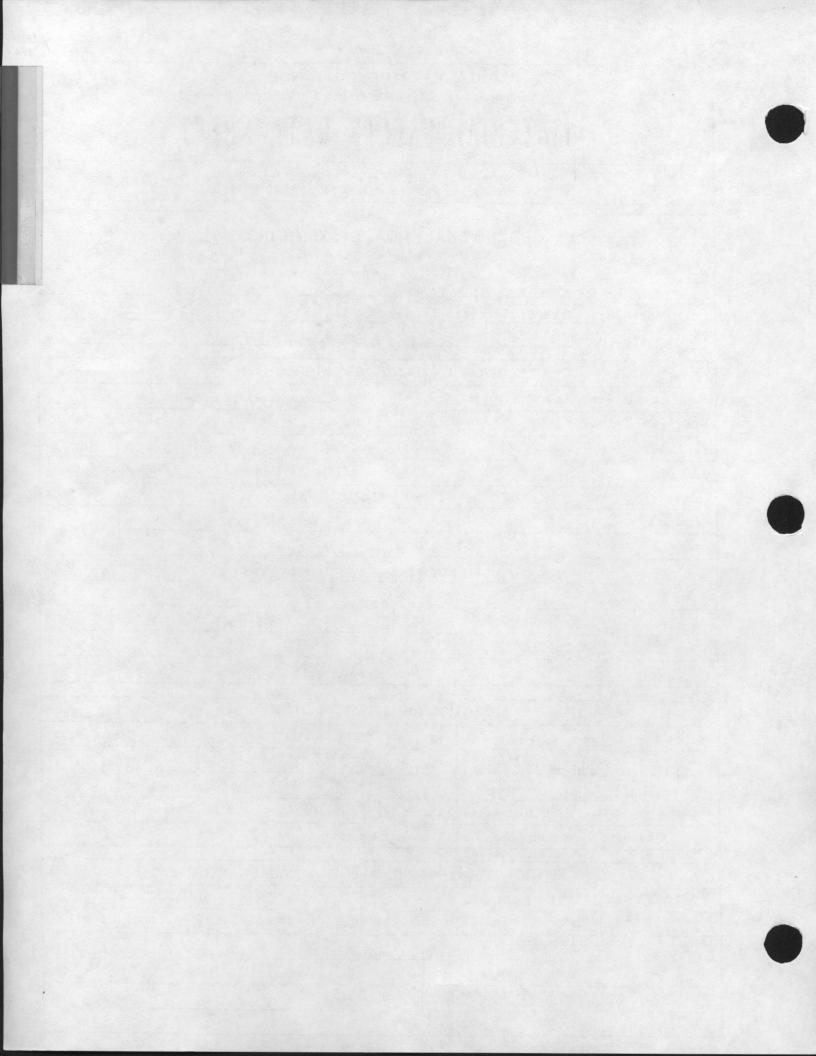
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YES Form Approved OME No. 44-R1387 U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration MATERIAL SAFETY DATA SKEET Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917) ORBECO ANALYTICAL SYSTEMS, INC. GENCY TI LEPHONE NO. MANUF CTURER'S NAME 185 Marine Street, Farmingdale, NY 11735 5-222-0300 HELLIGE, INC. (516) 293-4110 ADDRE: 5 (Number, Street, C. 877 Stewart Ave 185-S Cresol Red Indicator CHEMIC L NAME AND SYNONYMS Cresol Red; o-Cresolsulfonphthalein FORMUL CHEMIC AL FAMILY 0_S + CH_OH + H_O C , H, Aromatic Compound SECTION II · HAZARDOUS INGREDIENTS TLV TLV PAINTS, PRESERVATIVES, & SOLVENTS * ALLOYS AND METALLIC COATINGS % (Units) (Units) BASE METAL PIGMENTS 1 ALLOYS CATALIST

VEHICLE .	METALLIC COATINGS	i !
SOLVENTS	I FILLER METAL I PLUS COATING OR CORE FLUX	
ADDITI /ES	OTHERS	
OTHERS	·	
HAZARDOUS M	AIXTURES OF OTHER LIQUIDS, SOLIDS, OR GAGES	A TLV (Units)
	Methanol	23
	Cresol Red	0.1

SEC	CTION III -	PHYSICAL DATA	
BOILING POINT (") 100% Methanol	148.1	SPECIFIC GRAVITY (1120=1)	0.9621
VAPOR PRESSURE (mm Hg.) 20°C 100% Methanol	97	PERCENT, VOLATILE BY VOLUME (%)	998
VAPOR DENSITY (AIR=))	1.11	(BU AC ::) ;00% Methanol	5.91
SOLUBILITY IN WATER Miscible with	water		
APPEARANCE AND ODOR Red color,	slight met	hanol odor	

SECTION IV · FIRE AND EX	1008 Methanol by	L	
FLASH POINT (Method used) 93° F, C.C.	FLAMMABLE LIMITS Volume in air	7.3	
EXTINGUISHING MEDIA Carbon Dioxide or dry chem mer foam for large tires, water,	ical for small fires.	Alcohol	or poly-
SPECIAL FIRE FIGHTING PROC DURES	er to burning fuel may		
of flame			





SECTION V . HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

200 ppm for 100% Methanol

EFFECTS OF OVEREXPOSURE Swallowing the liquid causes inebriation, headache, nausea, and vomiting leading to illness, blindness and perhpas death. Liquid causes eye irritation. Breathing vapors may cause drowsiness, nausea, vomiting. EMERGENCY AND FIRST AID PROCEDURES Flush skin and eye contact with plenty of water. Get medical care for eyes. If inhaled, remove to fresh air and give artificial respiration, if breathing has stopped, call a physician. If swallowed, induce vomiting at once: then give 2 tablespoons baking soda in a glass of water. Call a physician at once.

		SECTI	ON VI · F	PEACTIVITY DATA	Sector Street	
STABILITY	UNSTABLE	principal de la compactica de la compactica Esta de la compactica de la	CONDITIO	INS TO AVOID		
	STABLE	x	Span	rks, heat and fires		19. 19. T
	ITY (Materials to avoi	")			al the second	and the
Contractor and the second	COMPOSITION PRO	han an training and a second	nin der			
Contractor and the second	COMPOSITION PRO	DUCTS		CONDITIONS TO AVOID		

SECTION VII · SPILL OR LEAK PROCEDURES

Eliminate all sources of ignition. Flush spilled material with large volume

of water.

Small quantities may be diluted with water and washed down the drain.

	SECTION VIII - SPECIAL	PROTECTION IN	FORMATION
RESPIRATORY P	ROTECTION (Specify Type)		
VENTILATION	LOCAL EXHAUST Preferable		SPECIAL
anna 1999 an an beachailte. An thairte an thairte a	MECHANICAL (General) cceptable		OTHER
PROTECTIVE GLC Plastic	gloves	EYE PROTECTION	Coverall goggles
OTHER PROTECT		•	

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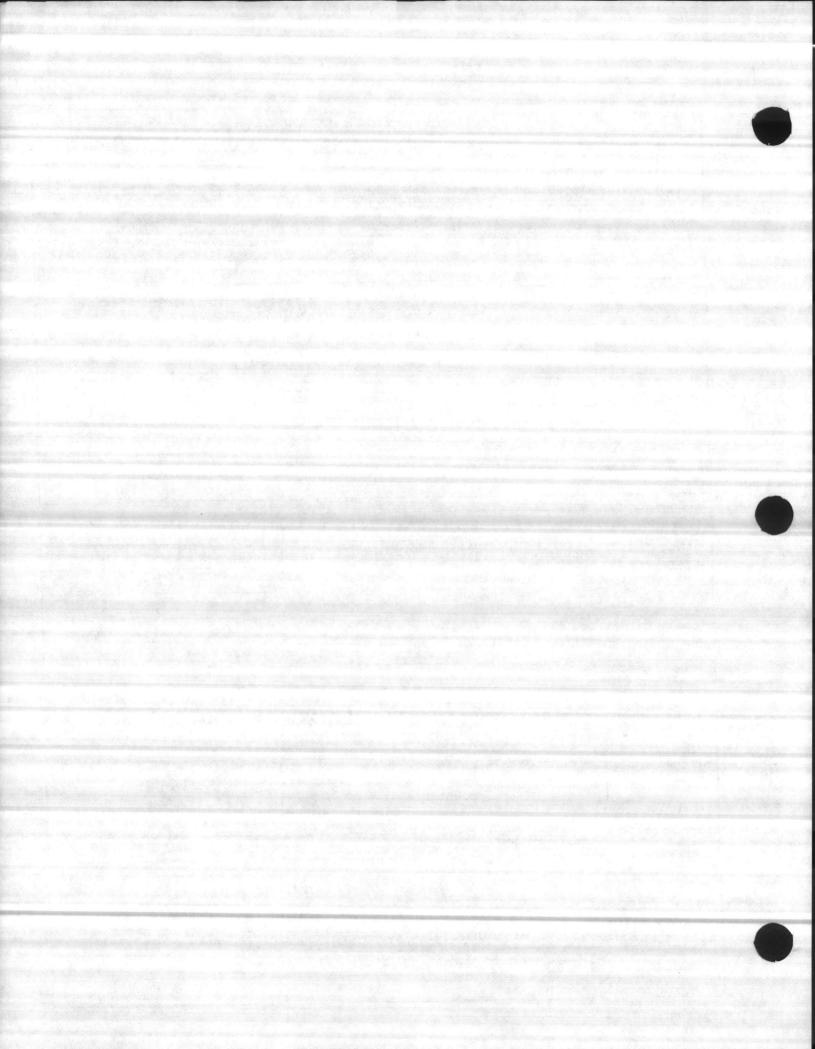
SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING May be fatal or cause death if swallowed.

Repeated breathing of vapor harmful. Avoid prolonged or repeated contact with skip.

OTHER PRECAUTIONS Keep out of direct sun and bottle covered.

Avoid bottle breaking.



DESCRIPTION:

Degreaser, Super Chief



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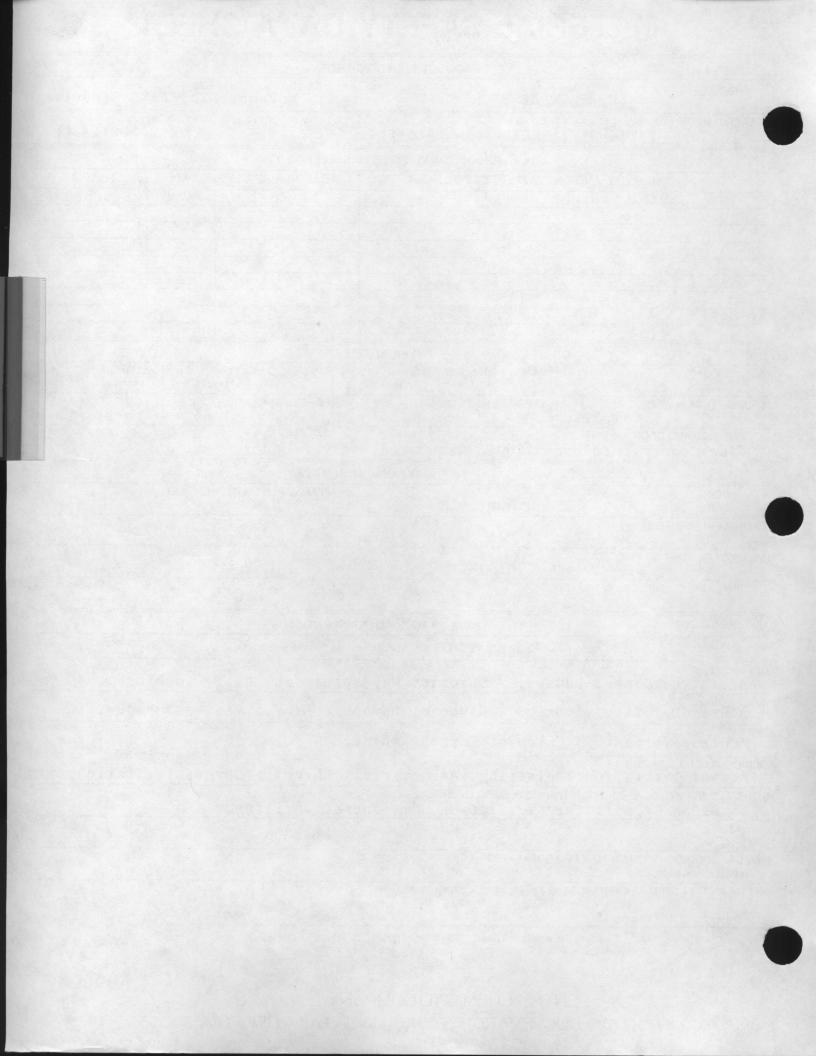


MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICA			
TRADE NAME	DATE November	22, 1	985 (Revised)
GENERIC NAME Heavy Duty Industrial Degreaser	PHONE NUMBER (EMERGENC	(Y) 404-934-4242
I • PRODUCT INGREDIENTS	(HAZARDOUS)		
CHEMICAL AND/OR COMMON NAME	CAS NUMBER	%	TLV/PEL
2-Butoxyethanol	111-76-2	7.0	25/50ppm (Sk
II • PHYSICAL DA	TA		
BOILING POINT 221°F. VAPOR PRESSURE 0		065	MELTING POINT N/A
SOLUBILITY IN WATER VAPOR DENSITY (AIR = 1) Complete 0.01	PERCENT VOLATILE	85.5	EVAPORATION RATE (Water =1) 1
APPEARANCE AND ODOR Clear, purple colored liquid with mild, s	olvent odor.		
III • FIRE AND EXPLOSI			
FLASH POINT None	FLAMMABLE LIMITS	LEL	UEL
EXTINGUISHING MEDIA			
SPECIAL FIREFIGHTING PROCEDURES N/A	·		
JNUSUAL FIRE OR EXPLOSION HAZARDS			
IV • HEALTH HAZARD INF	ORMATION		
HAZARD BY ROUTES OF EXPOSURE (Indi	cate chronic and acute)		
NHALATION Acute: Headache, nausea. Chronic: May r	esult in damag	e to l	olood.
NGESTION Acute: Moderately toxic. Chronic: Damag	e to throat an	id esor	ohagus.
Acute: Irritant. Chronic: Corneal injur	у.		
KIN CONTACT/ABSORPTION Acute: Irritation, defatting, dermatitis.	Chronic: Sev	ere in	ritation, bur
SIGNS AND SYMPTONS ASSOCIATED WITH EXPOSURE OVER TLV Nasal and respiratory irritation, dizzine	ss, vomiting.	:	
NEDICAL CONDITIONS WHICH MAY BE AGGRAVATED None known			1
NY OF PART I LISTED AS CARCINOGENS? (NTP, IARC, OSHA)			
HEALTH HAZARD INFORMATION CON			0/

SENTRY CHEMICAL COMPANY

1481 ROCK MOUNTAIN BOULEVARD • STONE MOUNTAIN, GEORGIA 30086



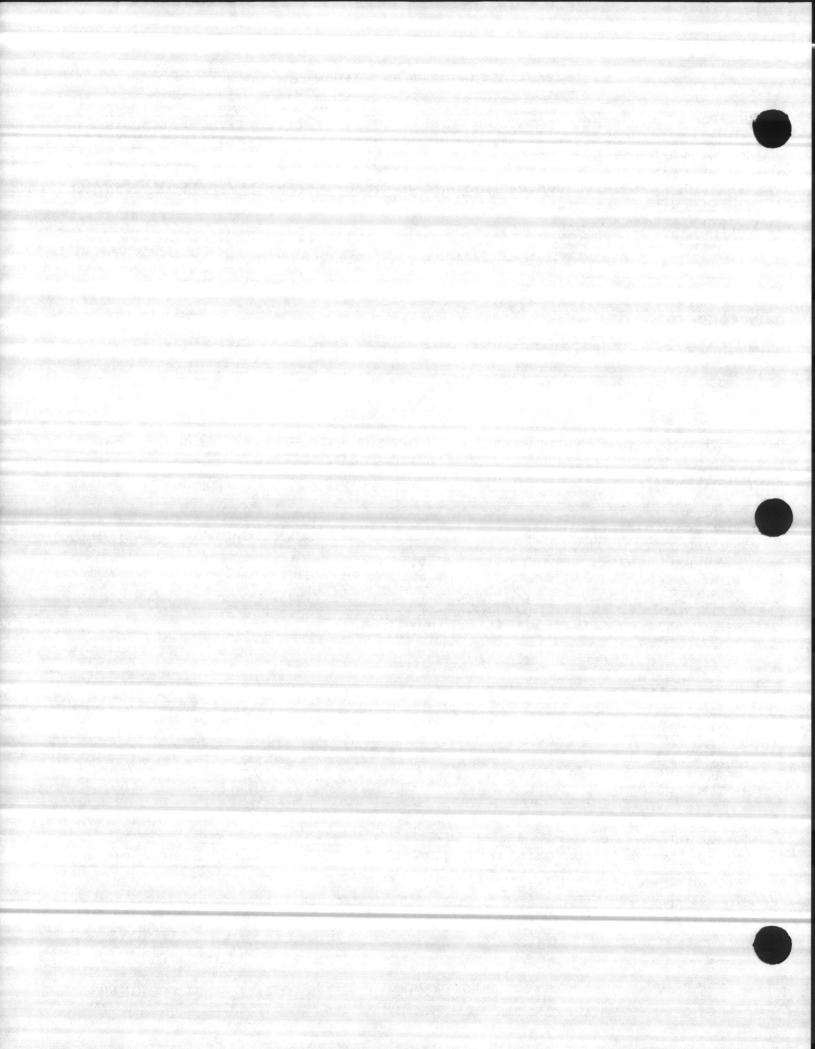
V . HEALTH HAZARD INFORMATION (Continued)

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		RST AID PROCEDURES	
AMALATION If affe administer of	cted, remove individua xygen. If breathing h	al to fresh air. If breathing is dif has stopped, give artificial respirat	ficu
INGESTION Give 2-	4 glasses of water imm	has stopped, give artificial respirat nediately. Induce vomiting. Repeat	
procedure un	til vomited fluid is c	clear. Get medical attention.	gala ville
EVE CONTACT Flush	with copious amounts	of water for at least 15 minutes.	
Get medical SKIN CONTACT / ABSORPT			
		er for at least 15 minutes.	
	arge quantities of wat	er for at feast 15 minutes.	
		R SAFE USE (When over TLV)	
	equired		!
EYE PROTECTION Splash	goggles		- desta
PROTECTIVE GLOVES Yes			
OTHER PROTECTIVE CLOT			<u> </u>
Protec VENTILATION REQUIREMENT	tive apron for clothin	g may be advisable.	
Local	exhaust		
	VII • RE/		
IS MATERIAL STABLE?	Yes	WILL HAZARDOUS POLYMERIZATION OCCUR?	- aprilation
	Tes	No	
COMPATIBILITY	r oxidizing material	CONDITIONS TO AVOID Aluminum and magnesium	
HAZARDOUS DECOMPOSIT	ION PRODUCTS	arious hydrocarbons, etc.	
		LEAK PROCEDURES	
STEPS TO BE TAKEN IF MA	TERIAL IS SPILLED OR RELEASED		
Rinse spilled	l material with copiou	s amounts of water.	
WASTE DISPOSAL METHOD			
		er, neutralize with acid, and flush	
Dilute with o down normal s		er, neutralize with acid, and flush	
Dilute with o	anitary drain. RCRA NUMBER	CERCLA (Superfund) REPORTABLE QUANTITY	
Dilute with o down normal s RCRA REGULATED DYes XD No DOT REGULATED	anitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS DOT NUMBER	
Dilute with o down normal s RCRA REGULATED D Yes X No	anitary drain. RCRA NUMBER N/A	CERCLA (Superfund) REPORTABLE QUANTITY	
Dilute with o down normal s RCRA REGULATED Yes X No DOT REGULATED	anitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME N/A	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS DOT NUMBER	
Dilute with o down normal s RCRA REGULATED I Yes XI No DOT REGULATED I Yes XI NO SPECIAL PRECAUTIONS FOR	copious amounts of wate sanitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME N/A IX • SPECIA R HANDLING AND STORAGE	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS DOT NUMBER N/A N/A AL PRECAUTIONS	
Dilute with o down normal s RCRA REGULATED Ves X No DOT REGULATED Ves X NO SPECIAL PRECAUTIONS FOR No special ha	copious amounts of wate canitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME N/A IX • SPECIA R HANDLING AND STORAGE ndling or storing pred	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS N/A DOT NUMBER N/A	
Dilute with o down normal s RCRA REGULATED Ves X No DOT REGULATED Ves X NO SPECIAL PRECAUTIONS FOR No special ha closed when n	copious amounts of wate canitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME N/A IX • SPECIA R HANDLING AND STORAGE ndling or storing pred	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS DOT NUMBER N/A N/A AL PRECAUTIONS	
down normal s RCRA REGULATED Yes X No DOT REGULATED Yes X NO SPECIAL PRECAUTIONS FOR No special ha	copious amounts of wate canitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME N/A IX • SPECIA R HANDLING AND STORAGE ndling or storing pred	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS DOT NUMBER N/A N/A AL PRECAUTIONS	
Dilute with o down normal s RCRA REGULATED Yes X No DOT REGULATED Yes X NO SPECIAL PRECAUTIONS FOO No special ha closed when n	copious amounts of wate canitary drain. RCRA NUMBER N/A DOT PROPER SHIPPING NAME N/A IX • SPECIA R HANDLING AND STORAGE ndling or storing pred	CERCLA (Superfund) REPORTABLE QUANTITY N/A DOT HAZARD CLASS DOT NUMBER N/A N/A AL PRECAUTIONS	

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DESCRIPTION:

Xertex



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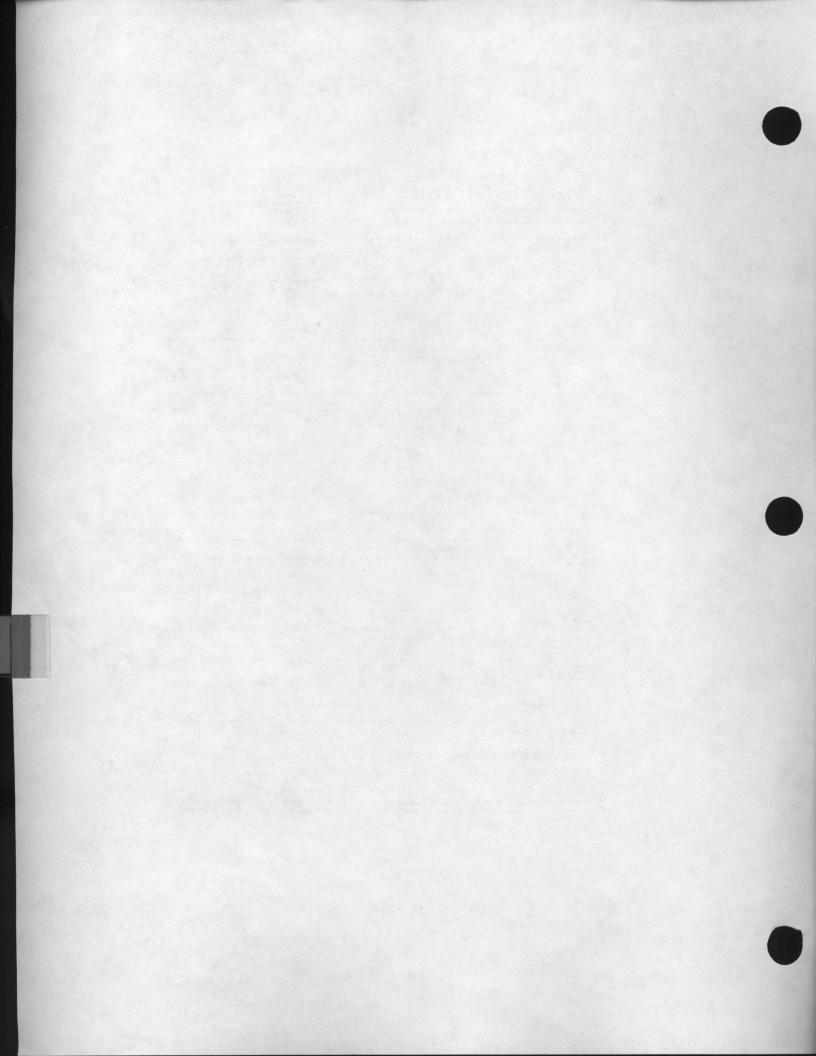
	/		U24512		
Mate	rial Safety Da	ta Sheet	U25660	Concentrate ENTIFIER fame: tweet on label and la	
Mey be used to 29CFR 1910. 12	comply with OSHA a Hazard Communication (Communication) (Commu	uen Standard.			
SECTION	1 -				
Manufacturer a	XERTEX - Delta Analy	tical			
Address	250 Marcus Boulevard		E mar gener Telephone	Ma (516)273-619	0
City, State, and		·····	Other		
	Hauppauge, New York	11787	Calls		
Signifiure of Pe Ranponaible for	Preparation (Optional)	·	Dave Prepared	10/17/86	
SECTION	2 - HAZARDOUS INGRE	DIENTSADENTITY			
Hazardous Com	penenusi tchemical & remmon bareesii	OSH. PEL	A ACGIH	Other Exposure	r C Iopuanal) N
	None	· · ·			
	Not hazardous as defi	ned in OSHA CFR	29 1910.1	200	
	(Glycerine + water +	potassium iodide)		
	CAS 56-81-5	CAS 7681-11-0			
			•		
	3 - PHYSICAL & CHEMICA				
SECTION Boulag	290 ⁰ C	L CHARACTERISTI		Vарот Ртаклите ная Нр	• Negligible
Boulung Pount		Specific Granty IM, Neclicible	.o=1.25		
Boulang Peant Solubulity In Water	290 ⁰ C	Specific Granty IN,	.o=1.25		
Boulang Pount Solubulity	290 ⁰ C Vapor Demoty Low = 11 Misciple	Specific Granty IM, Neclicible	.o=1) 1.25		
Boulang Pount Solubulity In Water Appear since and Odor	290 ⁰ C Vapor Demosty (Aar = 1)	Speafe Granty IM. Necligible Rescurity Watur Molung Penat	.o=1) 1.25		Negligible 1 at 220 ⁰ C)
Boulung Penat Solubility In Water Appear ance and Oder SECTION Flash	290°C Vapor Demoty Low = 11 Miscible Colorless, odorless 4 - FIRE & EXPLOSION 1	Speafe Granty IM. Necligible Bascurity Wature Penat DATA	0-11 1.25	(less than	1 at 220°C)
Booling Point Solubility In Water Appear since and Oder SECTION	290°C Vapor Demoty Law = 11 Miscible Colorless, odorless 4 - FIRE & EXPLOSION 1 National	Speafic Growty IH, <u>Necligible</u> Rescurity Water Meitung Phat DATA Flammable Limita in Air & by Velume	20-11 1.25	(less than UEL WD UPPPT Unknow	1 at 220°C)
Boulung Pount In Water Appear ance and Oder SECTION Flash Pount 34990	290°C Vapor Demonsy Low = 11 Miscible Colorless, odorless 4 - FIRE & EXPLOSION I C. Minimal C. Uned Open cup None	Speafic Granty IH. <u>Necligible</u> Reacturity Water Molung Point DATA Fismmable Limits in Asr 3 by Volume Aer Dry chemical	20-11 1.25	(less than UEL WD UPPPT Unknow	1 at 220°C)
Boulung Pount Solubility In Water Appear ance and Other SECTION Plant 349 Other Pount 349 Other Temperature	290°C Vapor Demonsy Low = 11 Miscible Colorless, odorless 4 - FIRE & EXPLOSION I C. Minimal C. Uned Open cup None	Speafe Granty IM. <u>Necligible</u> Rescurity Water Malung Ponat DATA Flammable Limita is Asr & by Volume Ner	20-11 1.25	(less than UEL WD UPPPT Unknow	1 at 220°C)
Boulang Peak Solubility In Water Appear unce and Oder SECTION Plash Penni 349 Oder Auto-Ignitus Temperatury Fightung Preced	290°C Vapor Demaily (Ar = 1) Miscible Colorless, odorless 4 - FIRE & EXPLOSION I C. Used Open cup None None Estinguist Media	Speafe Granty IH. <u>Necligible</u> Mascurity Water Melung Pmat DATA Flammable Limita is Aur 3 by Volume Aur Dry chemical (see below)	20=11 1.25	(less than wn Ust Unknow er spray	1 at 220 ⁰ () wn
Boulang Peak Solubility In Water Appear unce and Oder SECTION Plash Penni 349 Oder Auto-Ignitus Temperatury Fightung Preced	290°C Vapor Demonsy Low = 11 Miscible Colorless, odorless 4 - FIRE & EXPLOSION I C. Minimal C. Uned Open cup None	Speafe Granty IH. Necligible Rescurity Water Melung Pmat DATA Fiammable Limita is Aur 3 by Volume Dry chemical (see below) rated in fire) Fi	20=11 1.25	(less than wn Ust Unknow er spray	1 at 220 ⁰ () wn

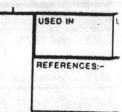
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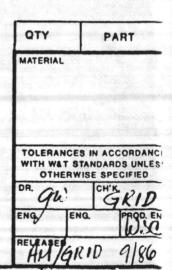
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The statements contained heres are efferted for informational purposes only and are intended to be followed only by persons having related technical stats and at their for other discretions and nisk. Since cambing and manner of use are outside our control, we make no warranties, express or implied, and assume no kability in convectors 10/5 (10/5)).



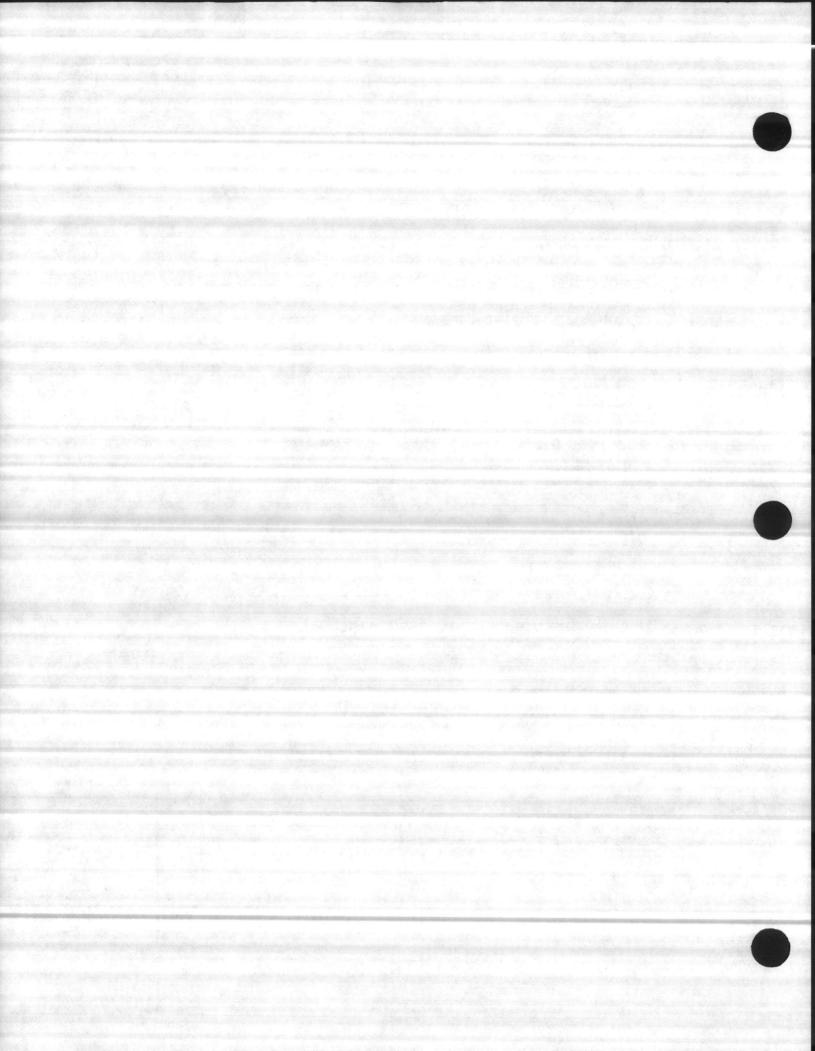


					ctrotyp Concentrat
SECTION 5- PHYS	SICAL HAZAR	DS (REACTIVITY	DATA)		· March
Stable I to A	ditions *		a harden har i	an ann an	
Noseriale to Ar and Ni	tric acid, o	cidizers, strong-	acids may cause ex	plosion	
list ardous				1997 - 1997 -	
Decomposition Products E "atardaus Mar Der "transition Will Not Der	Cur E to Avoid	ire	1.1. 54		<u></u>
SECTION 6 - HEA	LTH HAZARD	S			1997
I. Arute	Nora	1 Chronic	None		
*	None		e - Para ang para sa sa sa		n n n n n n n n n n n n n n n n n n n
Medical Conditions Generally					
Aggravated by Esposure		ailable informati	ion)		
Chemical Listed as Carcinogen or Potential Carcinogen	n Natio Progr	and Toxicology Yes C	IARC les E Monographs No E	OSHA Yes C	
-orgoney and		induce vomiting			
I. Inhelette	No		1.		
OF	lf solas	hed in eves flush	with water		
ENTRY Skun	No			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Ster Sales
4 Ingestion	1		No. and State		
SECTION 7 - SPECI	Induce v	ONS AND SPILLL			
	ALTRECAUTI	IONS AND SPILLEL	LAK PROCEDURES		
Pre-rautions to be Taken to Plandling and Storage	Avoid eye	e contact, will s	ting		
Diner Precautions					
Sec. She in			rine with iodide w	<u>vill burn if spil</u>	led in
Steps to be Taken in Case Millerial is Released or Spilled		pen wound.			
Allerial is Released or Spilled	Flush wit	th water to sewer	New and a series		ian nation The Conte rn
Wester Disposal Methada (Consult federal, stat					
Methada (Consult federal, stat	e, and local regulations	' Flush with wat	er to sewer		in the second
SECTION 8 - SPEC	CIAL PROTECT	TION INFORMATIO	ON/CONTROL MEAS	URES	
Respiratory Protection Specify Types	tions				
lione	Local Eshaust	Mochanical Convali	Special	Öther	Sugar Ca
Hone		Eve			and a second second
None State Protective	None	Frou	None		
arb/Hygunate Practices	None			· ·	
	Hash after		영화 정말 방송에서 가지 않는 것을 얻는 것 수밖에 많을 것을		



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ACC08305

PAGE 02 OF 04

FLASH POINT: NOT APPLICABLE

FIREFIGHTING MEDIA: DRY CHEMICAL OR CARBON DIOXIDE (1984 Emergency Response Guidebook, Dot p 5800.3).

FIREFIGHTING: NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING VAPORS OR DUSTS; KEEP UPWIND.

TOXICITY

• 2000 MG/KG DRAL-RAT LD50; 2300 MG/KG ORAL-RABBIT LD50; 56 MG/KG INTRAVENOUS-MOUSE LD50; 47 MG/KG INTRAVENOUS-RABBIT LD50; 1000 MG/KG ORAL-MOUSE LD50. MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS); CARCINOGEN STATUS: NONE. SODIUM (DI) ETHYLENEDIAMINE TETRA-ACETATE MAY CAUSE IRRITATION TO THE EYES SKIN AND MUCOUS MEMBRANES.

HEALTH EFFECTS AND FIRST AID

INHALATION: ACUTE EXPOSURE- NO DATA AVAILABLE. THIS MATERIAL MAY CAUSE IRRITATION OF TH MUCOUS MEMBRANES.

CHRONIC EXPOSURE- NONE REPORTED IN HUMANS. REPRODUCTIVE AND MUTAGENIC EFFECTS STUDIED IN ANIMALS - SEE REFERENCES UNDER TOXICITY SECTION.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

ACUTE EXPOSURE - MAY CAUSE SLIGHT IRRITATION.

CHRONIC EXPOSURE- MAY CAUSE IRRITATION.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECT: AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION.

EYE CONTACT:

ACUTE EXPOSURE- PARTICULATES IN THE EYE MAY CAUSE IRRITATION AND LACRIMATION.

CHRONIC EXPOSURE- NO DATA AVAILABLE.

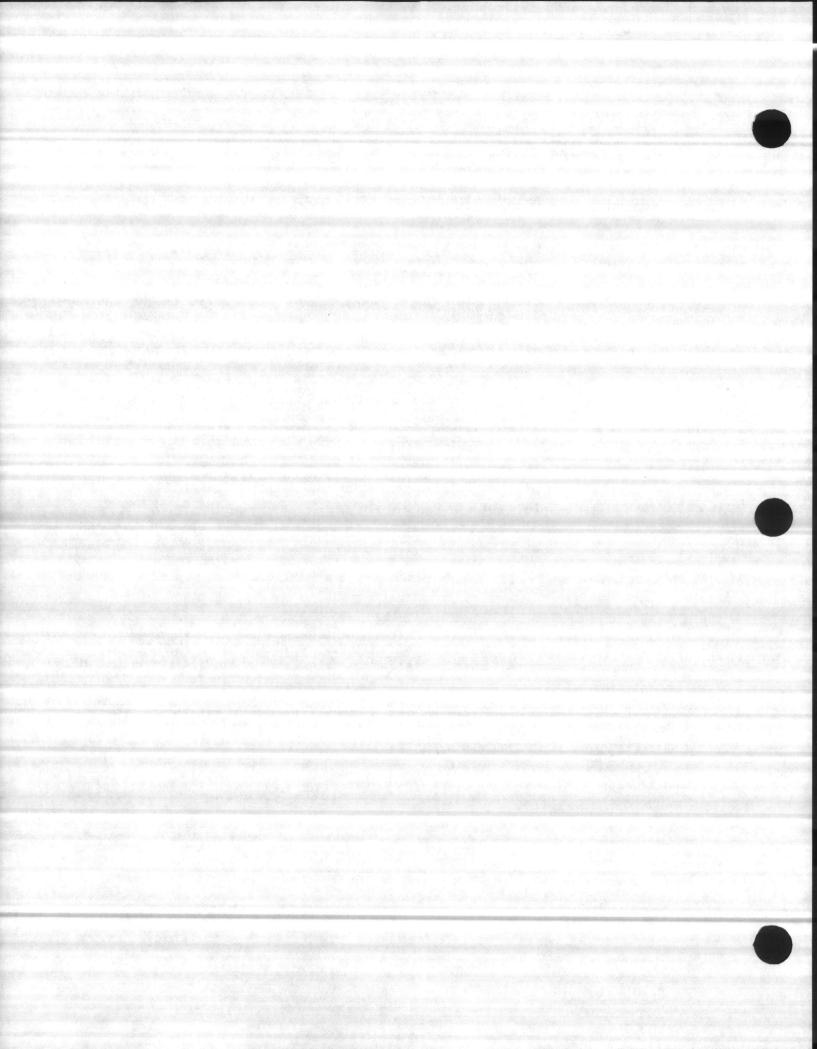
FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING THE UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 10-20 MINUTES). GET MEDICAL ATTENTION.







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ACC08305 PAGE 03 DF 04

INGESTION:

ACUTE EXPOSURE- IF THE CHEMICAL IS INGESTED IT CAUSES GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA. IT CAUSES HYPOCALCEMIC TETANY WITH SPONTANEOUS RECOVERY. THE AVERAGE LETHAL DOSE IN RATS IS GREATER THAN 2000 MG/KG.

FIRST AID- IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER, AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET MEDICAL ATTENTION IMMEDIATELY.

REACTIVITY
REACTIVITY: STABLE UNDER NORMAL PRESSURES UP TO THE MELTING POINT, 240 C, WHERE DECOMPO- SITION OCCURS.
INCOMPATIBILITIES: NONE KNOWN.
DECOMPOSITION: THERMAL DECOMPOSITION PRODUCTS MAY BE TOXIC OXIDES OF NITROGEN, CARBON MON- Oxide and Carboy Dioxide. Sodium oxide may be left as a Caustic Residue:
POLYMERIZATION
иййийийийийийийийийийийийийийийийийийи
AVOID TEMPERATURES IN THE VICINITY OF THE MELTING POINT, 240 C, WHERE DECOMPOSITION OCCURS.
AVOID CONTACT WITH OR STORAGE WITH INCOMPATIBLE MATERIALS, INCLUDING THOSE LISTED IN THE PLACTIVITY SECTION.
жиллийн амр LEAK PROCEDURES
OCCUPATIONAL SPILL: REMOVE ANY FLAMES OF HEAT. PROVIDE VENTILATION. SWEEP UP WITH A MINIMUM OF DUSTING AND COLLECT IN A SUITABLE (E.G. FIBER BOARD) CONTAINER.
PROTECTIVE EQUIPMENT
YEN: ILATION:

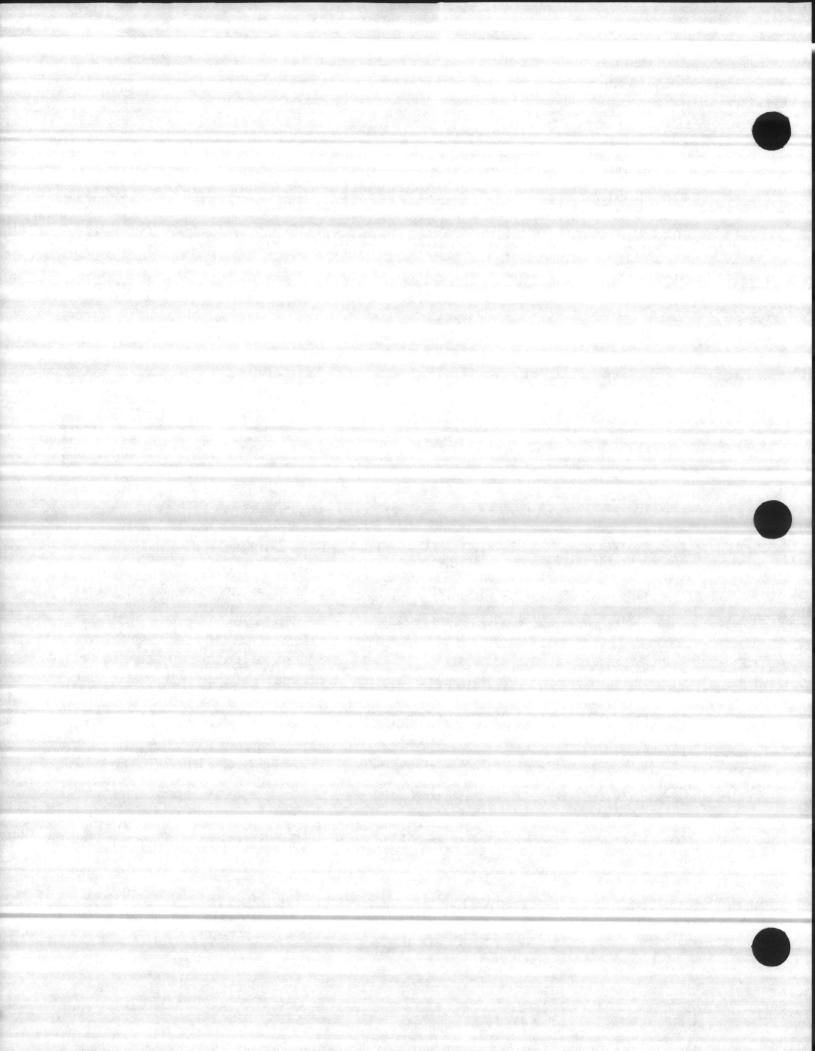
PROVIDE LOCAL EXHAUST OR GENERAL DILUTION VENTILATION SYSTEM.

PESPIRATOR:

HIGH LEVELS- DUST/MIST RESPIRATOR.

FIRE FIGHTING- SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE





FIREFIGHTING- SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND.OR OTHER POSITIVE PRESSURE MODE.

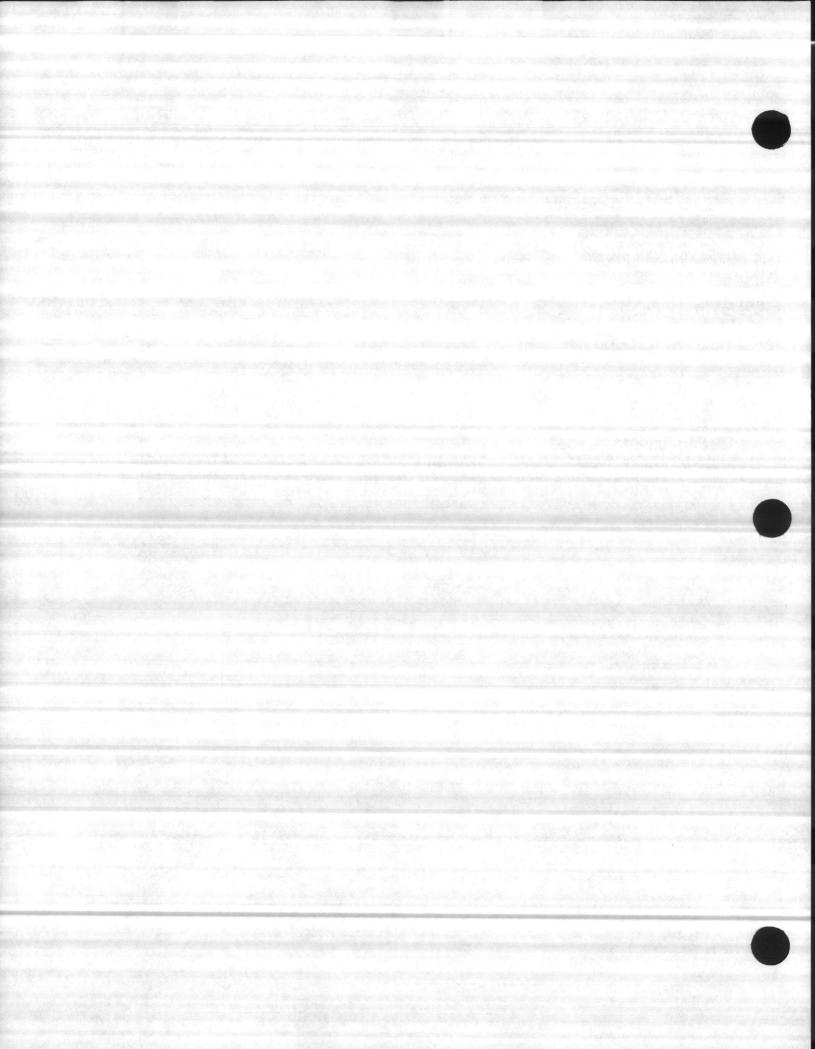
CLOTHING: EMPLOYEE MUST WEAR IMPERVIOUS CLOTHING AS NECESSARY TO AVOID REPEATED OR PROLONGED CONTACT WITH SUBSTANCE.

GLOVES: WEAR IMPERVIOUS GLOVES AS NECESSARY TO AVOID REPEATED OR PROLONGED CONTACT WITH FOWDER, MIST, OR SOLUTION. PREFERRED MATERIAL: RUBBER. EYE_PROTECTION:

EYE PROTECTION: WEAR VENTED SAFETY GOGGLES. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH CHEMICALS.

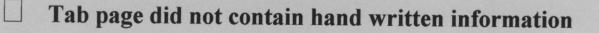
> CREATION DATE: 02/14/85 CIENTIFIC CROUP, INC. REVISION DATE: 02/14/85

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DESCRIPTION:

FLOOR FINISH



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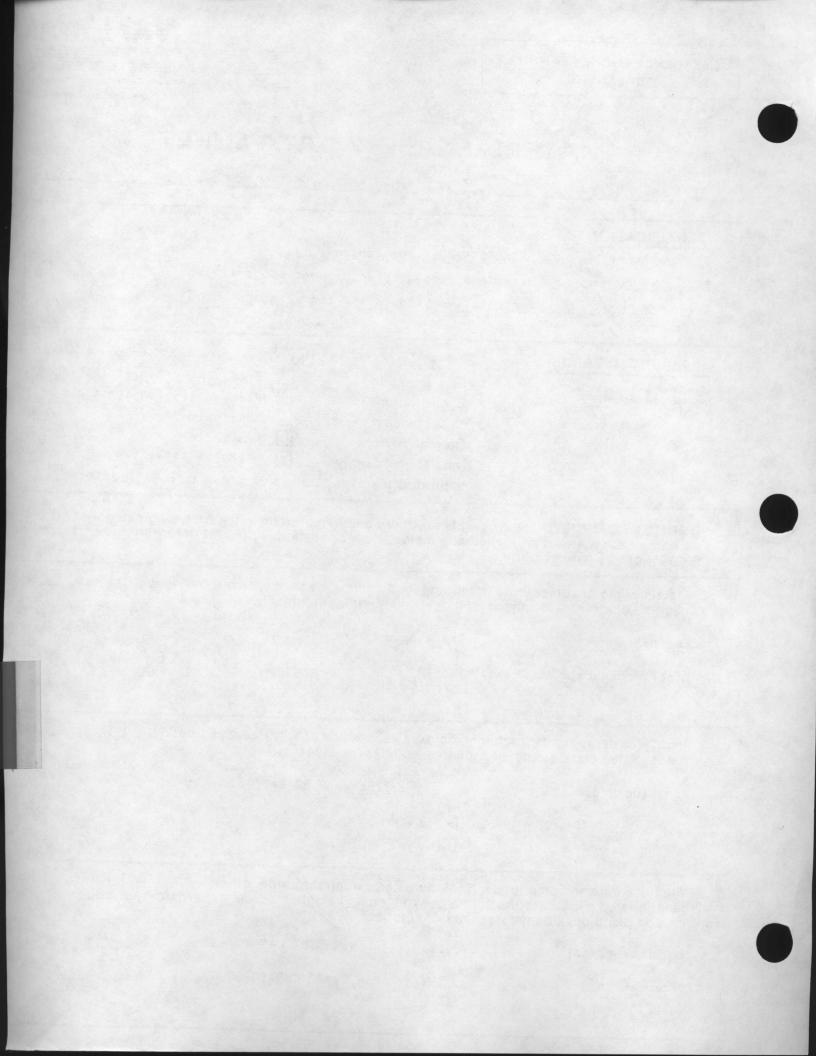
EMERGENCY PHONE - 24 HOURS (201)573-5700

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LABORATORIES Lenn & Fink Industrial Products Dayson of Sterling Drug Inc. Montvale, New Jersey 07645

MATERIAL SAFETY DATA SHEET

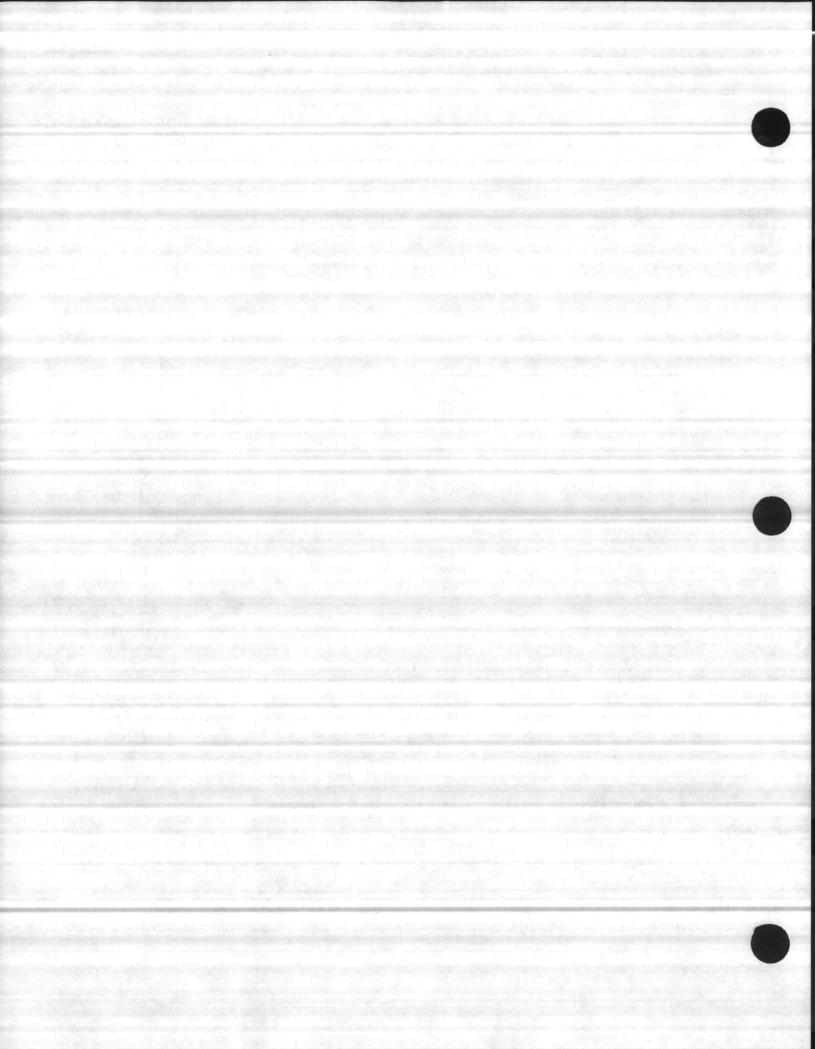
	IDENTIFICATION		
	1. Trade Name	METALIST* 20 Floor Finish	
	2. Generic Description	Water emulsion acrylic polymer floor finish	
	3. Intended Use *Trademark	For resilient floors and terrazzo	
11.	APPARENT HAZARDS	Ratings (See section "Guidelines and D	
	(See Salety and Health Information - Sections V. VI and VII)	1. Skin IrritationI Practically Non-Irritat2. Eye IrritationI Practically Non-Irritat3. Oral ToxicityI Non-Toxic	
		4. Dermal Toxicity INon-Toxic 5. Jobalation Toxicity I Not applicable	
		5. Inhalation Toxicity - Hot applicable 6. Is product a known strong skin sensitizer? Yes	X No
	1. Metals or metal compo cadium, chromium, n	pounds (Including lead, mercury, arsenic, silver, beryllium, 🔄 Yes nanganese, nickel, aluminum, lithium).	
	1. Metals or metal compo cadium, chromium, n	pounds (Including lead, mercury, arsenic, silver, beryllium, Yes nanganese, nickel, aluminum, lithium).	
	 than 10% of total component Metals or metal component Cadium, chromium, n Zinc Salts* *Zinc Carbonate, CA 2 Inorganic compound 	pounds (Including lead, mercury, arsenic, silver, beryllium, Yes nanganese, nickel, aluminum, lithium).	
	 than 10% of total components Metals or metal components cadium, chromium, n Zinc Salts* *Zinc Carbonate, CA Inorganic compound halogenated compound 	Tand whether a major or minor portion is present (initial ingrocion is present (initial ingrocion is present (initial ingrocion is position.) pounds (Including lead, mercury, arsenic, silver, beryllium, Yes nanganese, nickel, aluminum, lithium). Trace Amounts S# 3486-35-9 Its (Including acids, alkalis, silica or silicates, cyanides, Yes	
	 than 10% of total components Metals or metal components cadium, chromium, n Zinc Salts* *Zinc Carbonate, CA Inorganic compound halogenated compound 	I and whether a major or minor portion is present (initial ingrocion is present ingrocion is present ingrocion is present (
	 than 10% of total composition Metals or metal composition Cadium, chromium, n Zinc Salts* *Zinc Carbonate, CA Inorganic compound halogenated composition Armonium hydroxide Aliphatic carbon com halogenated hydroca 	I and whether a major or minor portion is present (inner ingrocionity option is present (inner ingrocionity option is present (inner ingrocionity option) pounds (Including lead, mercury, arsenic, silver, beryllium, Yes nanganese, nickel, aluminum, lithium).	
	 than 10% of total composition Metals or metal composition Cadium, chromium, n Zinc Salts* *Zinc Carbonate, CA Inorganic compound halogenated composition Armonium hydroxide Aliphatic carbon com halogenated hydroca carbon disulfide, ald 	I and whether a major or minor portion is present (minor myconomic osition.) pounds (Including lead, mercury, arsenic, silver, beryllium, I Yes nanganese, nickel, aluminum, lithium).	



-	5. Other materials of importance.	· 🖸 Yes	
	Polymer Emulsion		ry)
IV.	REACTIVITY DATA		
	1. Is material: Liquid 🗹 Solid 🗋 Gas 🗋 Paste 🖾 Powder 🖾 Aeroso		
	2. Is material flammable?	C Yes	
	3. Flash point and method used >200°F Tag Closed Cup		
	4. Is material explosive?	C Yes	
1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	5. Are volatile ingredients given off at room temperature?	C Yes	8 No
	6. Are volatile ingredients given off when heated during normal use? Heating is not normal to use	C Yes	Ø No
i e si di katapa	7. Is material known to react violently with other materials? If yes, explain.	C Yes	Ø No
	HANDLING, STORAGE, TRANSPORTATION, AND DISPOSAL REQUIREMENTS		

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VI. FIRST AID PROCEDURES

If contact with skin or eyes occurs, flush with plenty of water.

VII. SPECIAL PROTECTION INFORMATION

1. Ventilation

Not applicable

2. Respiratory Protection

Not applicable

3 Other Protective Measures

Not applicable

VIII. LABELING

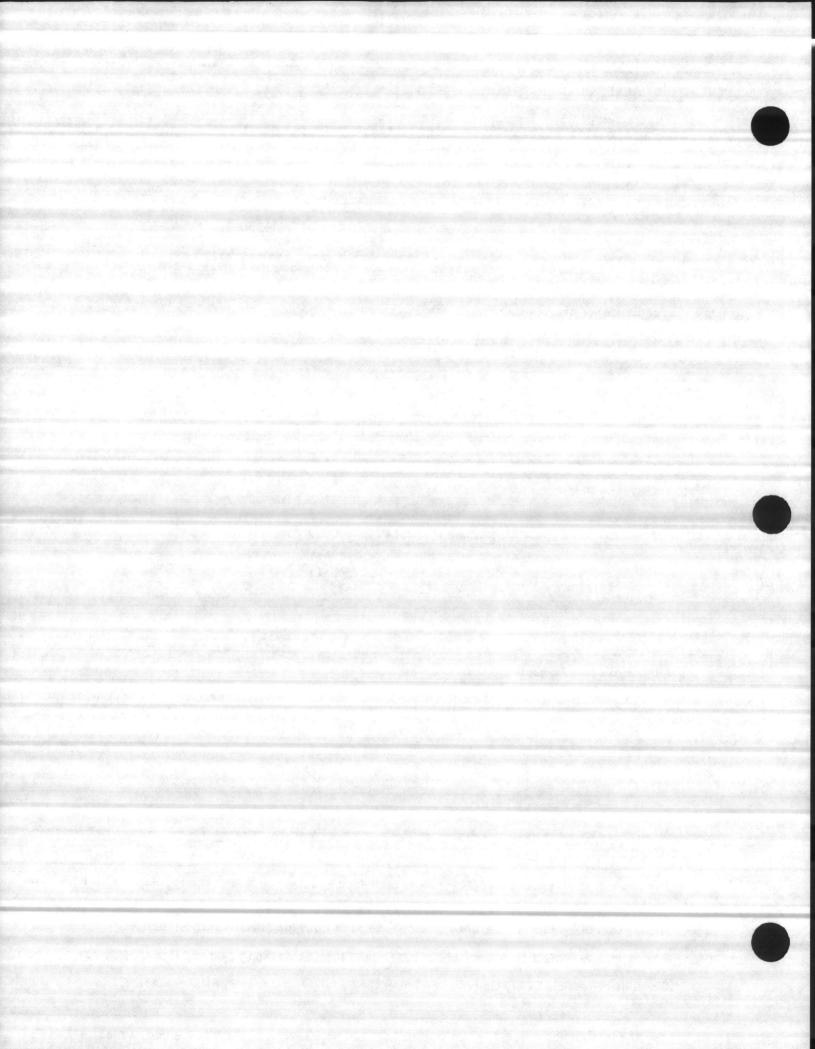
Where applicable, this product is labeled and packaged in accordance with the regulations of the following agencies

Department of Transportation, under the Federal Hazardous Materials Transportation Act.

Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act.

Consumer Products Safety Commission under the Federal Hazardous Substances Act.

The information herein is given in good faith but no warranty, express or implied, is made.



GUIDELINES AND DEFINITIONS

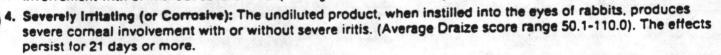


SKIN IRRITATION: Ratings corresponding to the following definitions are derived from data obtained from the test methods as described in the 16 CFR 1500.41 and/or NAS Publication 1138, and categories of toxicity as described in 16 CFR 1500.3.

- 1. Practically Non-Irritating: The undiluted product causes no noticeable irritation, or causes slight inflammation (edema and erythema skin reaction values of 0 or 1) of intact or abraded skin of rabbits during the study period. Primary Irritation Index of 0-1.9.
- 2. Moderately Irritating: The undiluted product causes well-defined inflammation (edema and erythema skin reaction values of 2) during the study period. Primary Irritation Index of 2-4.9.
- 3. Primary Skin Irritant: The undiluted product causes moderate to severe inflammation (edema and erythema skin reaction values of 3 or 4) of the intact or abraded skin of rabbits during the study period. Primary Irritation Index of 5 or more.
- Corrosive: The undiluted product causes visible destruction or irreversible alterations of the tissue structure at the site of contact on intact or abraded skin of rabbits during the study period.

EYE IRRITATION: Ratings corresponding to the following definitions are derived from data obtained from test methods described in the 16 CFR 1500.42 graded pursuant to the Draize Scale for scoring ocular lesions and temporal reversibility criteria as set forth in NAS Publication 1138.

- 1. Practically Non-Irritating: The undiluted product, when instilled into the eyes of rabbits, produces no noticeable irritation, or slight transient conjunctival irritation. (Average Draize score range 0.00-15.0).
- 2. Slightly Irritating: The undiluted product, when instilled into the eyes of rabbits, produces slight to moderate conjunctival irritation, slight corneal involvement, and/or slight iritis. (Average Draize score range 15.1-25.0). The effects clear within 7 days.
- 3. Moderately Irritating: The undiluted product, when instilled into the eyes of rabbits, produces moderate corneal involvement with or without severe iritis. (Average Draize score range 25.1-50.0). The effects clear within 21 days.



ORAL TOXICITY: Ratings corresponding to the following definitions are derived from data obtained from the test methods and categories of toxicity as described in 16 CFR 1500.3.

- 1. Non-Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₂) is greater than 5 grams per kilogram of body weight.
- Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD_m) is greater than 50 milligrams and less than or equal to 5 grams per kilogram of body weight.
- 3. Highly Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₂₀) is less than or equal to 50 milligrams per kilogram of body weight.

DERMAL TOXICITY: Ratings corresponding to the following definitions are derived from data obtained from the test methods as described in 16 CFR 1500.40, and categories of toxicity as described in 16 CFR 1500.3.

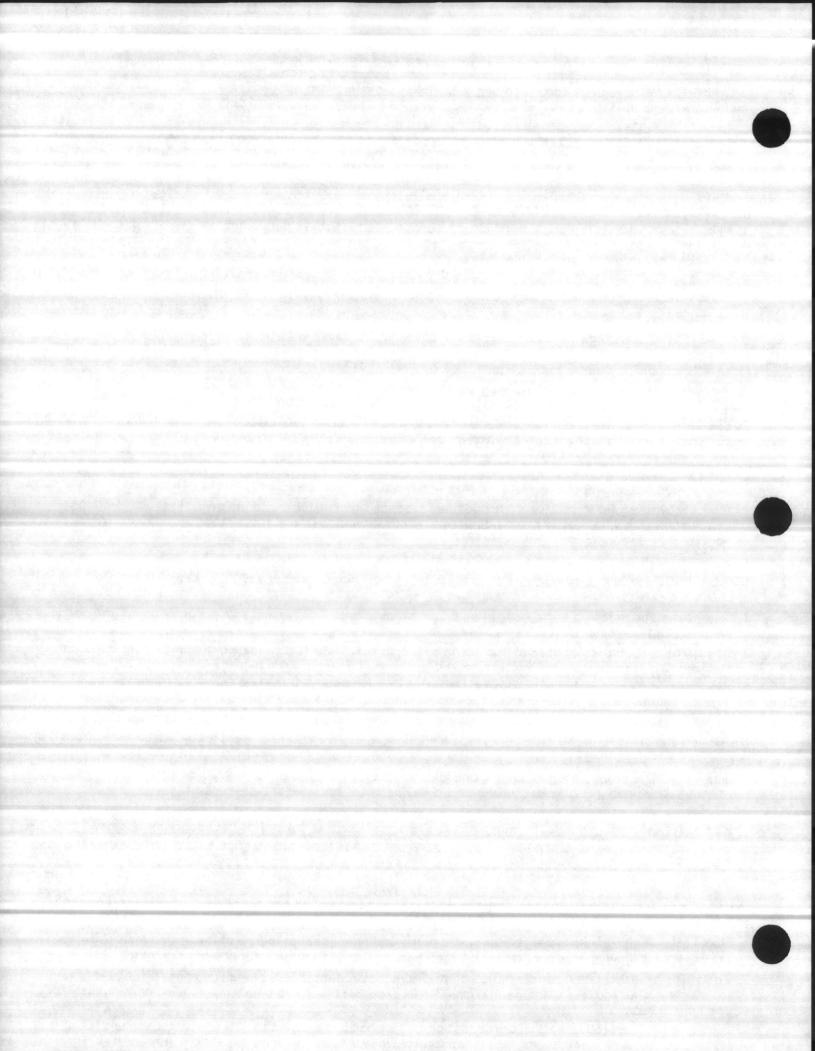
- 1. Non-Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD_w) is greater than 2 grams per kilogram of body weight.
- Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD_m) is greater than 200 milligrams and less than or equal to 2 grams per kilogram of body weight.
- 3. Highly Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD₂) is less than or equal to 200 milligrams per kilogram of body weight.

INHALATION TOXICITY: Ratings corresponding to the following definitions are derived from the test methods and categories of toxicity described in 16 CFR 1500.3.



1. Non-Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC_w) is greater than 200 milligrams per liter by volume when inhaled continuously for one hour or less.

- Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC_w) is greater than 2 milligrams and less than or equal to 200 milligrams per liter by volume when inhaled continuously for one hour or less.
- 3. Highly Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC_w) is less than or equal to 2 milligrams per liter by volume when inhaled continuously for one hour or less.



NATIONAL LABORATORIES

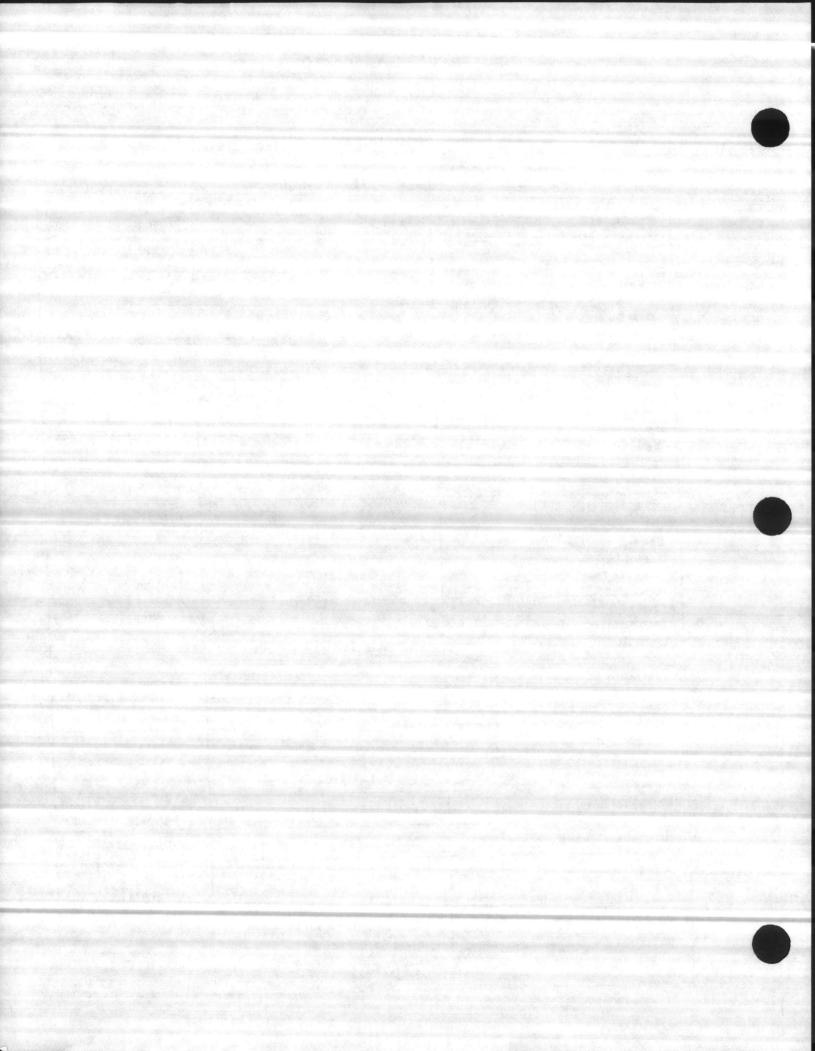
Metalist* 20 Floor Finish

PRODUCT DATA

CHARACTERISTIC	TEST METHOD	PHYSICAL PROPERTY TEST RESULT
Appearance		Thin, translucent liquit
Calor		Light tan
Odor		Acrylic
Total Solids, %	ASTM D-2834	20
pH	ASTM E-70	8.7
Specific Gravity @ 77° F		1.028
Weight/Gallon @ 77° F		8.57
Total Ash, %	ASTM D-1288	0.5 max
Free Oil, %	A State of the second sec	0
Freeze Thaw Stability	CSMA 60-68	Over 3 cycles
Coverage, sq ft/gal First Coat Second Coat		2000-2500 2500-3000
Leveling		Excellent
Gloss, %	ASTM D-1455	93
Film Clarity		Excellent
Water Spot Resistance	ASTM D-1793	Excellent
Detergent Resistance		Excellent
Powder Resistance @ 77" F, 40% RH	ASTM D 2048	Excellent
Metal Glide Adhesion (tackiness)	CSMA 156-65	Pass - no tack
Removability	ASTM D-1792	Excellent
Drying Time	Recoat Traffic	30 minutes After dry to touch
lip Resistance	ASTM D-2047 (James Machine- Static Coeff, Friction) CSMA (Topaka-, Dynamic Coeff, Friction)	>0.5 >0.2

* Trackensack

N-1276





Metalist 20

FLOOR PREPARATION

For best results, floor should be stripped of all old waxes and finishes before applying METALIST 20° Use NL° Wax Stripper or Clean Start° Non-Ammoniated wax stripper in hot water. Machine scrub with NL° Black Stripping Pad Pick up old waxes and finishes with wet vacuum pick-up. Rinse twice and allow to dry.

SEALING THE FLOOR

Most stripped floors are porous and allow the first coats of finish to penetrate or "dive" into the floor itself. When used alone, METALIST 20 should be applied as a fairly thick initial coat with a clean string mop and allowed to dry 45 minutes to an hour before applying "finish coats" of METALIST 20.

Old or very porous floors should be sealed with DURATION* Detergent Resistant Floor Seal. See directions on DURATION label.

APPLICATION OF METALIST 20 FLOOR FINISH

Use only clean, fresh laundered moos and clean buckets and wringers. Apply METALIST 20 Floor Finish by spreading thin and even coats with mop. Two coats over a sealed floor are recommended. The second coat may be applied ½ hour after the first finish coat appears dry Floor may be open to traffic immediately after drying.

MAINTENANCE

DUST MOP DAILY - Tracked-in sand and dirt destroy all floors and floor finishes very quickly. TRADEMARK

DAMP MOP THE FLOOR—METALIST 20 Floor Finish can be damp mopped or machine scrubbed with NL's quality disinfectants or detergents regularly WITHOUT HARMING THE FINISH

DRY BUFF-Scutts and traffic marks can easily be removed by buffing with floor pads or brushes. If a mirror shine is desired, buff with super polish pad or lamb s wool.

SPRAY-BUFF (Spray Bottle Method or Dispensing Tank Method) An excellent liquid spray-buff for use in a plastic spray bottle or in a floor machine with appropriate dispensing tanks can be made by mixing METALIST 20, water and NL* CONCENTRATE All Purpose Cleaner, Fill an NL* Trigger Sprayer with 10 oz. of METALIST 20 Add 1 oz. NL* CONCENTRATE and fill the bottle with water Mix well. Apply in a coarse spray.

For spray-bull dispensing tanks, use 10 parts water, 10 parts METALIST 20 and 1 part NL1 CONCENTRATE.

RECOATING – Additional coats of METALIST 20 may be applied to increase shine, slip resistance and protection. NEVER apply METALIST 20 on a dirty floor. Machine scrub, nnse, allow to dry and apply finish.

REMOVAL OF METALIST 20

METALIST 20 Floor Finish can easily and quickly be stripped Follow directions under FLOOR PREPARATION.

METALIST 20—is for all resilient floors: vinyl, asonalt tile, vinyl asbestos, rubber, linoleum and is excellent on terrazzo. Coverage is 2 CC0-2.500 square leet per gallon.



--

1. PREPARACION DEL PISO

Para meiores resultados, deben de quitarse completamente del piso los acabados y encerados vielos antes de ablicar METALIST 20.º Use quitacera NLº o quitacera sin amoniaco Clean Start: en agua caliente Restnegue a maguina con un colinete limpiador-desprendedor negro NLº Recoja el remanente de encerado y acabados vielos con una asorradora para liquidos. Enjuague dos veces y delese secar

2 SELLANDO EL PISO.

La mavoria de los pisos a los cuales se les ha duttado completamente los acabados vielos son porosos y permiten que las onmeras capas de acabado penetren o se "zambullan" en el piso mismo. Cuando se usa solo. METALIST 20 tiene que ser aplicado como una capa inicial relativamente gruese con un trapeador de cordel limpio y debe dejarse secar por 45 minutos o una hora antes de aplicar las capas de acabado de METALIST 20.

Los pisos vietos o muy porosos deben de ser sellados con el sellado para pisos resistente a detergentes DURATION* Vea la dirección en la etiqueta de DURATION*

3. APLICACION DEL ACABADO METALIST 20.

Utilice solamente trabeadores limbios y trescos y cubos y exprimidores limbios. Ablique el acabado para pisos METALIST 20 ablicando cabas linas y uniformes con el trabeador. Se recomiendan dos cabas sobre un piso sellado. Puede permitirse trafico sobre el piso tan pronto este seco 4. MANTENIMIENTO

OUITE EL POLVO DIARIAMENTE CON UN TRAPEADOR Trabeado humedo METALIST 20 puedo ser trabeado con agua restregado a maguina SIN ESTROPEAR EL ACABADO

METALIST 20 puede ser pulido en seco o como rocio. Para pulir en rocio mezcle 10 dartes de agua. 10 dartes de METALIST 20 y una barre de LIMPIADOR PARA TODOS LOS USOS NL' APLICACIÓN DE NUEVAS CAPAS—Nunca ablique Metalist 20 sobre

APEICACIÓN DE NUEVAS CAPAS - Núnca ablique Metalist 20 sobre un piso sucio Restriegue a maquina, enjuague, dele secar y ablique el acabado.

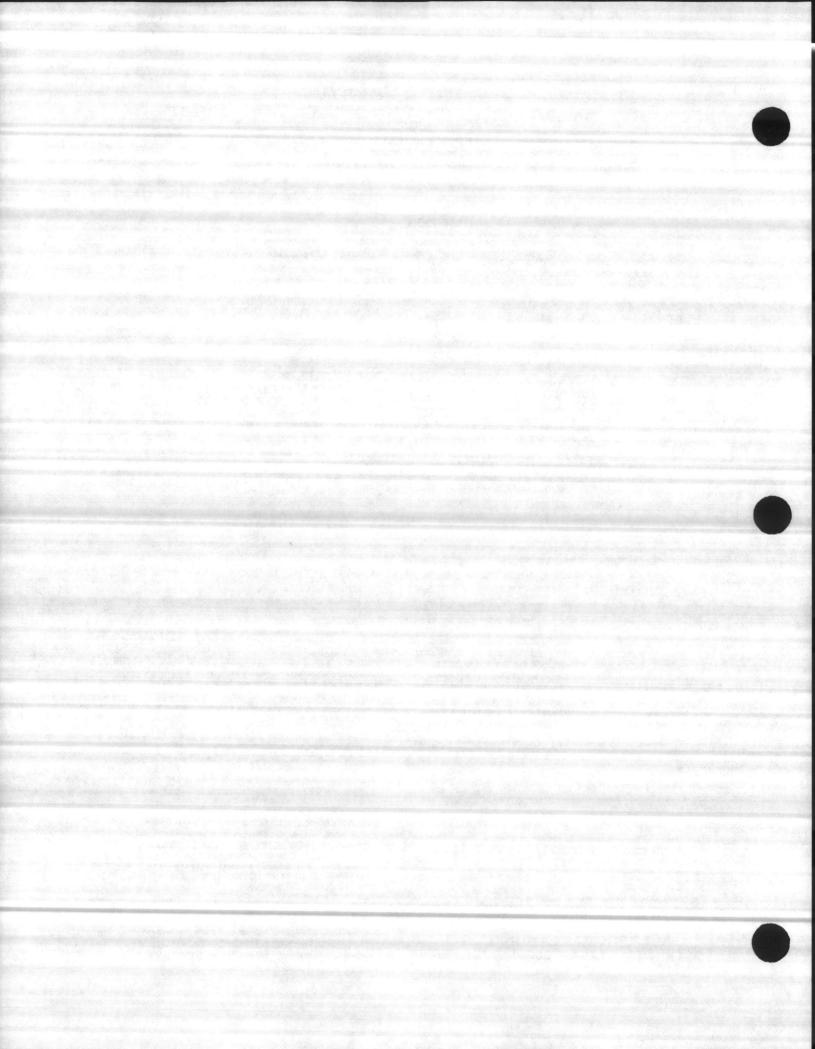
5. PARA QUITAR EL METALIST 20.

Siga las mismas direcciones que para preparación del piso

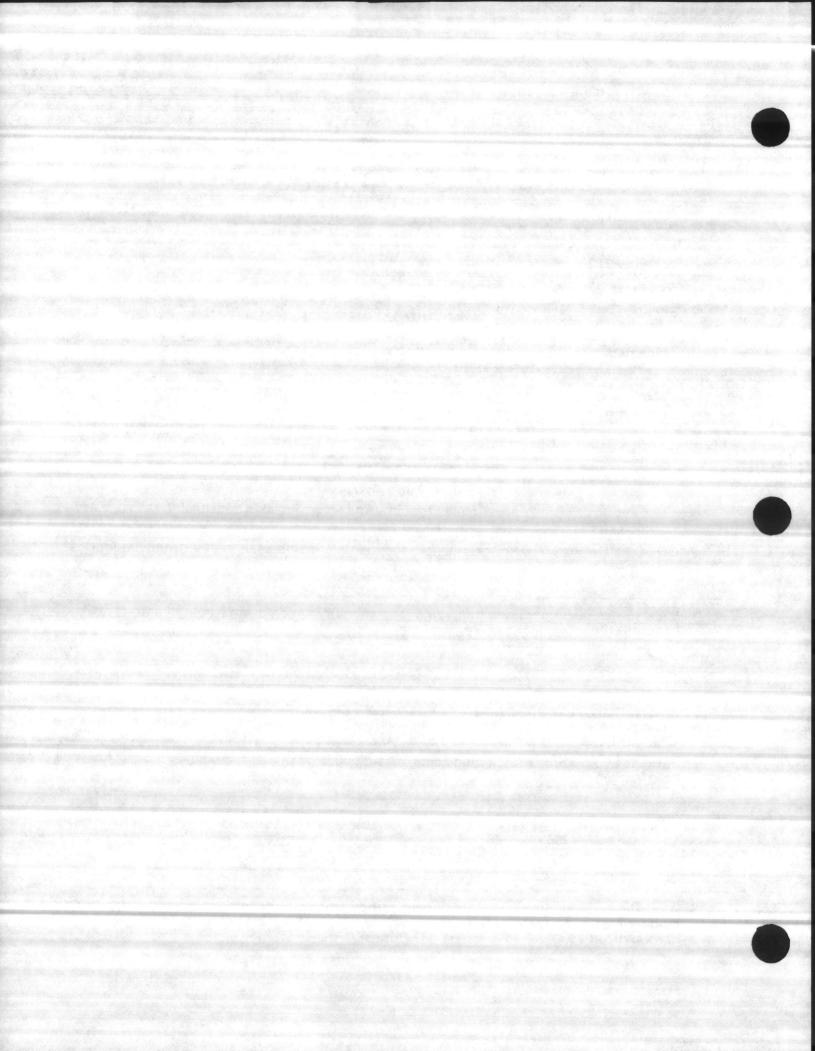
NO PERMITA QUE SE CONGELE-NUNCA ECHE ACABADO NO USADO DE NUEVO EN EL ENVASE ORIGINAL

Marca Registrada



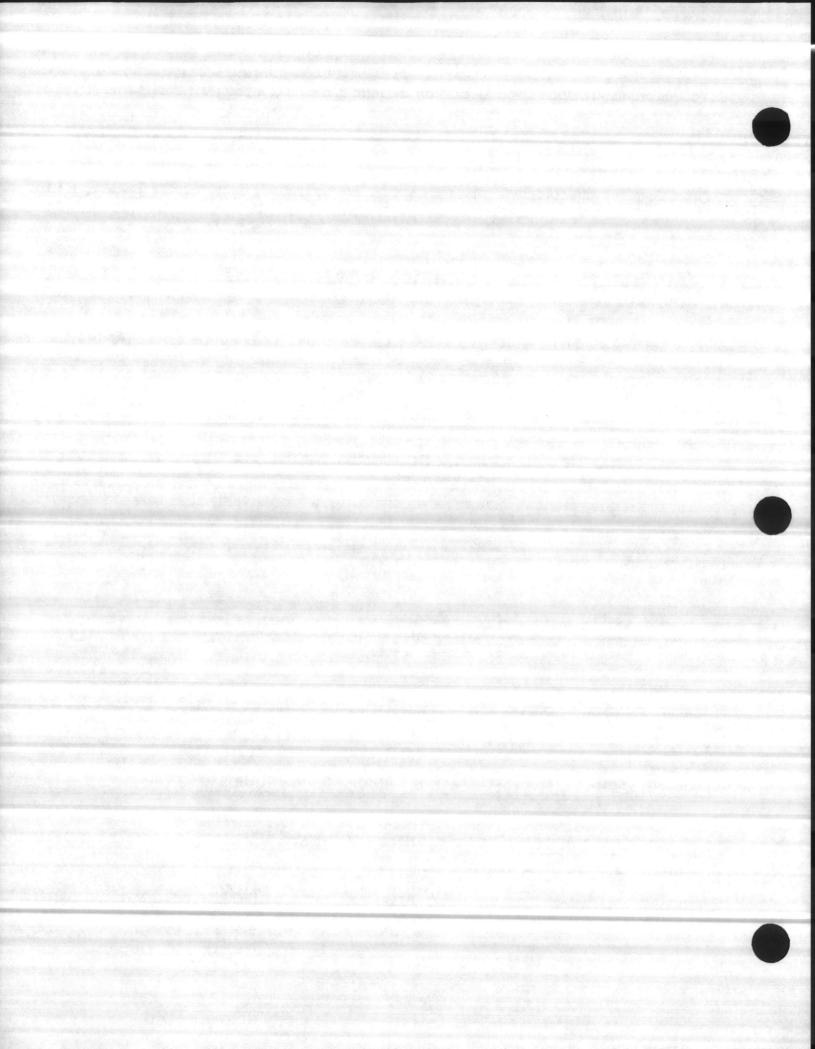


EMERGENCY PHONE - 24 HOURS (201)573-5700 Lenn & Fink Industrial Products Division of Sterling Drug Inc. Montvale. New Jersey 07645 MATERIAL SAFETY DATA SHEET Not Applicable December 1, 1986 Not Applicable One of issue IDENTIFICATION L HETALIST# SBR-2000* 1. Trade Name 2. Generic Description Spray Buff/Restorer 3. Intended Use For application on resilient tile, terrazzo and concrete **Trademark** (See section "Guidelines and Definitions") II. . APPARENT HAZARDS Ratings Practically Non-Irritating 1 1. Skin Irritation (See Safety and Health Information - Sections V. 1 Practically Von-Irritating 2. Eve Irritation VI and VII) 1 3. Oral Toxicity Von-Toxic Π Non-Toxic 4. Dermal Toxicity Not Applicable 5. Inhalation Toxicity X NC 6. Is product a known strong skin sensitizer? **Yes** III. PRODUCT COMPOSITION: Does this product contain materials in the following categories? 1. Metals or metal compounds (Including lead, mercury, arsenic, silver, beryllium, I Yes NC cadium, chromium, manganese, nickel, aluminum, lithium). Zinc* --- Trace Amount *Zinc in the form of Zinc Ammonium Carbonate (CAS #3486-35-9) × Yes Nc 2. Inorganic compounds (Including acids, alkalis, silica or silicates, cyanides, halogenated compounds, phosphates, sulfates, or asbestos.) Ammonium Hydroxide less than 0.1% (CAS # 1336-21-6) × Yes N 3. Aliphatic carbon compounds, (Including carbon tetrachloride, other halogenated hydrocarbons, formaldehyde, methyl alcohol, acrolein, peroxides, glycols, carbon disulfide, aldehydes, esters or ketones). Formaldehyde ---- less than 0.1% (CAS #50-00-0)



4. Volatile aromatic carbon compounds, aromatic nitro or amino compounds.		Yes	🗶 No
5. Other materials of importance.		Yes	× No
REACTIVITY DATA			
1. 1s material: Liquid 🖬 Solid 🗌 Gas 🗌 Paste 🗌 Powder 🗌		Aero	
2. Is material flammable?		Yes	No
3. Flash point and method used Greater Than 200°F Tag Closed Cup			
4. Is material explosive?		Yes	
5. Are volatile ingredients given off at room temperature?		Yes	
6. Are volatile ingredients given off when heated during normal use?		Yes	
7. Is material known to react violently with other materials? If yes, explain.		Yes	
HANDLING, STORAGE, TRANSPORTATION, AND DISPOSAL REQUIREMENTS			
HANDLING: Never pour unused material back into original container. STORAGE: Keep from freezing. TRANSPORTATION: There are no special DOT requirements. DISPOSAL: Dispose of in accordance with federal, state and local regulations.			
	 5. Other materials of importance. <u>REACTIVITY DATA</u> Is material: LiquidSolidGasPastePowder Is material flammable? Is material flammable? Flash point and method used Greater Than 200°F Tag Closed Cup 4. Is material explosive? 5. Are volatile ingredients given off at room temperature? 6. Are volatile ingredients given off when heated during normal use? 7. Is material known to react violently with other materials? If yes, explain. HANDLING, STORAGE, TRANSPORTATION, AND DISPOSAL REQUIREMENTS MANDLING: Keep from freezing.		

N-1322



VI. FIRST AID PROCEDURES



In accordance with good industrial hygiene practices, as with all chemicals in the workplace, if eye or skin contact occurs, flush with plenty of water.

VII. SPECIAL PROTECTION INFORMATION

1. Ventilation

Not applicable

2. Respiratory Protection

Not applicable

3. Other Protective Measures

As with all good industrial hygiene practices, appropriate measures should be exercised.

VIII. LABELING

Where applicable, this product is labeled and packaged in accordance with the regulations of the following agencies:

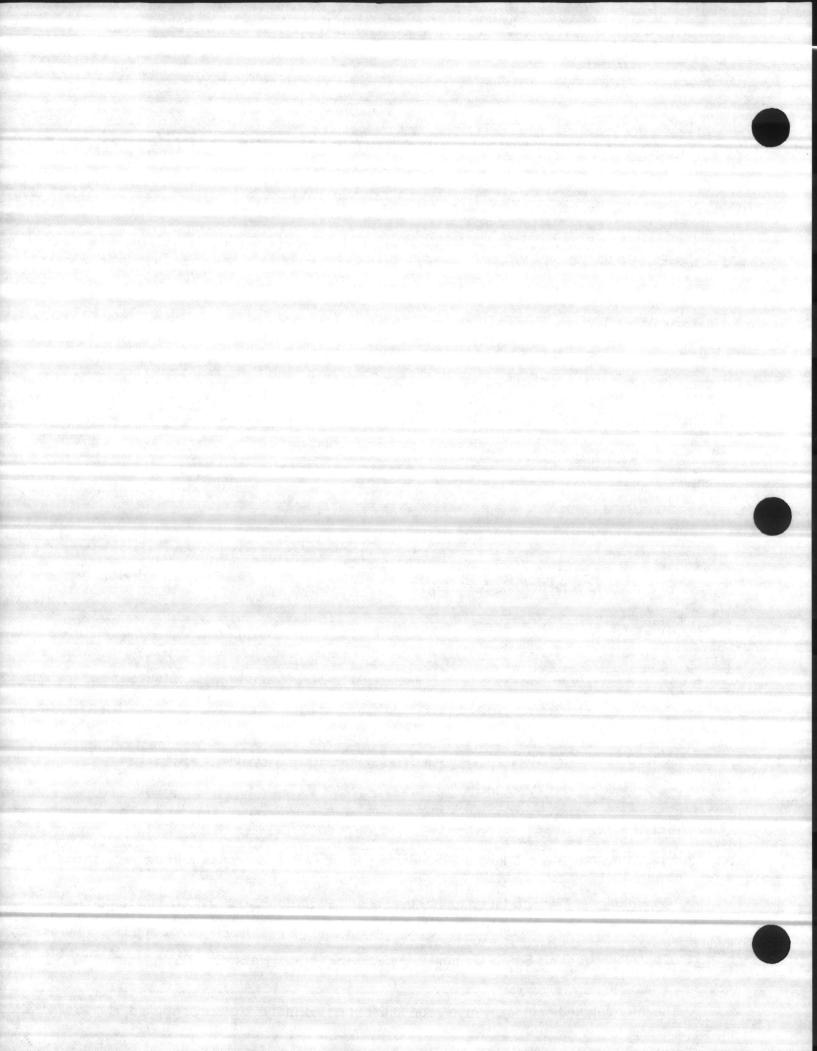
Department of Transportation, under the Federal Hazardous Materials Transportation Act.

Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act.

Y-1322

Consumer Products Safety Commission under the Federal Hazardous Substances Act.

The information herein is given in good faith but no warranty, express or implied, is made.



GUIDELINES AND DEFINITIONS



SKIN IRRITATION: Ratings corresponding to the following definitions are derived from data obtained from the methods as described in the 16 CFR 1500.41 and/or NAS Publication 1138, and categories of toxicity as described in 16 CFR 1500.3.

- 1. Practically Non-Irritating: The undiluted product causes no noticeable irritation, or causes slight inflammat (edema and erythema skin reaction values of 0 or 1) of intact or abraded skin of rabbits during the study pe Primary Irritation Index of 0-1.9.
- 2. Moderately Irritating: The undiluted product causes well-defined inflammation (edema and erythema skin reaction values of 2) during the study period. Primary Irritation Index of 2-4.9.
- 3. Primary Skin Irritant: The undiluted product causes moderate to severe inflammation (edema and erythema reaction values of 3 or 4) of the intact or abraded skin of rabbits during the study period. Primary Irritation Index of 5 or more.
- 4. Corrosive: The undiluted product causes visible destruction or irreversible alterations of the tissue structure the site of contact on intact or abraded skin of rabbits during the study period.

EYE IRRITATION: Ratings corresponding to the following definitions are derived from data obtained from test methods described in the 16 CFR 1500.42 graded pursuant to the Draize Scale for scoring ocular lesions and temporal reversibility criteria as set forth in NAS Publication 1138.

- Practically Non-Irritating: The undiluted product, when instilled into the eyes of rabbits, produces no noticeirritation, or slight transient conjunctival irritation. (Average Draize score range 0.00-15.0).
- Slightly Irritating: The undiluted product, when instilled into the eyes of rabbits, produces slight to moderate conjunctival irritation, slight corneal involvement, and/or slight iritis. (Average Draize score range 15.1-25.0) The effects clear within 7 days.
- 3. Moderately irritating: The undiluted product, when instilled into the eyes of rabbits, produces moderate come involvement with or without severe iritis. (Average Draize score range 25.1-50.0). The effects clear within 21 de
- 4. Severely irritating (or Corrosive): The undiluted product, when instilled into the eyes of rabbits, produces severe corneal involvement with or without severe iritis. (Average Draize score range 50.1-110.0). The effects persist for 21 days or more.

ORAL TOXICITY: Ratings corresponding to the following definitions are derived from data obtained from the te methods and categories of toxicity as described in 16 CFR 1500.3.

- 1. Non-Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingesti studies (LD₂₀) is greater than 5 grams per kilogram of body weight.
- 2. Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₂₀) is greater than 50 milligrams and less than or equal to 5 grams per kilogram of body weight.
- 3. Highly Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₁₀) is less than or equal to 50 milligrams per kilogram of body weight.

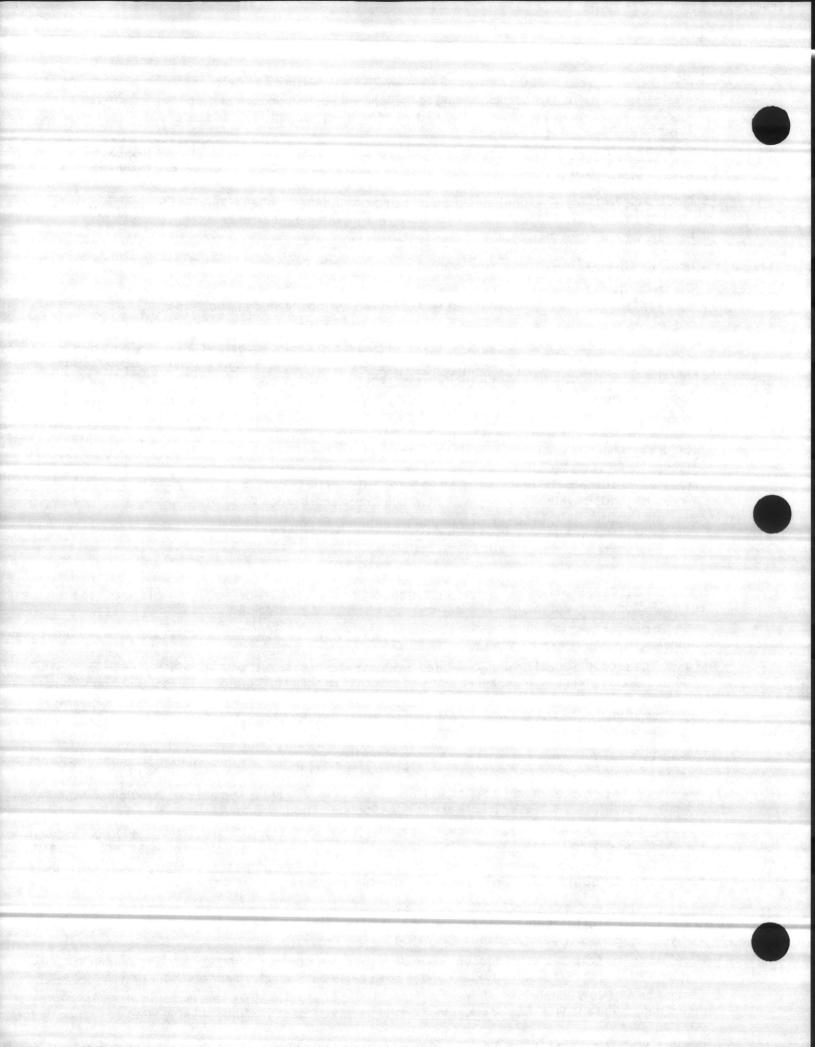
DERMAL TOXICITY: Ratings corresponding to the following definitions are derived from data obtained from the test methods as described in 16 CFR 1500.40, and categories of toxicity as described in 16 CFR 1500.3.

- 1. Non-Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD₂₀) is greater than 2 grams per kilogram of body weight.
- 2. Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxic studies (LD₂₀) is greater than 200 milligrams and less than or equal to 2 grams per kilogram of body weight.
- 3. Highly Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from derm toxicity studies (LD_{so}) is less than or equal to 200 milligrams per kilogram of body weight.



INHALATION TOXICITY: Ratings corresponding to the following definitions are derived from the test methods and categories of toxicity described in 16 CFR 1500.3.

- 1. Non-Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC₅₀) is greater than 200 milligrams per liter by volume when inhaled continuously for one hour or less.
- Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC₁₀) is greater than 2 milligrams and less than or equal to 200 milligrams per liter by volume when inhaled continuously for one hour or less.
- 3. Highly Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (I C.,) is

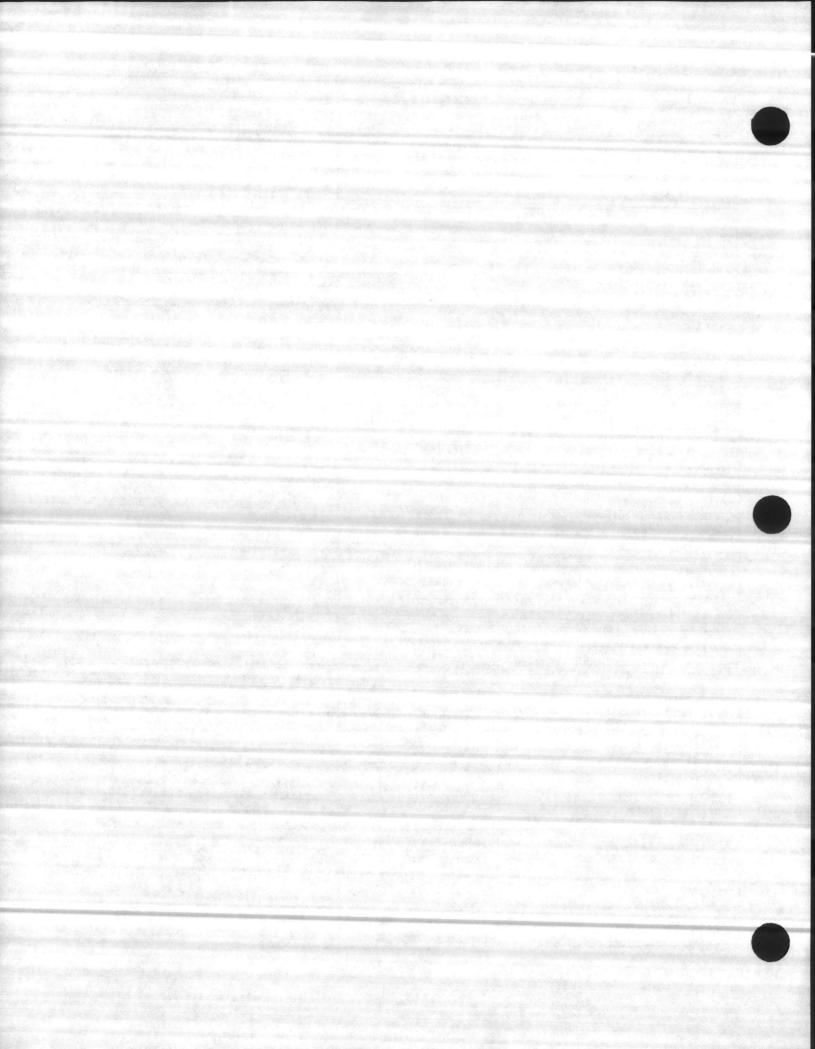


METALIST* SBR-2000*

PRODUCT DATA

CHARACTERISTIC	TEST METHOD	PHYSICAL PROPERTY/TEST RESULT
Appearance		Thin, Translucent Liquid
Color		Off White
Odar		Acrylic
Total Solids. %	ASTH 0-2834	10
Hc	ASTH E-70	8.0
Specific Gravity @77°F		1.018
Weight/Gallon @77°F	a and the second second second	8.48
Total Ash, 2		0.5 max.
Free Oil, t	· Martin	0
Coverage, sq ft/gl As a Spray Buff As a Restorer Diluted 1:1		20.000 - 30.000 2.500 - 3.000
Leveling		Excellent .
Gioss. t	ASTH D-1455	95
File Clarity		Excellent
Water Spot Resistance	ASTM D-1793	Excellent
Detergent Resistance		Excellent
Freeze Thaw Stability	CSMA 60-68	3 Cycles
Metal Glide Adhesion (tackiness)	CSMA 156-65	Pass - No Tack
Removability	ASTH 0-1792	Very Good
Drying Time	and the second	30 minutes after dry to touch
Slip Resistance	ASTM D-2047 (James Macnine-Static Coeff. Friction) CSMA Topaka- Dynamic Coeff.Friction)	>0.5 >0.2
Flash Point	ASTM D-S6 Tag Closed	> 200°F

+TH





DIRECTIONS FOR SPRAY BUFFING USE UNDILUTED

For optimum results using SBR 2000 as either a spray buff or restorer, provide a base of FINISHING TOUCH," METALIST" or METALIST" 20. For high-speed burnishing we recommend METALIST" 20.

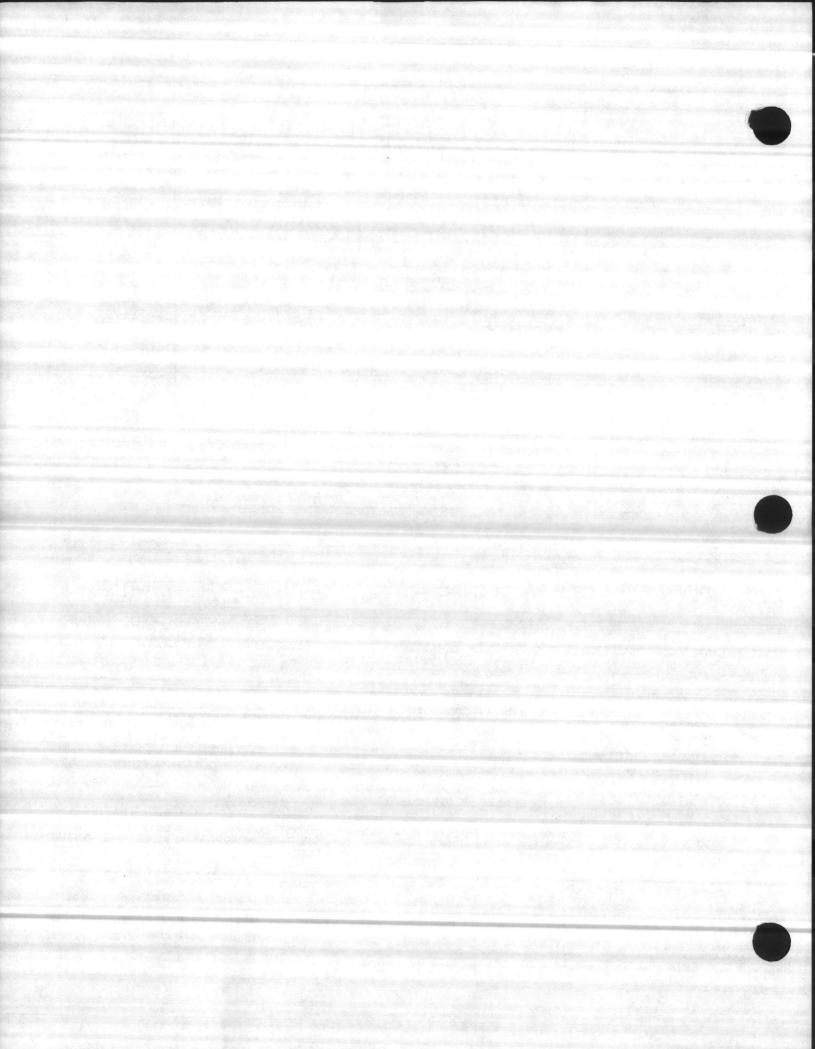
- 1. Sweep or vacuum the floor. Remove all labels, trash and gum.
- 2. Fill an NL[®] Trigger Sprayer with SBR 2000. DO NOT DILUTE.
- 3. Spray a light even spray over a 2' x 6' area. It is not necessary to cover the area with spray.
- 4. Clean and shine using up to a 1000 RPM machine and NL[®] RED PAD. Buff up to a high/clean shine. For removal of ground-in dirt and scuffs, use an NL[®] BLUE SCRUBBING PAD.
- 5. Do not over wet. Clean a small area at a time.
- 6. Reverse pads often to achieve optimum gloss.

DIRECTIONS FOR RESTORATION DILUTE 50:50

Floor finish restorers provide an easy method of gloss enhancement to a base of Metalist^{**} 20 Floor Finish.

- 1. Sweep or vacuum the floor. Remove all labels, trash and gum.
- 2. Thoroughly clean the floor using CONPACT⁹-PREMEASURED CLEANER, NL⁹ CONCENTRATE or LYSOL⁹BRAND DEODORIZING CLEANER. Follow label directions for specific soil conditions.
- 3. Dilute SBR 2000 50:50 with water in a clean bucket for mop-on restoration (one gallon of use solution covers approximately 2500-3000 square feet).
- Using a clean mop, apply the solution as you would a traditional finish.
- 5. Allow the SBR 2000 coat to completely dry before burnishing.
- 6. Dry burnish the floor using a 1000 to 2000 RPM burnisher.
- 7. Maintain the floor with daily cleaning and burnishing as required by traffic conditions.

KEEP FROM FREEZING NEVER POUR UNUSED SOLUTION BACK INTO ORIGINAL CONTAINER



DESCRIPTION:

FLOOR SEAL



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EMERGENCY PHONE - 24 HOURS (201)573-5700

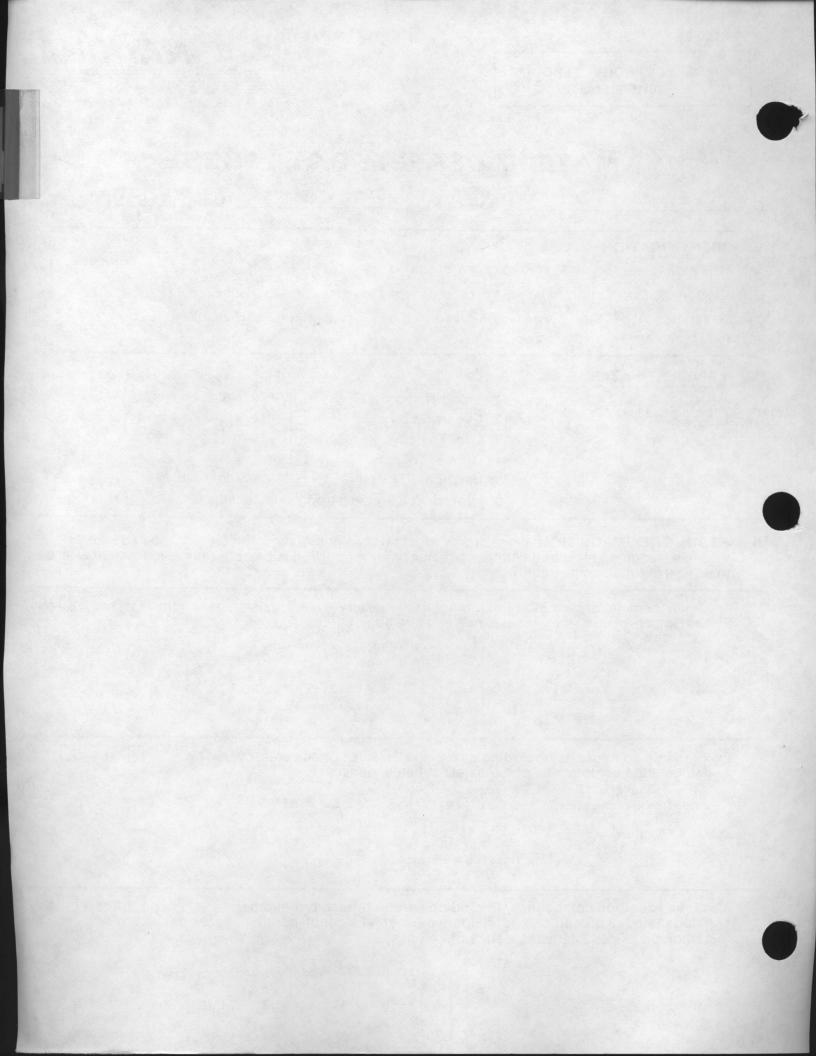
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Lehn & Fink Industrial Products Division of Sterling Drug Inc. Montvale, New Jersey 07645

MATERIAL SAFETY DATA SHEET

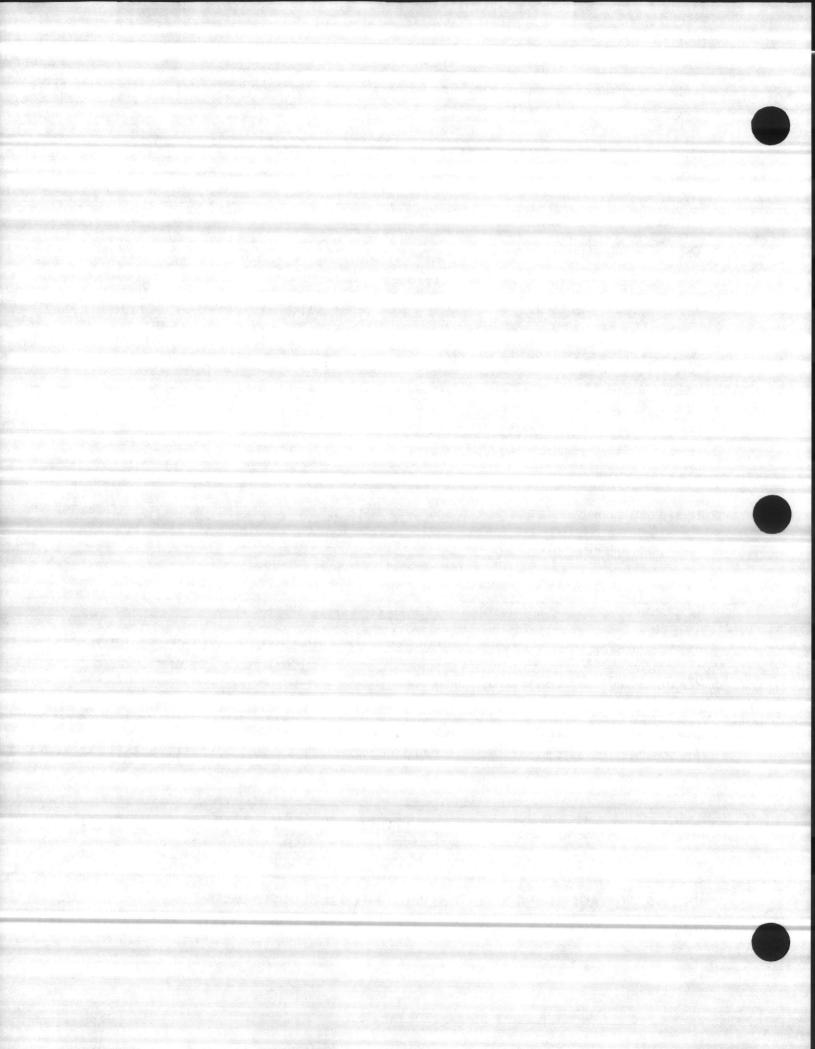
IDENTIFICATION		
1. Trade Name	COMPETITIVE EDGE* FLOOR SEAL	
2. Generic Description	Water-based polymer floor sealer and undercoater	
 Intended Use *Trademark 	For application on resilient tile, terrazzo and concrete	
APPARENT HAZARDS	Ratings (See section "Guidelines and De	finitions")
(See Safety and Health Information - Sections V. VI and VII)	 Skin Irritation Eye Irritation Fractically Non-Irritation Practically Non-Irritation Oral Toxicity Non-Toxic Dermal Toxicity Non-Toxic Inhalation Toxicity Not applicable Is product a known strong skin sensitizer? 	ng
 PRODUCT COMPOSITI yes, name each material than 10% of total compo	ION: Does this product contain materials in the following categories and whether a major or minor portion is present (minor ingredients osition.)	? If -less
1. Metals or metal comp cadium, chromium, m	bounds (Including lead, mercury, arsenic, silver, beryllium, 🛛 Yes hanganese, nickel, aluminum, lithium).	No
Zinc*	Trace Amounts	
*Zinc in the form of	of Zinc Carbonate, CAS#3486-35-9	
	s (Including acids, alkalis, silica or silicates, cyanides, Xes nds, phosphates, sulfates, or asbestos.)	
 halogenated compou		
halogenated compou Ammonium Hydroxide 3. Aliphatic carbon com	nds, phosphates, sulfates, or asbestos.) less than 0.5% CAS#1336-21-6 pounds, (Including carbon tetrachloride, other	
 halogenated compou Ammonium Hydroxide 3. Aliphatic carbon com halogenated hydroca carbon disulfide, alde 	nds, phosphates, sulfates, or asbestos.) less than 0.5% CAS#1336-21-6 apounds, (Including carbon tetrachloride, other Yes rbons, formaldehyde, methyl alcohol, acrolein, peroxides, glycols, ehydes, esters or ketones).	
 halogenated compou Ammonium Hydroxide 3. Aliphatic carbon com halogenated hydroca carbon disulfide, alde 	nds, phosphates, sulfates, or asbestos.) less than 0.5% CAS#1336-21-6 pounds, (Including carbon tetrachloride, other Yes rbons, formaldehyde, methyl alcohol, acrolein, peroxides, glycols,	□ No



4.	Volatile aromatic carbon compound	s, aromatic nitro or	amino compounds
----	-----------------------------------	----------------------	-----------------

CI Yes IN No

	5. Other materials of importance. Styrene/Acrylic Polymer Emulsion less than 35.0% CAS#*	Ø	Yes		No
	Polyethylene Wax Emulsion				
	*The CAS Numbers of these blends are proprietary				
v .	REACTIVITY DATA				
	1. Is material: Liquid 🖾 Solid 🗆 Gas 🗆 Paste 🗆 Powder 🗆 Aerosol 🗆				
	2. Is material flammable?		Yes	Ø	N
	3. Flash point and method used > 200°F Tag Closed Cup (ASTM Method D-56)				
	4. Is material explosive?		Yes	8	N
	5. Are volatile ingredients given off at room temperature? Ammonia	۵	Yes		N
	6. Are volatile ingredients given off when heated during normal use? Heating is not normal to use.		Yes	2	N
			Yes	2	N
	7. Is material known to react violently with other materials? If yes, explain.				



VI. FIRST AID PROCEDURES

If eye or skin contact occurs, flush with plenty of water.

VII. SPECIAL PROTECTION INFORMATION

1 Ventilation

Not applicable

2. Respiratory Protection

Not applicable .

3 Other Protective Measures

Not applicable

VIII. LABELING

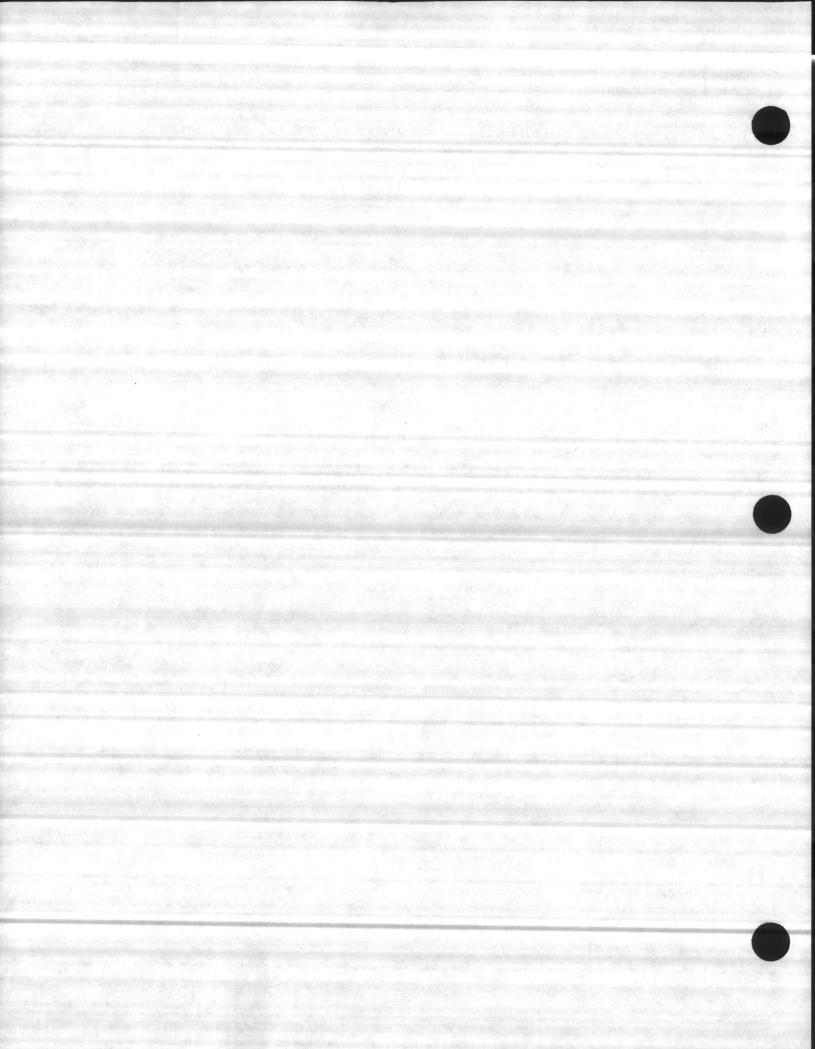
Where applicable, this product is labeled and packaged in accordance with the regulations of the following agencies

Department of Transportation, under the Federal Hazardous Materials Transportation Act

Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act

Consumer Products Safety Commission under the Federal Hazardous Substances Act.

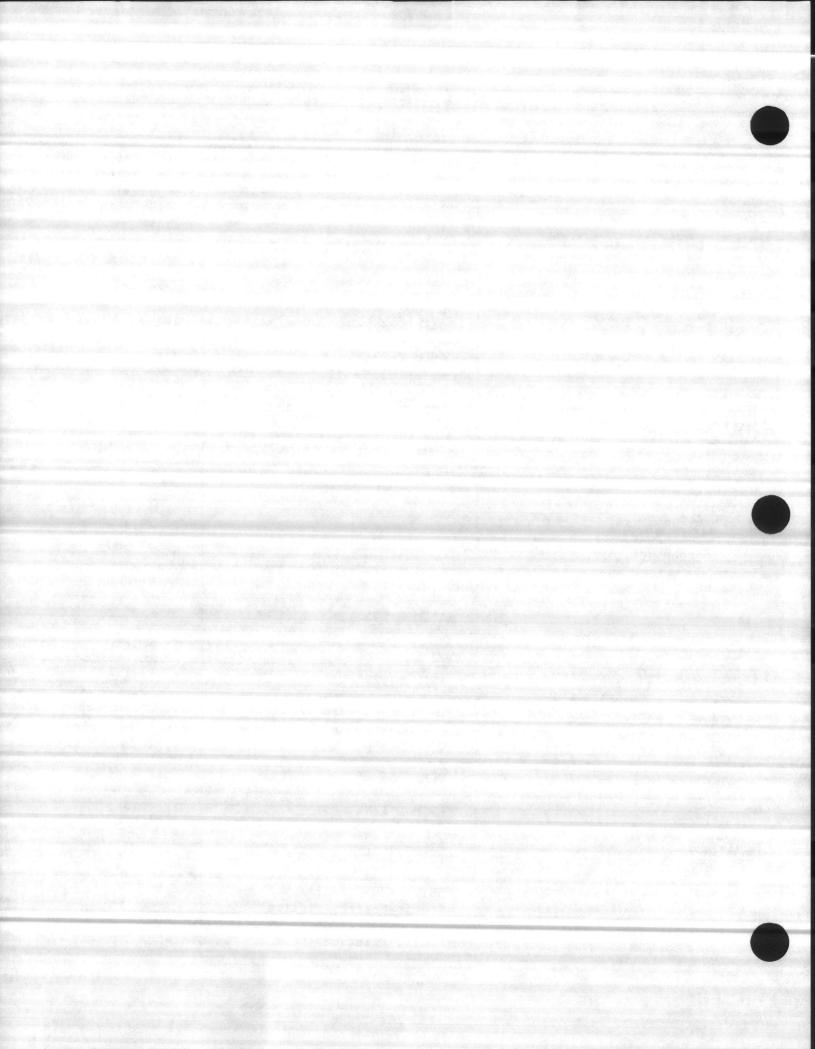
The information herein is given in good faith but no warranty, express or implied, is made.



Competitive Edge Floor Seal

PRODUCT DATA

CHARACTERISTIC	TEST METHOD	PHYSICAL PROPERTY TEST RESULT
Appearance		Thin, cranslucent
Color		Off white
Odor		Acrylic
Total Solids, %	ASTM D-2834	16
ρH	ASTM E-70	8.7
Specific Gravity @ 77°F	and the second	1.023
Weight/Gallon @ 77°F	and the second second second second	8.53
Total Ash, %	ASTM D-1288	0.5 max
Free Oil, %		0
overage, sq ft/gal First Coat Second Coat		1500-2500 2000-3000
Leveling		Excellent
Gloss, %	ASTM D-1455	94
Film Clarity		Excellent
Water Spot Resistance	ASTM D-1793	Excellent
Detergent Resistance		Excellent
Freeze Thaw Stability	CSMA 60-68	Over 3 cycles
Metal Glide Adhesion (tackiness)	CSMA 156-65	Pass - no tack
Removability	ASTM D-1792	Excellent
Drying Time	Recoat Traffic	30 minutes After dry to touch
Slip Resistance	ASTM D-2047 (James Machine- Static Coeff. Friction) CSMA (Topaka-Dynamic Coeff. Friction)	> 0.5 > 0.2



GUIDELINES AND DEFINITIONS



SKIN IRRITATION: Ratings corresponding to the following definitions are derived from data obtained from the test methods as described in the 16 CFR 1500.41 and categories of toxicity as described in 16 CFR 1500.3.

- 1. Practically Non-Irritating: The undiluted product may cause mild or slight inflammation (edema and erythema skin reaction values of 0 or 1) of intact and abraded skin of rabbits following immediate, prolonged, or repeated contact during the study period. Primary Irritation Index of 0-1.9.
- 2. Irritant: The undiluted product caused inflammation (edema and erythema skin reaction values of primarily 1 and/or 2) of intact or abraded skin of rabbits following immediate, prolonged or repeated contact during the study period. Primary Irritation Index of 2-4.
- 3. Primary Skin Irritant: The undiluted product causes moderate to severe inflammation (edema and erythema skin reaction values of primarily 3 and/or 4) upon immediate, prolonged or repeated contact with the intact or abraded skin of rabbits. Primary Irritation Index of 5 or more.
- 4. Corrosive: The undiluted product causes visible destruction or irreversible alterations of the tissue structure at the site of contact on intact or abraded skin of rabbits following immediate prolonged or repeated contact.

EYE IRRITATION: Ratings corresponding to the following definitions are derived from data obtained from test methods described in the 16 CFR 1500.42 and according to the Draize Scale for scoring ocular lesions obtained from, "Appraisals of the Safety of Chemicals in Food, Drugs, and Cosmetics," pp. 49-51, 1959.

- 1. Slightly Irritating: The undiluted product, when instilled into the eyes of rabbits, produces no noticeable irritation, or slight conjunctival irritation. (Average Draize score range 0.00-15.0).
- Mildly irritating: The undiluted product, when instilled into the eyes of rabbits, produces mild to moderate conjunctival irritation, mild corneal involvement with or without mild iritis. (Average Draize score range 15.1 – 25.0).
- 3. Moderately Irritating: The undiluted product, when instilled into the eyes of rabbits, produces moderate corneal involvement with or without severe iritis. (Average Draize score range 25.1-50.0).
- 4. Strongly Irritating: The undiluted product, when instilled into the eyes of rabbits, produces severe corneal involvement with or without severe iritis. (Average Draize score range 50.1-110.0)

ORAL TOXICITY: Ratings corresponding to the following definitions are derived from data obtained from the test methods as described in the 16 CFR 1500.40 and categories of toxicity as described in 16 CFR 1500.3.

- 1. Non-Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₃₀) is greater than 5 grams per kilogram of body weight.
- 2. Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₃₀) is greater than 50 milligrams and less than or equal to 5 grams per kilogram of body weight.
- 3. Highly Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from ingestion studies (LD₉₀) is greater than or equal to 50 milligrams per kilogram of body weight.

DERMAL TOXICITY: Ratings corresponding to the following definition are derived from data obtained from the test methods as described in 16 CFR 1500.40 and categories of toxicity as described in 16 CFR 1500.3.

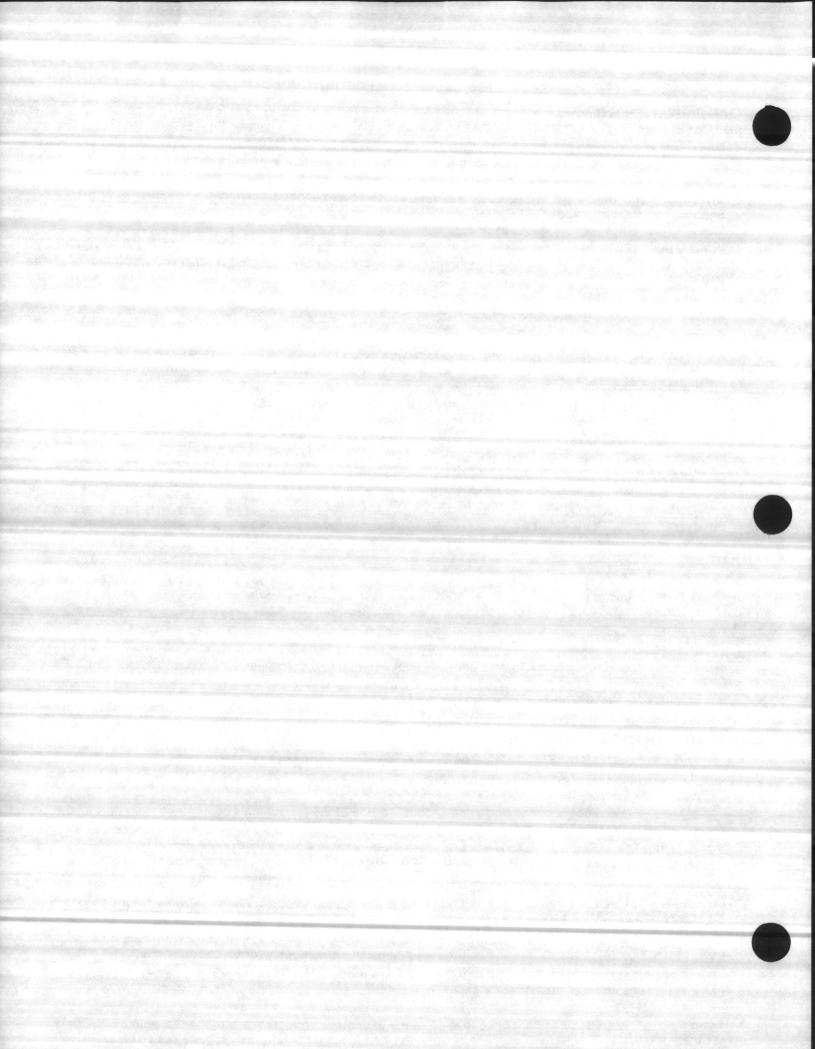
- 1. Non-Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD₃₀) is greater than 2 grams per kilogram of body weight.
- 2. Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD_{w}) is greater than 200 milligrams and less than or equal to 2 grams per kilogram of body weight.
- 3. Highly Toxic: The probable lethal dose of undiluted product to 50% of the test animals determined from dermal toxicity studies (LD₁₀) is greater than or equal to 200 milligrams per kilogram of body weight



INHALATION TOXICITY: Ratings corresponding to the following definitions are derived from the categories of toxicity described in 16 CFR 1500.3.

- 1. Non-Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC₅₀) is greater than 200 milligrams per liter by volume when inhaled continuously for one hour or less.
- 2. Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC₁₀) is greater than 2 milligrams and less than or equal to 200 milligrams per liter by volume when inhaled continuously for one hour or less.
- 3. Highly Toxic: The probable lethal concentration of the undiluted product to 50% of the test animals (LC_w) is less than or equal to 2 milligrams per liter by volume when inhaled continuously for one hour or less.





A durable, nonflammable seal that can be machine scrubbed with strong detergents without being removed. Competitive Edge" Floor Seal is designed for use as a base coat for floor polishes on vinyl asbestos, pure vinyl, asphalt, finoleum, other resilient tile floors and terrazzo. As an undercoat for floor finishes, Competitive Edge Floor Seal provides a smooth, durable base, fills and smooths the surface, enhancing the beauty and durability of the polish applied as the finish coat. Competitive Edge Floor Seal helps restore color and gives new tile to drab, worn floors. It is also an economical temporary sealer for concrete to reduce dusting and increase wear.

Do not pour unused material back into original container. KEEP FROM FREEZING.

Competitive Edge

4500.000

FLOOR SEAL

-Enhances Floor Colors

- -Increases Gloss
- -Improves Durability
- -Nonflammable

NET CONTENTS: 1 GALLON (128 FL. OZ.) UNIVERNE PRODUCTS DISOULTER PRODUCTS LABORATORIES 225 Burmmit Avenue + Montvale + NJ + 07845

UNECTIONS

Floor Preparation—Floor must be stripped thoroughly before application of Competitive Edge" Floor Seal. Use 80 oz. (10 cups) of Competitive Edge Stripper in 3 gallons of hot water. Machine strip with stripping pad. Rinse twice thoroughly, using a clean mop and clean bucket, applying generous amounts of clean, warm water. DO NOT FLOOD. Dry thoroughly.

Application — Apply Competitive Edge Floor Seal with a clean mop. Apply thin coat with mop wrung as though damp mopping the floor. If desirable, a second coat can be applied % flour after the first coat appears dry.

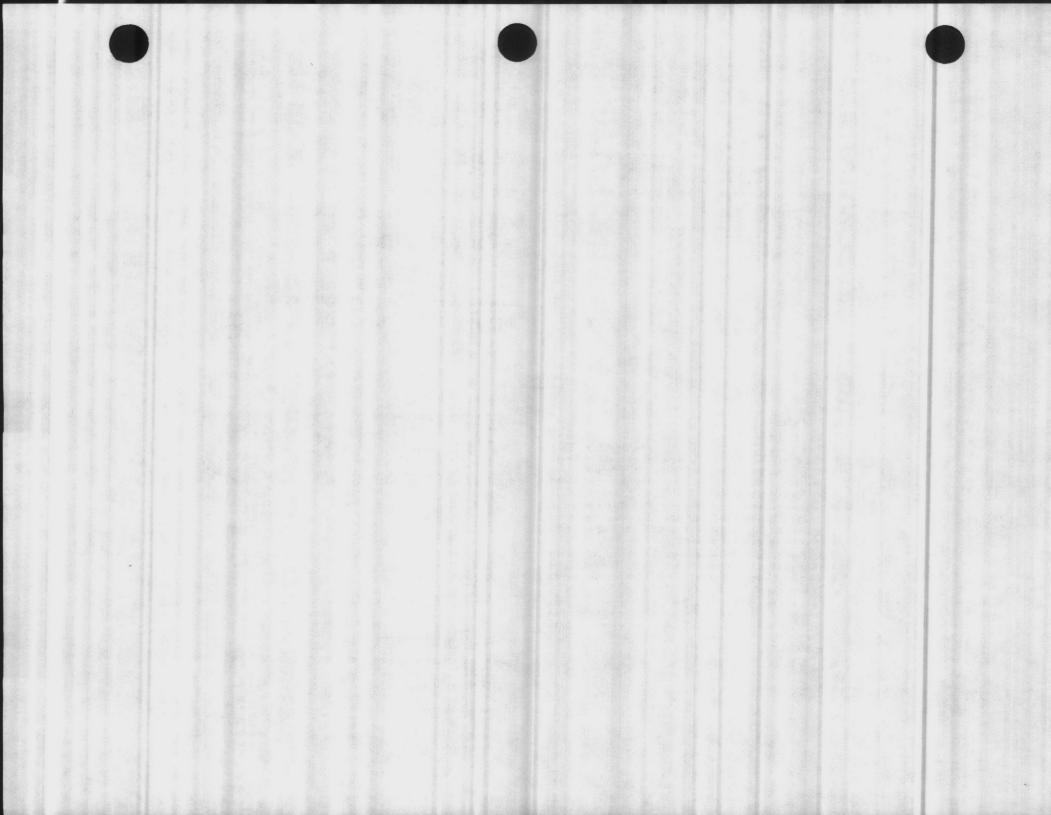
Floor Finish Application—Finish can be applied ½ hour after the Competitive Edge Floor Seal appears dry. The use of Competitive Edge Floor Seal makes floor finish application fast and easy and extends the coverage of the finish.

Nernoval—Competitive Edge Floor Seal is a semipermanent floor seal and will not be removed by ordinary maintenance procedures. Competitive Edge Floor Seal can be removed by the same procedure as outlined above in the section on "Floor Preparation". Competitive Edge

FLOOR SEAL

- -Enhances Floor Colors
- -Increases Gloss
- -Improves Durability
- -Nonflammable

NET CONTENTS: 1 GALLON (128 FL. OZ.) UTING TALE LABORATORIES AB8562 225 Burninit Avenue • Monivele • NJ • 07645



DESCRIPTION:

Flouride, Sodium



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U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I MANUFACTURER'S NAME NU-TECH CHEMICAL INDUSTRIES, INC. ADOREGS NUBBER STATE Patterson Ave., W. Paterson, NJ

EMERGENCY TELEPHONE NO. 201-256-8744

07424

Form Approved

OMB No. 44-R1387

CHEMISAL NAME AND SYNAM

CHEMICAL FATTERNIC Fluoride

FORMULA

N.

PAINTS, PRESERVATIVES, & SOLVENTS	. %	TLV (Units)	ALLOYS AND METALLIC COATINGS	×	TLV
PIGMENTS	NA	NA	BASE METAL		(Units
CATALYST	NA	NA	ALLOYS	NA NA	NA NA
VEHICLE	NA	NA	METALLIC COATINGS		
SOLVENTS (NA	NA	FILLER METAL	NA NA	NA NA
ADDITIVES	NA	NIA	PLUS COATING OR CORE FLUX	NA	AM
OTHERS		NA		NA	NA'
HATADDOUG			and the second	NA	NA
HAZARDOUS MIXTURE	SOFO	THER LIC	UIDS, SOLIDS, OR GASES	1 %	TLV (Units)

SODIUM FLUORIDE

OSHA standard for exposure to inorganic fluorides under 29CFR 1900.1000 Table Z-1 states the maximum TWA expsoure permissable is $2.5 \text{mg}(f)/\text{M}^3$ (in air)

	SECT	TION III - P	PHYSICAL DATA	
BOILING POINT (°F.)		1	SPECIFIC GRAVITY (H20=1)	
VAPOR PRESSURE (mm Hg.)	т			2.78
VAPOR DENSITY (AIR=1)	<u>الـ</u>	T G. 01	PERCENT, VOLATILE BY VOLUME (%)	Nil
		NA	EVAPORATION RATE	Nil
SOLUBILITY IN WATER		4% @ 0°C		
APPEARANCE AND ODOR				992°C
	white sc	olid, gra	anular or powder, odorless	1

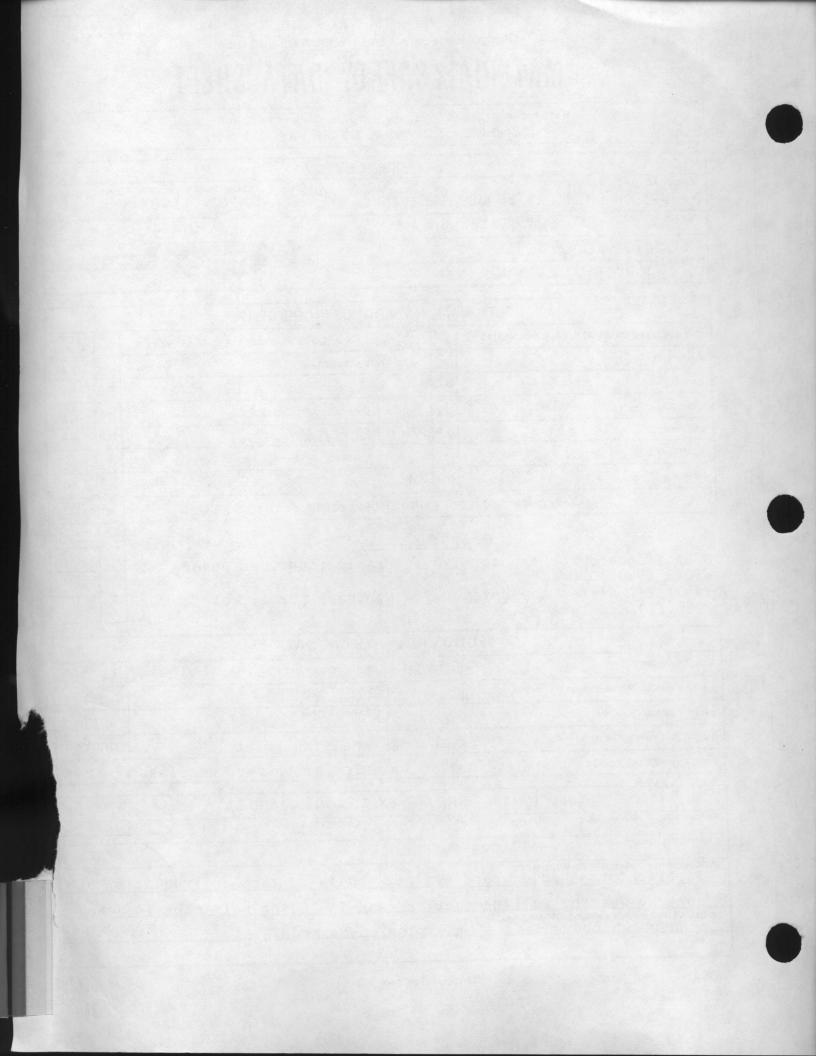
SE	CTION IV - FIRE AND EX	PLOSION HAZAED DAT	^	
(Method used)	None	FLAMMABLE LIMITS	Lei	Uei
EXTINGUISHING MEDIA	Will not burn	1	1	
SPECIAL FIRE FIGHTING PROC Firefighters Bh	ould guard against	bodily contact or	inhalat.	ion of
LINUSUAL FLOR	Ini protective ge	ar including colf.	-containe	d 'breat
No known unus	al fire or explosi	on hazards.	apr	paratus.

PAGE (1)

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2.5m

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SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 2.5mg(f)/m³ as per 290FR 1900.1000 Table 2-1

Can cause irritation and in extreme cases, burns to skin, eyes, and mucous membranes. May be toxic by inhalation or ingestion.

Inhalation: remove to fresh air; if any discomfort persists, immediat

obtain medical attention. Skin: Wash with plenty of soap and water Eyes: flush with copius amounts of water; seek medical attention.

STABILITY	UNSTABLE	2. 4. 1	CONDITIONS TO AVOID	
INCOMPATABILITY	STABLE	. X	Avoid contacts with acids.	n de la constante de la constant
TOX	ic/corrosi	ve H-F	is produced	
HAZARDOUS DECO	1C/COTTOSI MPOSITION PROD	ve H-F oucts	is produced upon contact with ac	cids.
HAZARDOUS DECO	MAY OCC	Hyd	is produced upon contact with a rogen Fluoride	cids.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in case material is released or spilled Shovel up spill, place in properly marked container for reuse or Container should be of polymer construction as material disposal.

may corrode glass or steel.

WASTE DISPOSAL METHOD Landfill in accordance with all applicable local, state, and

federal regulations.

RESPIRATORY P Suita	SECTION VIII - SPECIAL ROTECTION (Specify type) able NIOSH approved dust		
VENTILATION	LOCAL EXHAUST	mask req	uired.
TENTIERITON	As needed to control	duct	SPECIAL
	As needed to control	dust	OTHER
rubber or	neoprene ve equipment pron, coveralls as neede	EVE PROTEC	proof safety goggles

SECTION IX - SPECIAL PRECAUTIONS

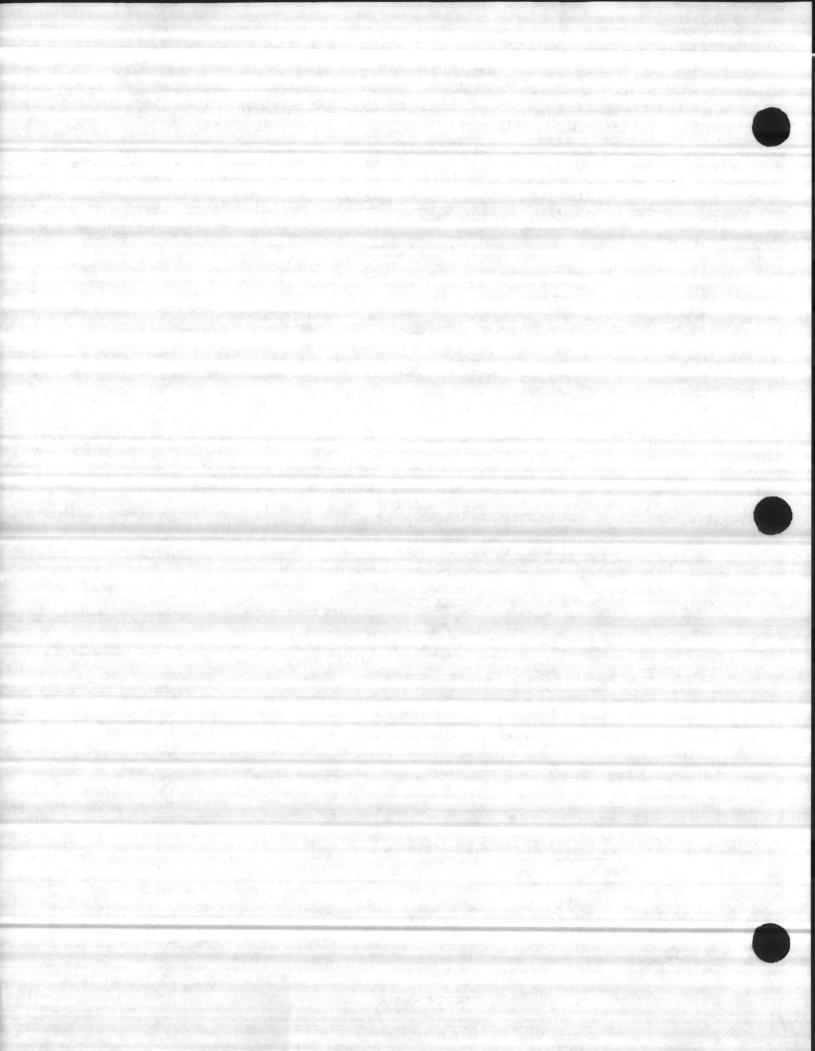
PRMAYHYAIN Edou houseReeping. Store in cool dry area in accordance

with standard industrial practice. OTHER PRECAUTIONS

Keep container closed when not in use. Avoid all bodily contact, particularly inhalation of dust.

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Form OSHA-20 Rev. May 72



DESCRIPTION:

Flouride, 2 ppm StandARZing Solution

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	ORION	RESEARCH INC	CORPO	FLUORIDE FSCO: RATED	15-411	
MA		L SAFETY				MO
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to we to the state	ng shattere a	I. PRODUCT IDENTIF	CATION	Carl American Ing	and the second	
PRODUCT N	AME	DAL COLATALOG NO	04-09-00	ELEPHONE NO:	164-5400	
CHEMICAL N	AME: Acid, So	e, CDTA, Acetic dium Acetate CI	HEMICAL	FAMILY: Inorga		
SYNONYMS:	NaF, CH.C	OOH, NaCH_COOH				
and the second		the set of the set of the	EDIENTO	and the state of the	WE STOLL .	
		M. HAZARDOUS INGR	EDIENTS"			
	MATER	RIAL	*	TLV (UNITS)	LD 50	,
Sodium F			00005	None Listed		
Acetic Ac			0.7	TWA 25mg/m ³	3310mg/kg	•
Sodium Ac		- A.L	2.8	None Listed	oral-rat 3530 mg/kg	
CDTA: LAC	etic Acid. (1					
CDTA: (Ac trilo) Te	etic Acid, (1 atral	,2-Cyclohexylenedi	n1 0.2	None Listed	Ipr-Mouse 150mg/kg	
CDTA: (Ac trilo) Te	tral	MISHYSICAL DA	n1 0.2	None Listed		
BOILING POINT	760 mm Hg	100°C	10.2 ĴA		150mg/kg	
	760 mm Hg	TIT HYSICAL DA	TACON CONTRACTOR	EEZING POINT: 2 0 POR PRESSURE @	150mg/kg	
BOILING POINT	760 mm Hg	TIT HYSICAL DA	FR VA SO	EEZING POINT: 2 0 POR PRESSURE @	150mg/kg	
BOILING POINT SPECIFIC GRAV	,760 mm Hg ITY (H,O = 1)	★ 100°c 1 2 5.5	TA SO	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @	150mg/kg	
BOILING POINT SPECIFIC GRAV	760 mm Hg ITY (H,O = 1) IY WT.	100°C	FR VA SO IN EV/	EEZING POINT: 2 0 POR PRESSURE @	150mg/kg .8 ^o c NA	
BOILING POINT SPECIFIC GRAV pH @ 25 °C VOLATILES, % E	760 mm Hg $TTY (H_{2}O = 1)$ BY WT. T(AIR = 1)	► 100°C 1 2 5.5 NA	FR VA SO IN EV/ (BU	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @ APORATION RATE TYL ACETATE = 1)	150mg/kg .8 ^o c NA	
BOILING POINT SPECIFIC GRAV pH @ 25 °C VOLATILES, % E	760 mm Hg $TTY (H_{2}O = 1)$ BY WT. T(AIR = 1)	► 100°C 1 2 5.5 NA	FR VA SO IN EV/ (BU	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @ APORATION RATE TYL ACETATE = 1)	150mg/kg .8 ^o c NA	
BOILING POINT SPECIFIC GRAV pH @ 25 °C VOLATILES, % E	760 mm Hg $TTY (H_{2}O = 1)$ BY WT. T(AIR = 1)	★ 100°c 1 2 5.5	TA TA FR VA SO IN EV/ (BU	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @ APORATION RATE TYL ACETATE = 1)	150mg/kg .8 ^o c NA DMiscible NA	
BOILING POINT SPECIFIC GRAV pH @ 25 °C VOLATILES, % E VAPOR DENSITY FLASH POINT TEST METHOD) LAMMABLE LIM	760 mm Hg 17Y (H,O = 1) 3Y WT. (AIR = 1) IV. FIR	× 100°c 1 ≈ 5.5 NA NA	TA TA TA TA TA TA TA TA TA TA TA TA TA T	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @ APORATION RATE TYL ACETATE = 1)	150mg/kg .8 ^o c NA	
BOILING POINT SPECIFIC GRAV PH @ 25 °C VOLATILES, % E VAPOR DENSITY	760 mm Hg TTY (H,O = 1) BY WT. (AIR = 1) IV. FIR NA TTS IN AIR, % BY VC	× 100°C 1 ≈ 5.5 NA NA NA NA NA NA	TA FR FR VA SO IN EV/ (BU AZARD DA AUT TEM UP	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @ NPORATION RATE TYL ACETATE = 1) TA OIGNITION IPERATURE PER NA	150mg/kg .8 ^o c NA DMiscible NA	
BOILING POINT SPECIFIC GRAV pH @ 25 °C VOLATILES, % E VAPOR DENSITY FLASH POINT TEST METHOD) LAMMABLE LIM XTINGUISHING	760 mm Hg TTY (H,O = 1) BY WT. (AIR = 1) IV. FIR NA TTS IN AIR, % BY VC Carbon dioxi	× 100°c 1 ≈ 5.5 NA NA	TA SO TA SO IN EV/ (BU ZARD DA AUT TEM UP	EEZING POINT: 2 0 POR PRESSURE @ LUBILITY WATER, % BY WT. @ NPORATION RATE TYL ACETATE = 1) TA OIGNITION IPERATURE PER NA	150mg/kg .8 ^o c NA DMiscible NA	

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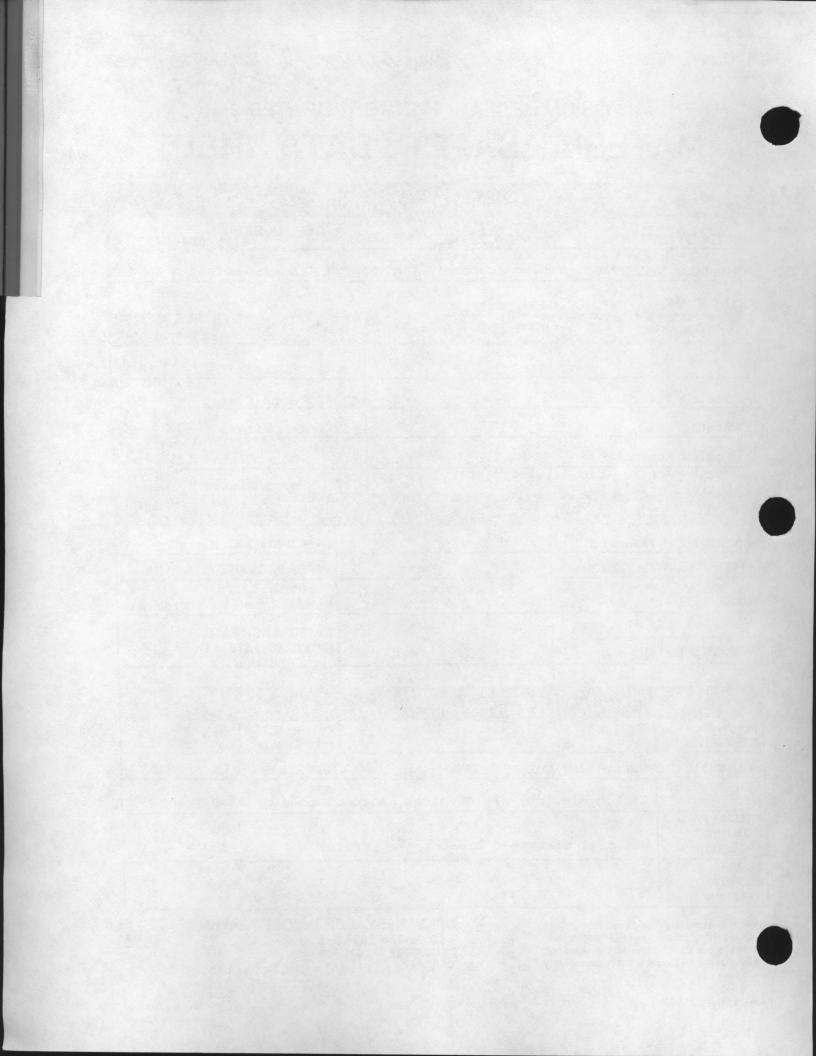
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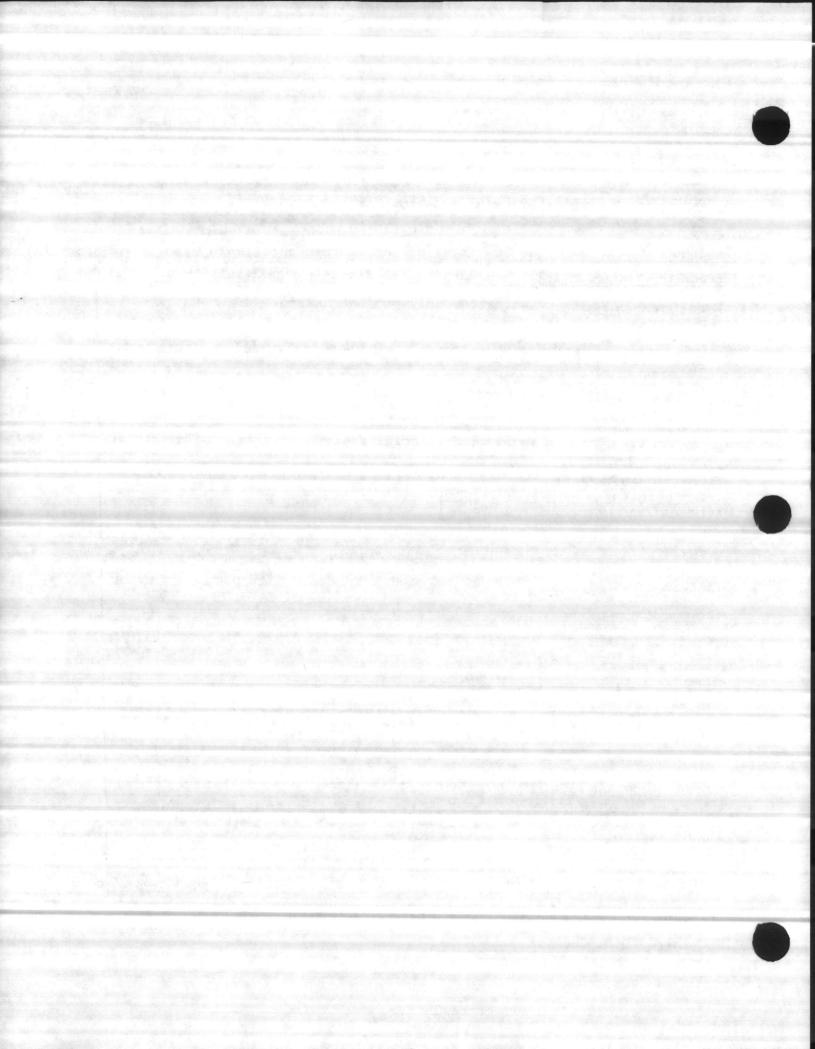
ORION RESEARCH INCORPORATED

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State .	W. A. Carlos and	1	V. HEALTH H	AZARD DATA		
THRESHOLD L	MIT VALUE	Th	e low level o	of acetate p	resent (table	vinegar is
EFFECTS OF O	VEREXPOSUR	E 31) would seem	to indicate	the possibili	ty of irrit
FMERGENCY A		(ti	on as the onl	y product h	azard.	· · · · · ·
He wash	4 . TOP	1. A	VI. REACT	WITY DATA	per este es	ap with 1
STAB	ILITY	-				
UNSTABLE	STABLE X	CONDITIONS TO AVOID None				
INCOMPATIBIL (MATERIALS TO		A	void strong o	acid, sodiu	m peroxide, and	l nitric ac
HAZARDOUS DECOMPOSITIO	ONS PRODUCT	ST	ermal decomp	osition may	produce CO and	Vor co2
HAZARDOUS P	OLYMERIZATIK WILLNOTOCC	UR	CONDITIONS		2004 (
	X		TO AVOID	None		
S RELEASED O	AKEN IF MATE R SPILLED and	-	Pick up and		ES with plent	
IS RELEASED O	AKEN IF MATE R SPILLED and AL METHOD	RIAL	Pick up and ECIAL PROTEC	wash down d		y of water
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NASTE DISPOS	AKEN IF MATE R SPILLED and AL METHOD PROTECTION LOCAL EXH MECHAN	RIAL M. SP	Pick up and the ECIAL PROTEC	wash down d	rain with plent	y of water
ASTE DISPOS	AKEN IF MATE R SPILLED and AL METHOD PROTECTION LOCAL EXH MECHAN (GENER	RIAL	Pick up and ECIAL PROTEC No X	SPECIAL OTHER	NO	y of water
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DESCRIPTION:

Flouride, Ippm, Standarizing

Solution

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	ORION U	ATER	FLUDRIDE SYSTEM FSC 0: 15-412
	L SAFETY		TA SHEET
	EUAIEII	UA	Sheel J ol 2
	I. PRODUCT IDENTIFIC		
RODUCT NAME	Plouride, Acetic Acid Acetate, CDTA CH	-09-0	FAMILY: Organic
A Course in	OOH, NaCH, COOH		
	HAZAHDOUSINGRE	DIENTS	And the family of the family o
MAT	ERIAL	%	TLV (UNITS) LD50
Sodium Flouride		.0001	oral man
Acetic Acid		0.7	TWA 25mg/m ³ oral rat
Sodium Acetate		2.8	None Listed 3530mg/kg
CDTA: [Acetic Acid, (1, trilo] Tetral	2-Cyclohexylenedini-	0.2	None Listed 150mg/kg
	IN PHYSICAL DAT	A .	
DILING POINT, 760 mm Hg			FREEZING POINT: 2 0.8°C
ECIFIC GRAVITY (H,O = 1)	≈ 1.45 ~		VAPOR PRESSURE O NA
1@ 25 °C	5.5		IN WATER, % BY WT. @miscible
APOR DENSITY (AIR = 1)	~ 2.8		EVAPORATION RATE (BUTYL ACETATE = 1) NA
ASH POINT	IRE AND EXPLOSION HA	and the second design of the second diversion of the s	DATA
EST METHOD)	NA		AUTOIGNITION TEMPERATURE NA
AMMABLE LIMITS IN AIR, % BY	VOLUME LOWER N.	A	UPPER NA
ECIAL FIRE-	chemical alcohol for	att or	mist
OCEDURES Use self	contained breathing	appar	atus
USUAL FIRE ID EXPLOSION None ZARDS			

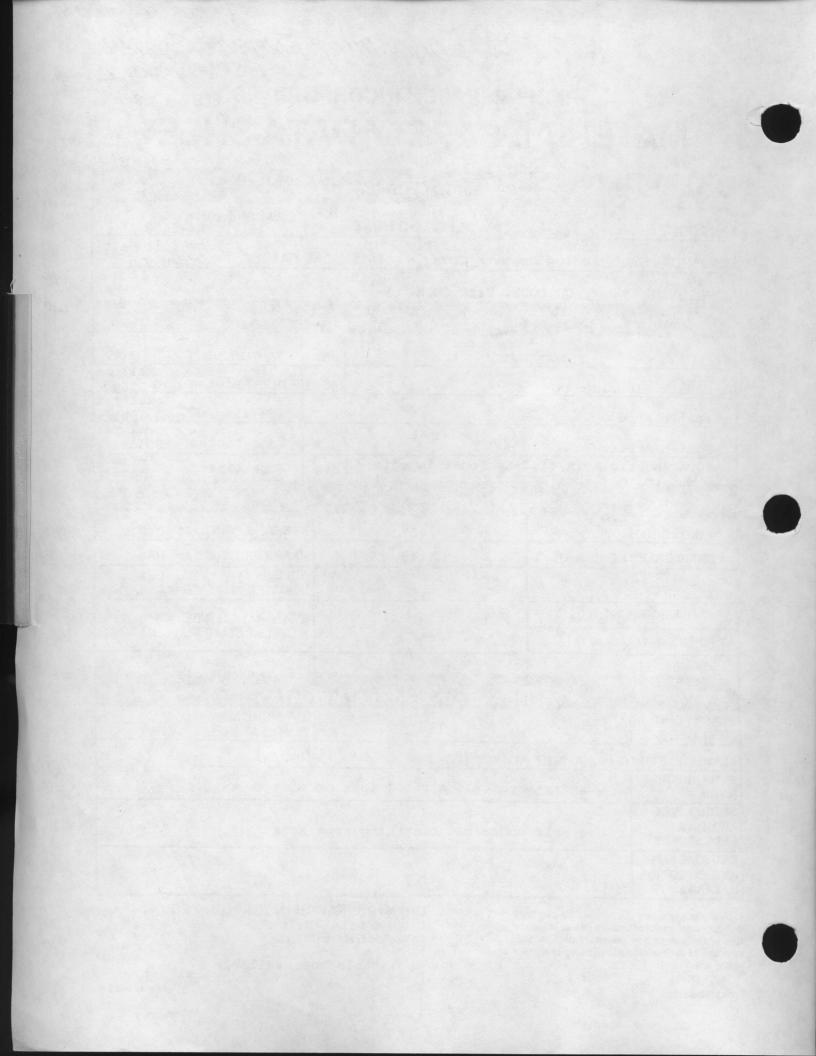
Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated, safe use of the materials is the responsibility of the user.

ORION RESEARCH INCORPORATED 840 Memorial Drive CAMBRIDGE, MA 02139

NA - Not Applicable/Not Available

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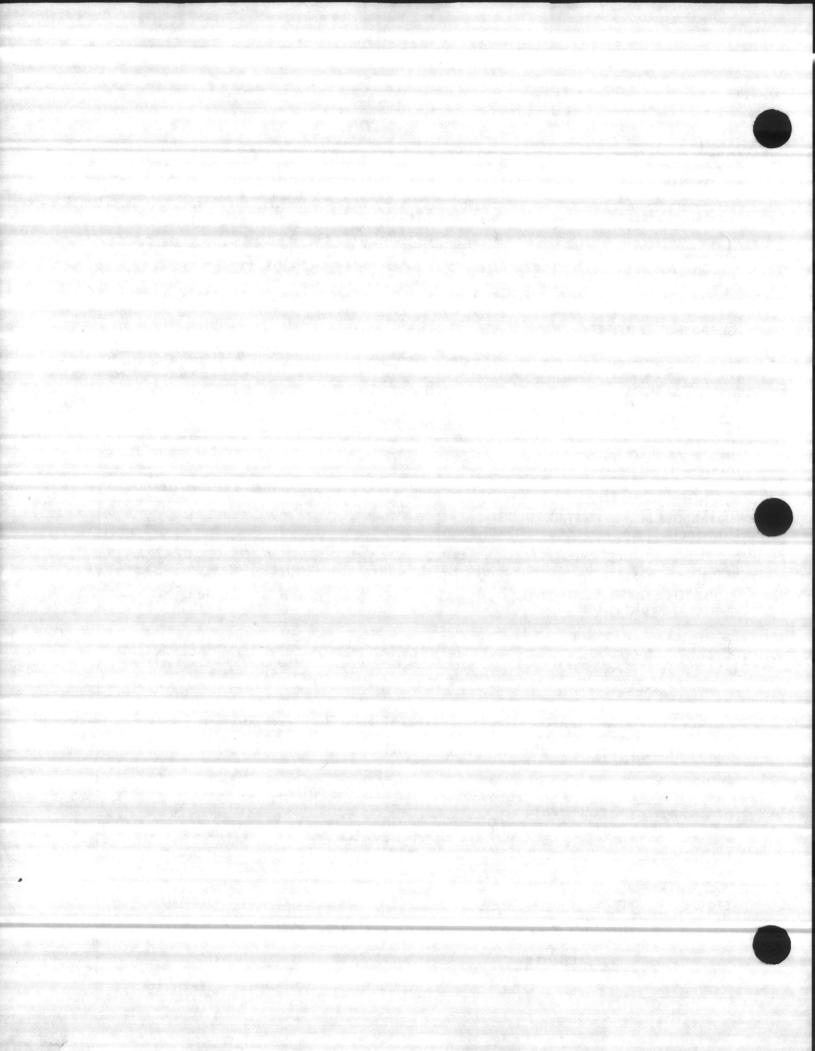
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EFFECTS OF OVE	REXPOSUR	E 31) V	could seem	to indicate the	possibility	of irrit
MERGENCY ANI	D FIRST-		e only pro	duct hazard.		*
STABIL		14 . A. 3*	VI. REACTIV			
UNSTABLE	STABLE	CONDITH	ONS			
	X	TO AVOI) None	1999 - See		
NCOMPATIBILIT MATERIALS TO	Y VOID)	Stro	ong oxidize	rs		
HAZARDOU? DECOMPOSITION	IS PRODUC	TS The	mal decomp	osition may pro	duce CO and/o	r 002 2
HAZARDOUS POU	ILL NOT OC		DITIONS			
	and the second design of the s			None	and the second second second second	
S RELEASED OR	X KEN IF MAT	TO I	NOID I	None K PROCEDURES wash down drain	with plenty	of water
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STEPS TO BE TAI IS RELEASED OR WASTE DISPOSA RESPIRATORY PI (SPECIFY TYI'E) VENTILATION PROTECTIVE GLO OTHER PROTECT	X KEN IF MAT SPILLED and L METHOD ROTECTION LOCAL ED MECHA (GENI DVES TIVE EQUIPS Y/DOT	TO A VIII. SPEC	NO NA NO SPECIAL PROTEC	K PROCEDURES wash down drain TION INFORMATIO NA SPECIAL OTHER EYE PROTECTION NO	NO NO NO NO	×.



DESCRIPTION:

Furniter Polish

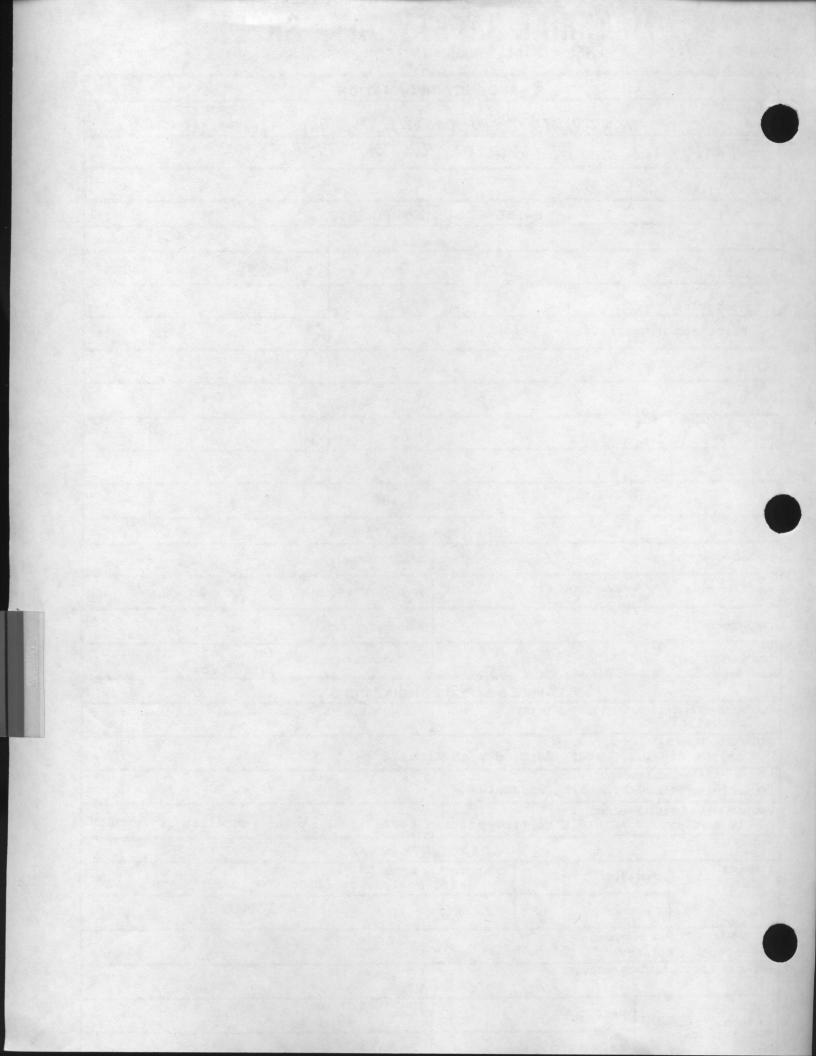


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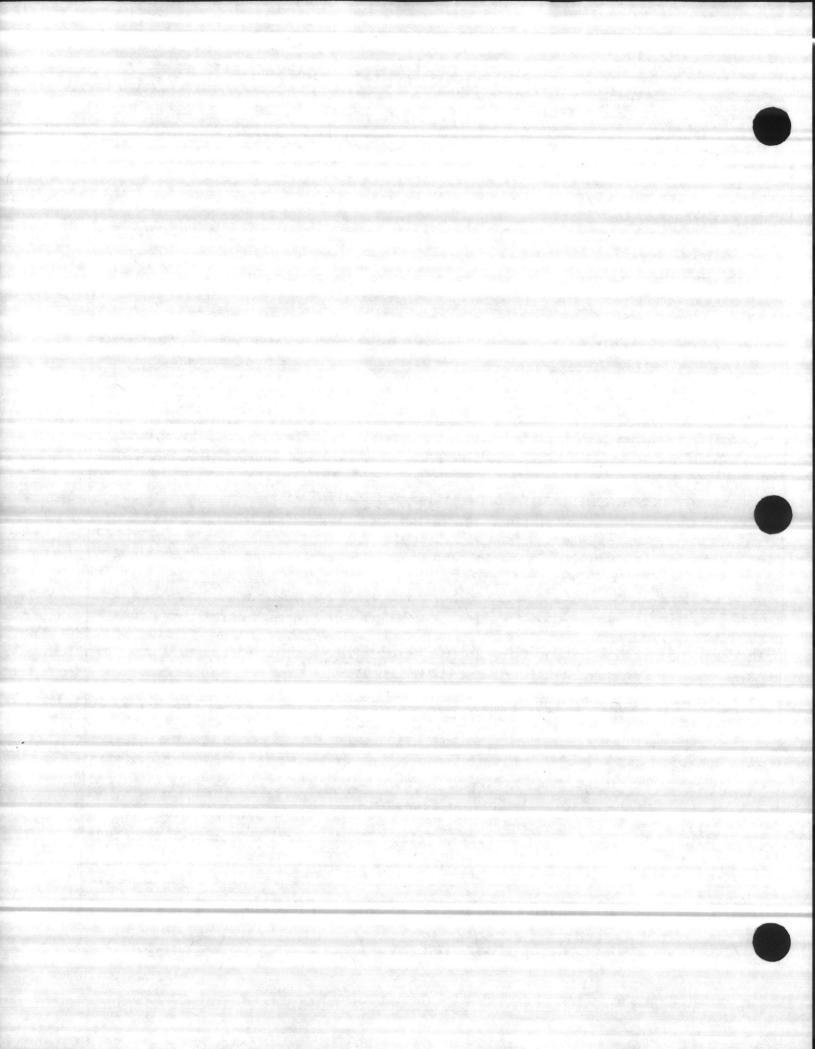
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		1-1	PRODUCT	NFORMATION				
MANUFACTURED		DIMAN	T IIII MUN	IGTON, N.C. 2	EMERG	ENCY PHON 422-207		
ADDRESS MARKET	ST.		Contraction of the local distance of the loc	FIRNJTURE R			<u>.</u>	
FORMULA				TRADE NAME				
PROPRIETARY	SEF. BELOU							
		ш-н.	AZARDOUS	INGREDIENT	T			
					CAS	%(wt)	TLV(ppm)	
Heptane				· ·	142-82-5	14	400	
Isobutane					75-28-5		1000	
Petroleum distillate				8030-30-6	2	500		
· · ·								
1999								
	•							
				and the second second				
	· ·					1	<u> </u>	
BOILING POINT ("F)			111-27131	CAL DATA				
		NA		SPECIFIC GRAVIT	(H2O=1) Conc. on	iv = 0.	93	
VAPOR PRESSURE (p	MAXIMUM	60		S VOLATILE BY VO	DLUME 90			
VAPOR DENSITY	NE		÷.	EVAPORATION RATE (11) NE				
SOLUBILITY IN WAT	ER			APPEABANCE AND ODOR Creamy off-white spra				
	Darti .				lezon od	07		
FLAMMABILITY as p	CPSC FLAME EXT	ENSION TES	T	FLAMMABLE LIMI		Upp	er	
Combustibl Extinguishing ME				NA NA				
carbon di	Loxide, wate	r, foam,	dry cher	nical				
Self-conte	ined breath	ing appa	ratus					
UNUSUAL FIRE & EX	PLOSION HAZARDS	1		120 ⁰	F or the contai			
DO LOC E.	kpuse dergsu	15 10 10		IVITY DATA	F or the contai	ner bay	explot	
STABILITY	UNSTABLE		CONDITIONS	TO AVOID				
	CHUTADLE	_	Heat,	, sparks, or	flame, weldin	g arcs		
	STABLE	x	•					
STTONE OF								
HAZARDOUS DECON		TS						
CO								



	VI-HEALTH HAZARD DATA
SHA PERMISSIBLE	T31 ppm estimated
TS OF OVER	
INMALATION	EAF USUNE
	he, dizziness, nausea, possible unconsciousness and death if vapor conc. exceeds TLV.
SKIN CONTAC	CT/ABSORFTION.
Possib	le slight irritation
INGESTION.	
Nausea	
EYES.	
Possit	ole slight irritation
EMERGENCY AND	FIRST AID PROCEDURES
EYES AND SP	IN EYES: flush with plenty of water, if irritated see physician
SKIN:	wash with soap & water.
INHALATION	Record of passages and get medical aid.
Remov	e to fresh air. Resuscitate if necessary and get medical aid.
INGESTION	THE REPORT OF A DESCRIPTION THE PARTY
DO NO	T INDUCE VOMITING. CALL PHYSICIAN IMMEDIATELY.
	VII-SPILL OR LEAK PROCEDURES
Wipe	EN IN CASE MATERIAL IS RELEASED OR SPILLED up with absorbent material and dispose of according to local, state &
feder	al regulations.
ASTE DISPOSAL Aeros	cal regulations.
ASTE DISPOSAL Aeros	METHOD sol cans, when vented to atmospheric pressure through normal use, pose
waste Disposal Aeros no ha	METHOD sol cans, when vented to atmospheric pressure through normal use, pose azard. VIII-SPECIAL PROTECTION INFORMATION
waste Disposal Aeros no ha	ANETHOD sol cans, when vented to atmospheric pressure through normal use, pose stard. VIII-SPECIAL PROTECTION INFORMATION NAL PROTECTIVE EQUIPMENT
ASTE DISPOSAL Aeros no ha	ANETHOD sol cans, when vented to atmospheric pressure through normal use, pose stard. VIII-SPECIAL PROTECTION INFORMATION NAL PROTECTIVE EQUIPMENT
feder waste Disposal Aeros no ha specific perso Respirato EVE Skin Ni	The second secon
SPECIFIC PERSO RESPIRATO EVE SKIN NI OTHER N	ANETHOD NATHOD NAL PROTECTIVE EQUIPMENT AV NONE NONE NONE NONE NONE NONE NONE
SPECIFIC PERSON RESPIRATO EVE SKIN NI OTHER NI VENTILATION RE	ANETHOD NATHOD NAL PROTECTIVE EQUIPMENT AV NONE NONE NONE NONE NONE NONE NONE
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feder waste Disposal Aeros no ha specific PERSO RESPIRATO EVE SKIN NI OTHER NI VENTILATION RE 10Ca	AND THE THE SAME AND COMPANY AND LOG A
feder waste Disposal Aeros no ha specific PERSO RESPIRATO EVE SKIN NI OTHER NI VENTILATION RE 10Ca	Tal regulations. METHOD HOL cans, when vented to atmospheric pressure through normal use, pose azard. VIII-SPECIAL PROTECTION INFORMATION NAL PROTECTIVE EQUIPMENT AV NONE NONE NONE ONE ONE OUNE OUNE OUNE OUNE IX-SPECIAL PRECAUTIONS O BE TAKEN IN MANDLING AND STORING NOT puncture or incinerate container. Do not store at temperatures above
Feder WASTE DISPOSAL Aeros no ha SPECIFIC PERSON RESPIRATO EVE SKIN NI OTHER NI VENTILATION RE 10Ca PRECAUTIONS T Do m 130 OTHER PRECAU	TIONS
Feder WASTE DISPOSAL Aeros no ha SPECIFIC PERSON RESPIRATO EVE SKIN NI OTHER NI VENTILATION RE 10Ca PRECAUTIONS T Do m 130 OTHER PRECAU	Tal regulations. METHOD Hol cans, when vented to atmospheric pressure through normal use, pose lizard. VIII-SPECIAL PROTECTION INFORMATION NAL PROTECTIVE EQUIPMENT RV NONE none ONE ONE ONE OURE OUREMENTS 1 exhaust IX-SPECIAL PRECAUTIONS O BE TAKEN IN MANDLING AND STORING NOT puncture or incinerate container. Do not store at temperatures abov F.



DESCRIPTION:

Hardness Indicator - Sodium

Borate

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Mallinckrodt	SODIUM BORAT	te sheet Right		-2-
Mallinckrodt	Material Safety De	ta Sheet C. J. J.	Fire and Explosion Information	SECTION 2
	Mallinckrodt Inc. Science Products D P.O. Box M Paris, Kentucky 4		Fire:	Not considered to be a fire hazard.
Effective Date: 10-15-85			and the second se	
PRODUCT IDENTIFICATION:			Explosion:	Not considered to be an explosion hazard.
Synonyms: Sodium borate de	cahydrate; borax; so	dium pyroborate		
Formula CAS No.: 1303-96-4 TSCA CAS No.: 1330-43-4	(Hydrate)	Nolecular Weight: 381.37	Fire Extinguishing Media:	Use any means suitable for extinguishing surroundi fire.
Hazardous Ingredients: Not applicable.		Chemical Formula: Na ₂ B ₄ O ₇ · 10H ₂ O	Special Information:	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathi apparatus with full facepiece operated in the pressure demand or other positive pressure mode.
	PRECAUTIONARY ME			prosente commine of other posterve pressure mode.
WARNING! HARMFUL IF SWAL MAY CAUSE IRRITATION TO SK	LLOWED, INHALED OR AN KIN, EYES AND RESPIRA	SORBED THROUGH SKIN. TORY TRACT.		
Avoid contact with eyes, s Avoid breathing dust.	skin and clothing.		Reactivity Data	SECTION 3
Keep container closed. Use with adequate ventilat Wash thoroughly after hand	tion. dling.	•	Stability:	Stable under ordinary conditions of use and storag
	EMERGENCY/FIRST		Hazardous Decomposition Products:	Emits toxic fumes of sodium oxide when heated to
sticking linger down throa	ting immediately by a at. Never give anyth	giving two glasses of water and hing by mouth to an unconscious		decomposition.
In case of contact, immedi least 15 minutes.	istely flush skin or	attention for any breathing eyes with plenty of water for at	Hazardous Polymerization:	Will not occur.
In all cases call a physic SEE SECTION 5.	cian.		Incompatibilities:	Acids, alkaloids, and metallic salts.
DOT Hazard Class: Not Regu	ulated			
Physical Data	SECTION 1			
Appearance: Grey, blue,	, or green crystals.		Leak/Spill Disposal Informati	on SECTION 4
Odor: Odorless.			Ventilate area of leak or spi protection from dust.	11. Clean-up personnel may require respiratory
Solubility: 6g/100g wat Boiling Point: Loses water		Hanon Danslan (Al- 1) N. Jafan	Spills: Sweep up and containe	rize for reclamation or disposal. Vacuuming or wet
		Vapor Density (Air-1):No information found.	sweeping may be used to avoid Disposal: Whatever cannot be	dust dispersal. saved for reclamation may be delivered to an approved
Melting Point: 75°C (167°F	F).	Vapor Pressure (mm Hg):No information found.	waste disposal facility.	
Density: 1.73		Evaporation Rate:No information found.	Ensure compliance with local,	state and federal regulations.
-	WATO	1		
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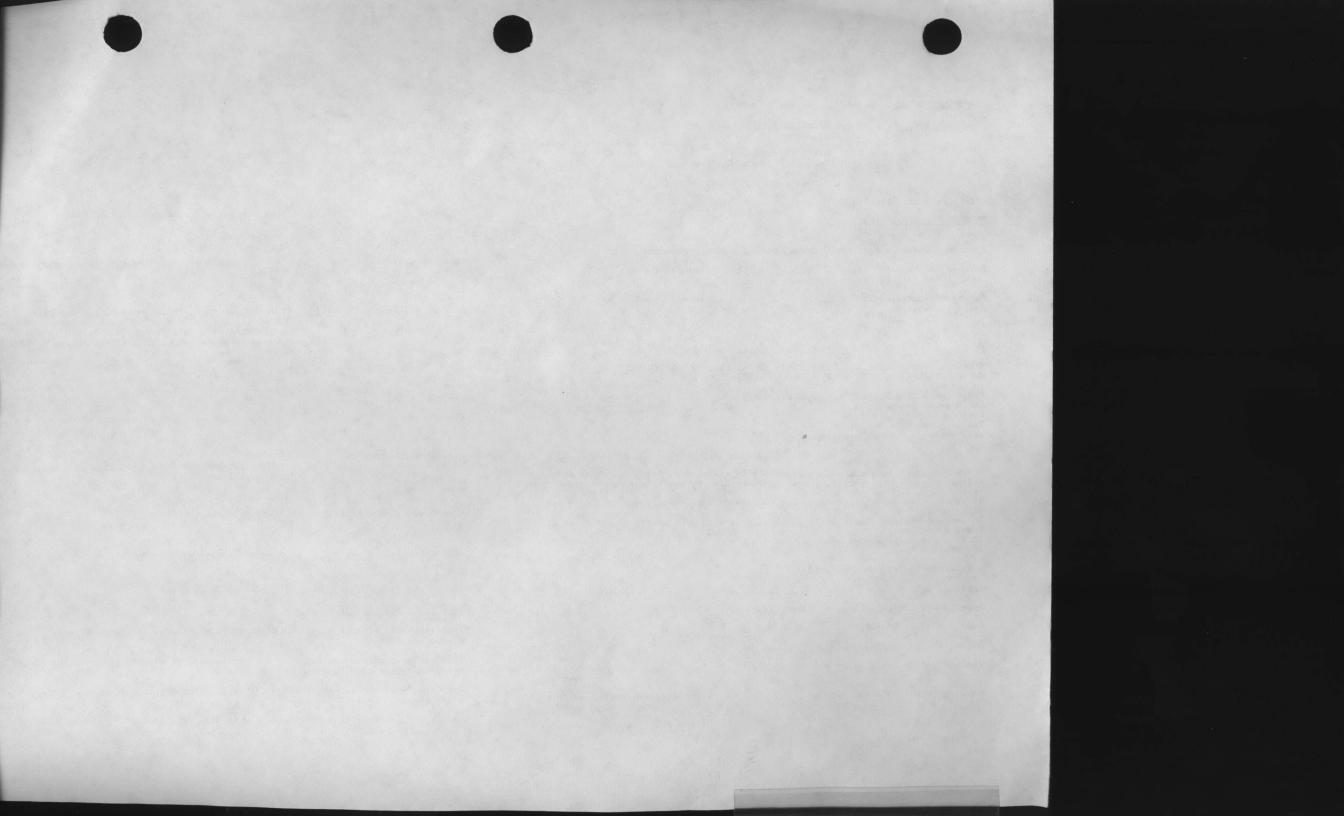
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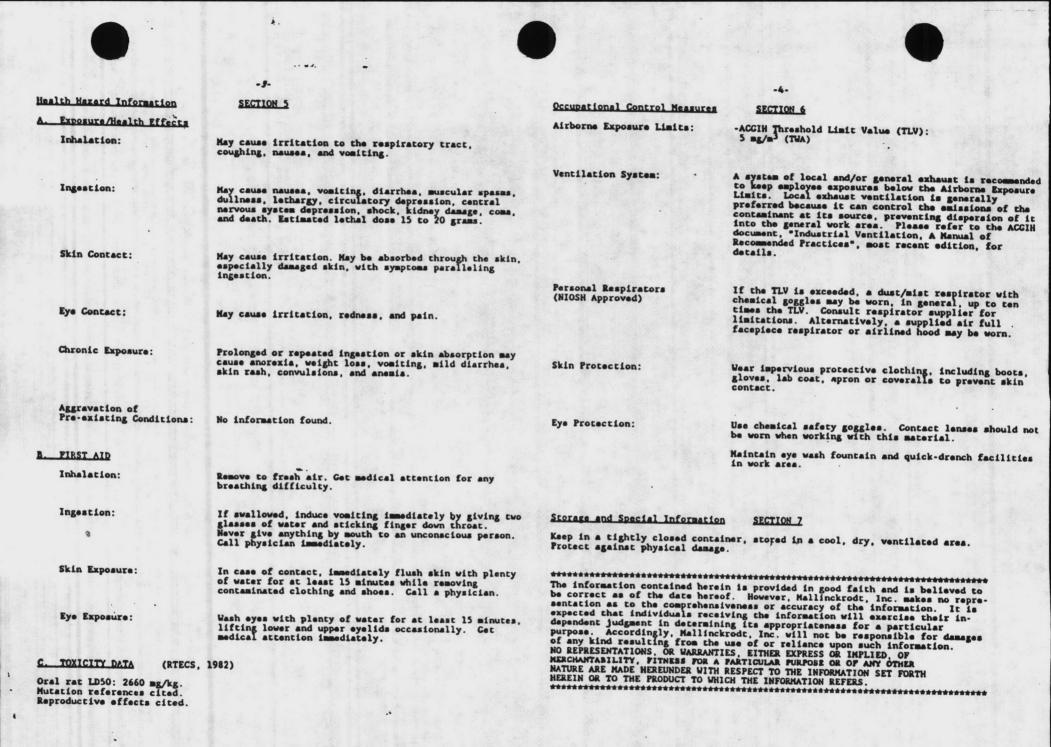
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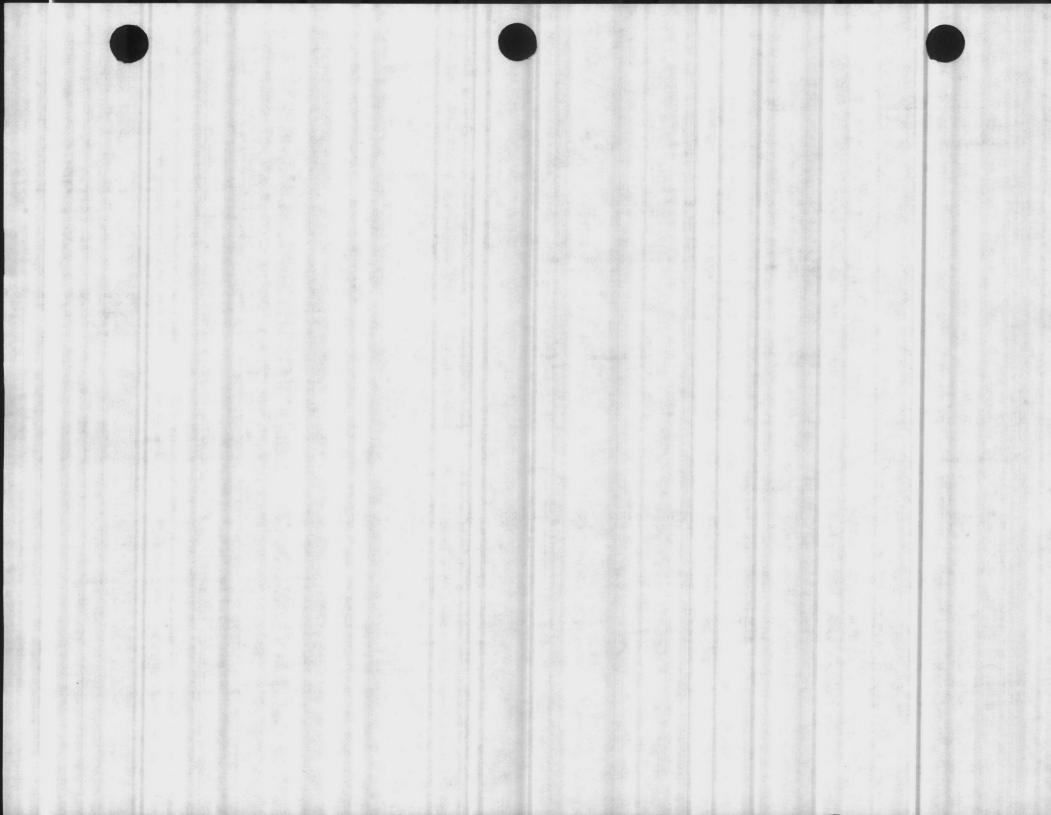
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DESCRIPTION:

Hardness Indicator Powder

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U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration VES WATER

Form Approved OME No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

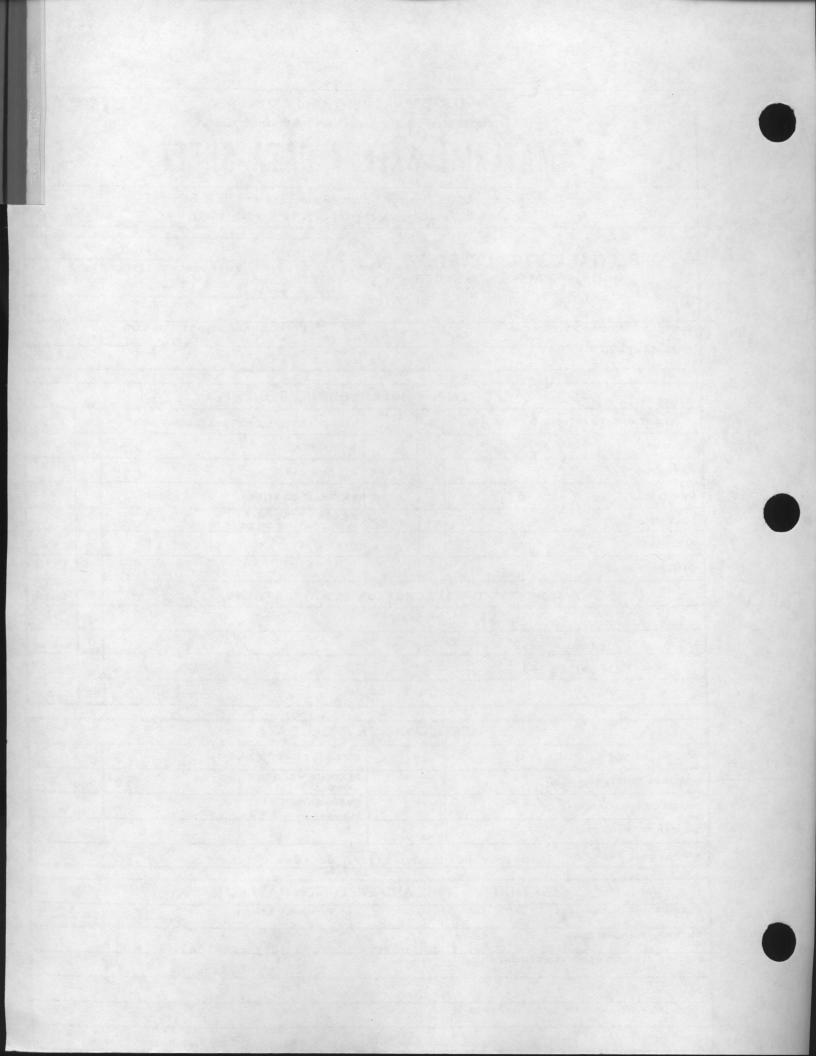
	ORBECO ANALYTICAL SYSTEMS, INC.	NI	
M	185 Marine Street, Farmingdale, NY 11735 (516) 293-4110		EMERGENCY TELEPHONE NO.
-			516-222-0300
-			
CHEMICAL NAME AND SYNONYMS		_0_	R-515 Hardress Buffer
CHI	EMICAL FAMILY	FORMUL	(Boraxculfide)

SECTION	N 11 -	HAZA	RDOUS INGREDIENTS		
PAINTS, PRESERVATIVES, & SOLVENTS		TLV	ALLOYS AND METALLIC COATINGS		TLV
PIGMENTS "			BASE METAL		
CATALYST			ALLOVS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS .					
HAZARDOUS MIXTURE	S OF C	DTHER LH	DUIDE, SOLIDE, OR GASES	*	TLV
Sodium Borate				4	5mg/m3
Sodium Hydroxide				1	2mg/m3
Sodium Sulfide				1	15mg/m
			as Hydrogen Sulfide		

	SECTION III - I	PHYSICAL DATA	
BOILING POINT ("F.)	213	SPECIFIC GRAVITY (H20+3)	1.032
VAPOR PRESSURE (mm Hp.)		PERCENT, VOLATILE	96
VAPOR DENSITY (AIR-1)		EVAPORATION RATE	
SOLUBILITY IN WATER	complete		

APPEARANCE AND ODOR Colorless solution; strong sodium sulfide odor

LASH POINT (Method used)			PLAMMABLE LIMITS	Lei	U
XTINGUISHING MEDIA			L		
	1 6000 .		Alanda, Annalist		
MALEL FIRE FIGHTING PROCEDURES	L LOam, Ca	arbon	dioxide: dry chemica		
COME THE TOTTING PROCEDURES					



SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE Conjunctivitis in eyes; respiratory irritant, cough, nausea,

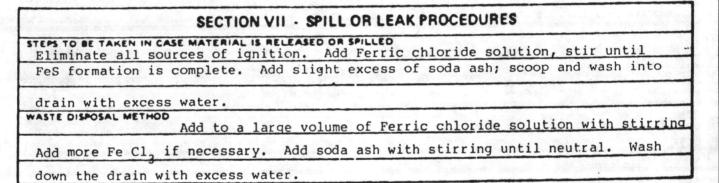
headache, unconsciousness, death.

If in eyes or skin, wash with plenty of water in eyes for at least 15 minutes.

If swallowed, give 2 glasses of water and induce vomiting, repeat untill fluid is

clear. Call a physician immediately.

		SECTI	ON VI - R	
STABILITY	UNSTABLE		CONDITIO	NS TO AVOID
	STABLE	x	Keep co	ntainer closed, away from acid and heat.
and a state of the	ITY (Materials to a	Avoi	d acid	
	With	acid_prod	uces pois	onous gas, Hydrogen sulfide.
HAZARDOUS		OCCUR		CONDITIONS TO AVOID
POLYMERIZATI		NOT OCCUR	x	A Second s



	SECTION VIII - SPECIAL	PROTECTION IN	FORMATION
RESPIRATORY PI	NOTECTION (Specify type)	a and the second	
VENTILATION	LOCAL EXHAUST Preferable		SPECIAL
	MECHANICAL (General) Acceptable		OTHER
POTECTIVE GLO	Plastic gloves	EVE PROTECTION	Coverall goggles
OTHER PROTECT	Impervious apron,	safety shower,	eye bath

SECTION IX - SPECIAL PR	ECAUTIONS
-------------------------	-----------

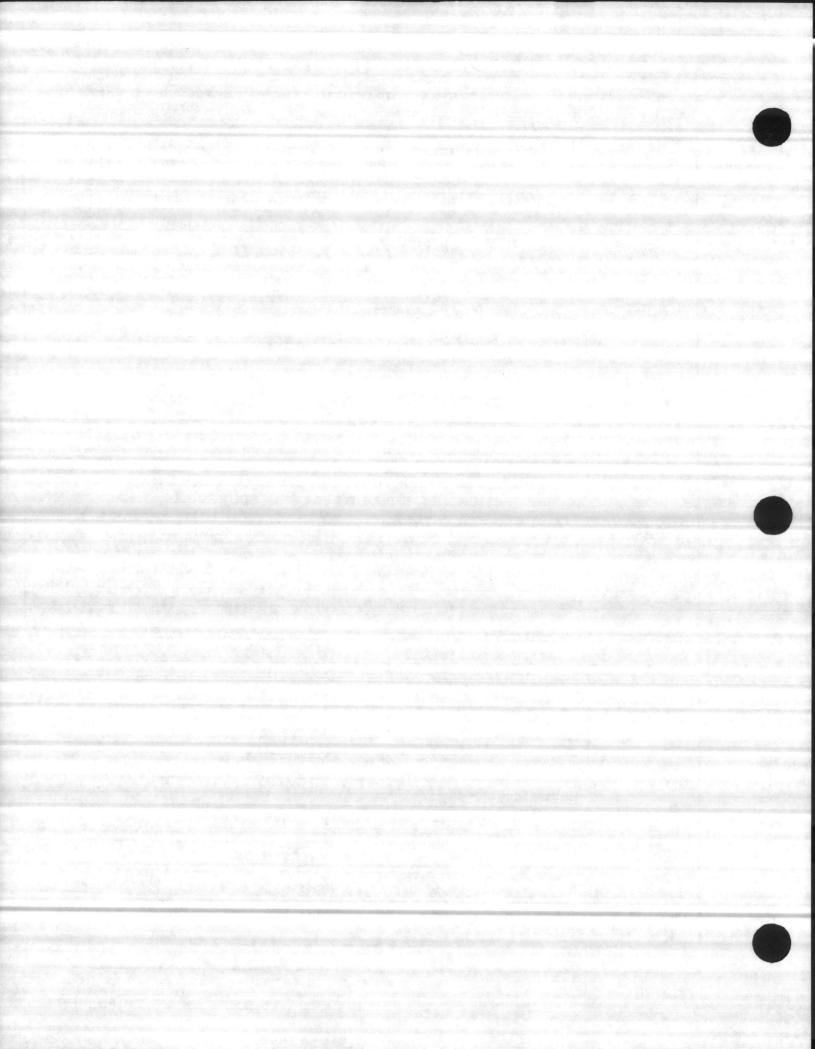
May be fatal if swallowed. avoid breathing vapors. Keep container closed and

away from acid and heat. Store at room temperature.

OTHER PRECAUTIONS

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Taylor Catalog #R-0620

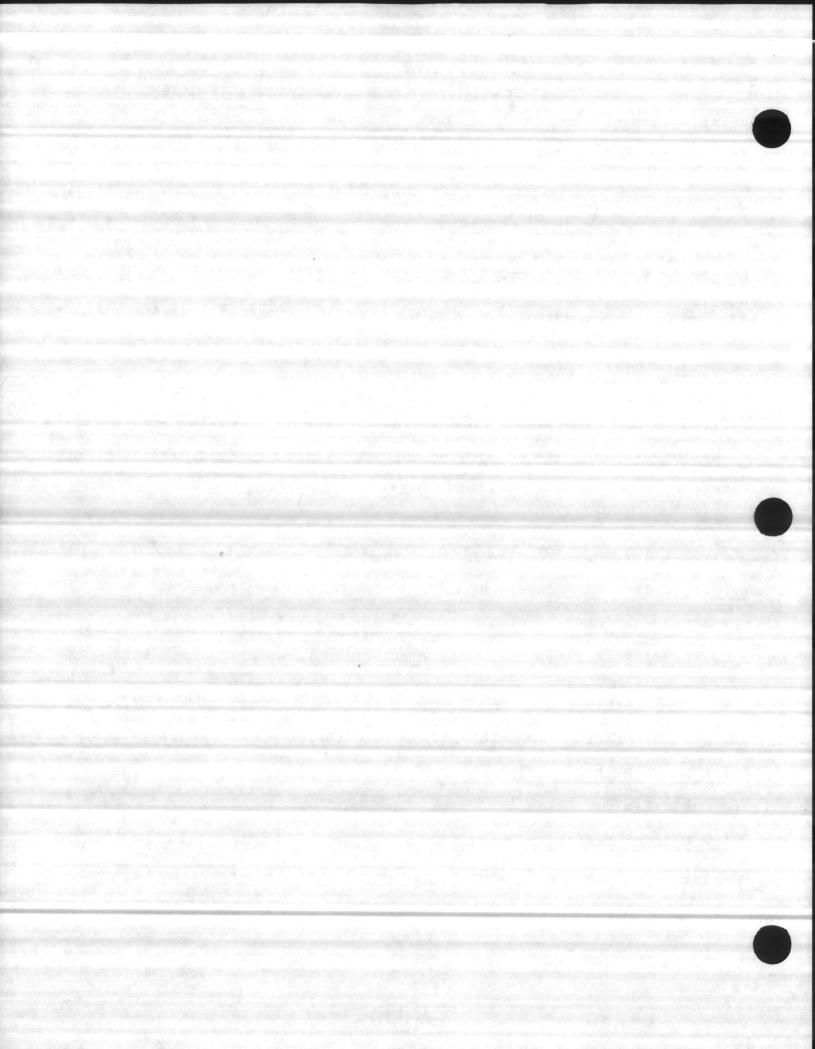
MATERIAL SAFETY DATA SHEET

<u>SECTION 1</u> - MANUFACTURER'S INFORMATION Manufacturer's Name: Taylor Chemicals, Inc. 31 Loveton Circle Sparks, MD 21152 Emergency Telephone No.: 301-472-4340 <u>Chemical Name and Synonyms</u>: Eriochrome Black T mixed with sugar <u>Trade Name and Synonyms</u>: Hardness Indicator Fowder <u>Chemical Family</u>: organic dye in sucrose

<u>SECTION II</u> - HAZARDOUS INGREDIENTS: Listed Below _____ Not Applicable X______ <u>Component</u> <u>Percentage</u> <u>Hazard</u>

SECTION IIIPHYSICAL DATAOOBoiling Point(F):decomposesSpecific Gravity:1.6Vapor Pressure(mm Hg):solidPercent Volatile By Volume:99Vapor Density (Air=1):NASolubility in Water:completeAppearance and Odor:odorless, purple powder





<u>SECTION V</u> - HEALTH HAZARD DATA: Listed Below ____ Not Applicable X_____ Threshold Limit Value: TXDS:

Effects of Overexposure:

Emergency and First Aid Procedures:

SECTION VI - REACTIVITY DATA: NA

SECTION VII - SPILL OR LEAK PROCEDURES:

Steps to be Taken in Case Material is Released or Spilled:

Flush to sewer.

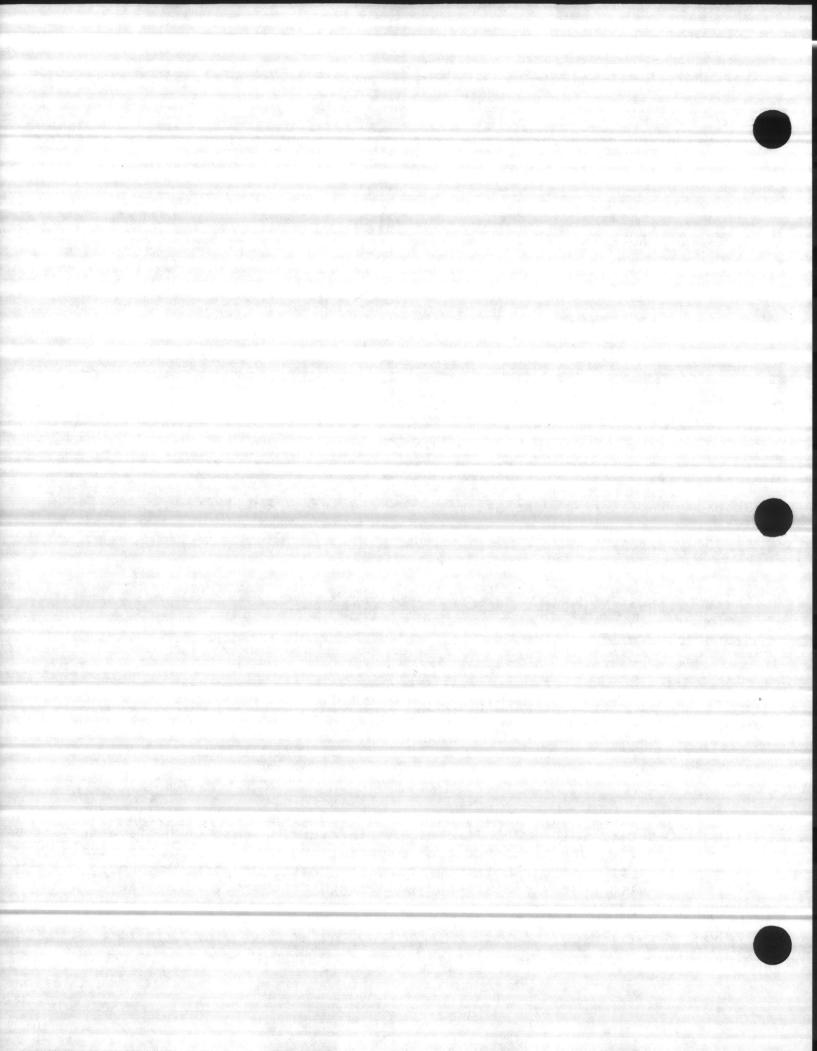
Waste Disposal Method:

Flush to sewer.

SECTION VIII - SPECIAL PRECAUTIONS: NA

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200. It contains information that we believe to be true and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Waste Disposal" assumes compliance with Federal, State and Local regulations regarding the

disposal/of hazardous waste. intrilication Title Title Date 1 Date 1/ 1935 Signature



	0054	N [®] Network IGENCY PHONE 1-800-OLIN-911	
		SECTION I - IDENTIFICATION	
AL NAME & SY			

CHEMICAL FAMILY	FORMULA Ca(OCi)	TRADE NAME HTHM Indust and Commencial Granular 11
DESCRIPTION	lar with chlorinous odor	CAS NO. 7778-54-3

SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Do not take internally. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor. Protect against physical damage. Store in a cool. dry. well-ventilated place away from all sources of ignition. Drums may rubture if exocsed to neat. =NIOSH/MSHA approved chlorine gas/dust respirator if excessive dusting occurs.

PROTECTIVE EQUIPMENT	VENTILATION REQUIREMENTS
EYES Goggles	Local mechanical exhaust ventilation recommended to minimize employee exocsure.
GLOVES Rubber, neoprene or PVC	
OTHER Coveralls and impervious boots *SEE ABOVE	

SECTION III - HAZARDOUS INGREDIENTS

1	BASIC MATERIAL	OSHA PEL	LD50	LCSO	SIGNIFICANT EFFECTS
Calcium	hypochlorite	None established	850 mg/kg (rat)	See back page	Corrosive to all tissues contacted
		And Street and Street			
		AND COM	1		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

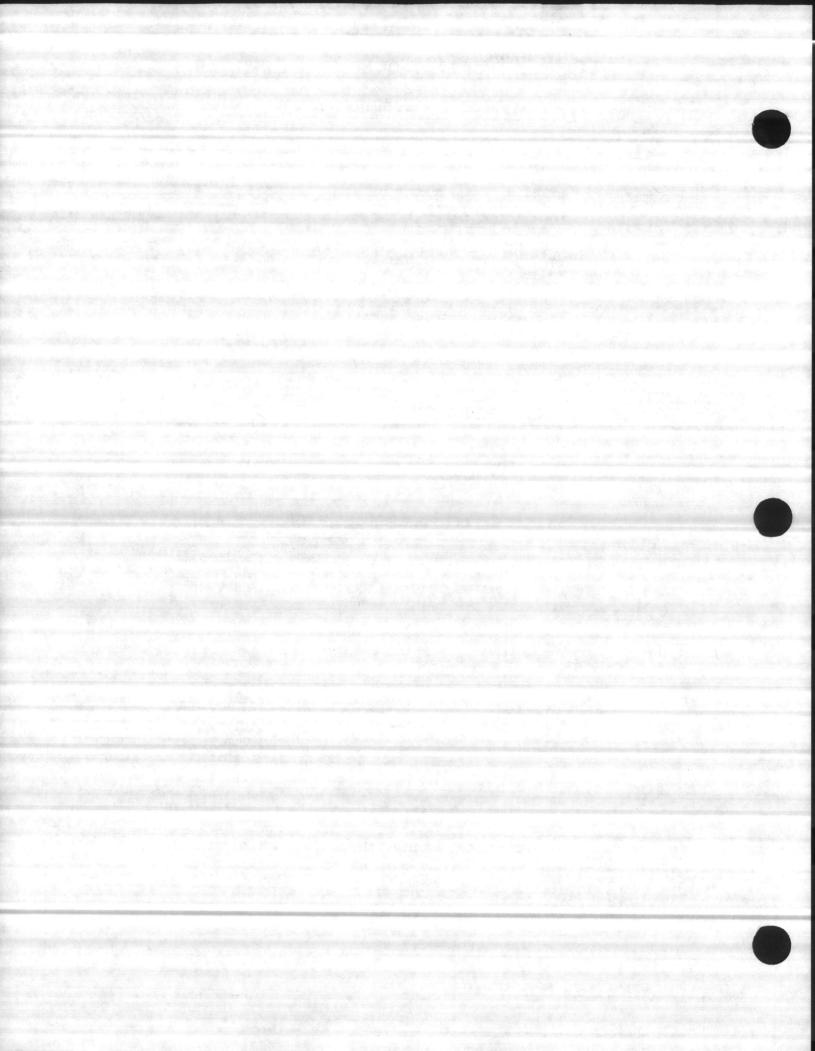
FLASH POINT Not applicable METHOD	DSHA CLASSIFICATION	FLAMMABLE Explosive Limit		UPPER NC
EXTINGUISHING MEDIA Not combu				
SPECIAL FIRE HAZARD & FIRE FI apparatus when any material i	CUTTNC DOCCEDURES USA NIUSH/M	SHA approved ser con	apidly.	eating

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE None established (chlorine das 1 ppm ACGIH 1985-86) SYMPTOMS OF OVER EXPOSURE Corrosove to all tissue contacted EMERGENCY FIRST-AID PROCEDURES IN Flush with water for 15 minutes, call a physician

EYES Flush with water for 15 minutes, call a physician.

INGESTION Drink large quantities of water. Do not induce vomiting. Call a physician



SECTION VI - TOXICOLOGY (PRODUCT)

ACUTE ORAL LD 50 250 mg/kg (rat) ACUTE DERMAL LD 50 >2 g/kg (rapp::) ACUTE INHALATION LC 50 <20 mg/L and >2 mg/L 1 nr (rat)

CARCINOGENICITY Not known to be cancinogenic MUTAGENICITY Neg. dominant leth mutagen test EYE IRRITATION Corrosive PRIMARY SKIN IRRITATION Corrosive

PRINCIPAL ROUTES OF ABSORPTION Inhalation, skin contact

EFFECTS OF ACUTE EXPOSURE Corrosive to all tissue contacted

EFFECTS OF CHRONIC EXPOSURE None known other than those secondary to acute effects

SECTION VII - SPILL AND LEAKAGE PROCEDURES (CONTROL PROCEDURES)

ACTION FOR MATERIAL RELEASE OR SPILL

Remove all sources of ignition. Wear NIOSH/MSHA respiratory approved for dust and chlorine. Follow OSHA regulations for respirator use (see 29 CFR 1910.134), wear goggles, coverails and rubber, neoprene or PVC gloves and boots. Clean up in a manner to minimize contamination with organic material. Do not return material to original container. Place in a fresh container and isolate outside or in a well-ventilated area. Do not seal the container. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency telephone number shown on the front of this sheet.

TRANSPORTATION EMERGENCY, CONTACT. CHEMTREC 800-424-9300

WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or " leaks in a manner approved for this material. Consult appropriate Federal. State and local regulatory agencies to ascertain proper disposal procedures.

SECTION VIII - SHIPPING DATA

Calcium Hypochlorite, Hydrated, Oxidizer, UN 2880 D.O.T.

C

UNSTABLE X AT_

SECTION IX - REACTIVITY DATA

STABLE

MAY OCCUR HAZARDOUS WILL NOT OCCUR POLYMERIZATION

CONDITIONS TO AVOID

When heated to 350°F it decomposes rapidly with evolution of oxygen and heat INCOMPATIBILITY(MATERIAL TO AVOID) Solvents, acids, pool chemicals (isocyanurates), organic materials. Do not mix with anything but water. HAZARDOUS DECOMPOSITION PRODUCTS

Chlorine

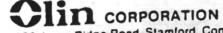
SECTION X - PHYSICAL DATA

MELTING POINT Decomp #177 C	VAPOR PRESSURE No data	VOLATILES No data EVAPORATION RATENC data
BOILING POINT N'A	SOLUBILITY IN WATER 217 +21 C	VAPOR DENSITY (AIR=1) No dat
SPECIFIC GRAVITY (H20=1) No data	PH 10.5-11.5	VAPOR DENSITIERE
	/cu. ft)	BY DATE MARCH 24. 1986
INFORMATION . FURNISHED T	O 94930045 FURNISHED	BY DATE THE IS THE

INFORMATION: FURNISHED TO

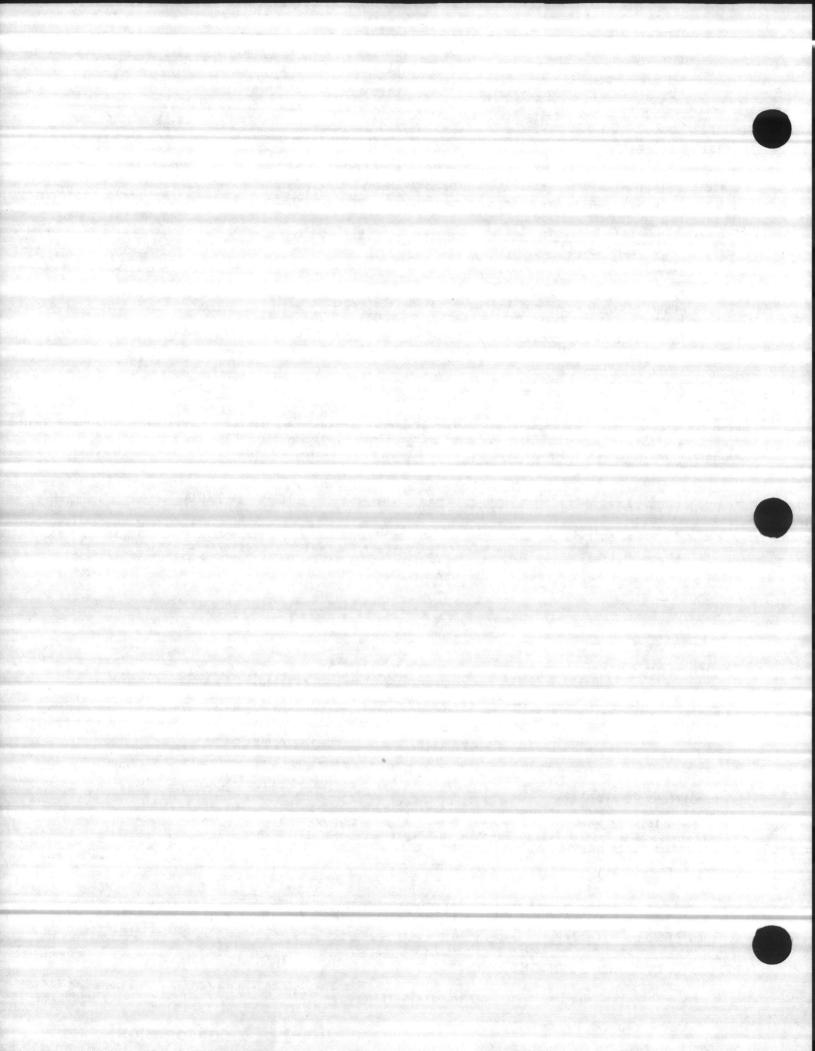
ATTN: DEPT HANDLING MATL SAFETY DATA SHEETS FREIGHT TRAFFIC BRANCH CAMP LEJEUNE NC 28542

Department of Environmental Hygiene and Toxicolog (203) 789-543



Ridge Road Stamford, Connecticut 06904





DESCRIPTION:

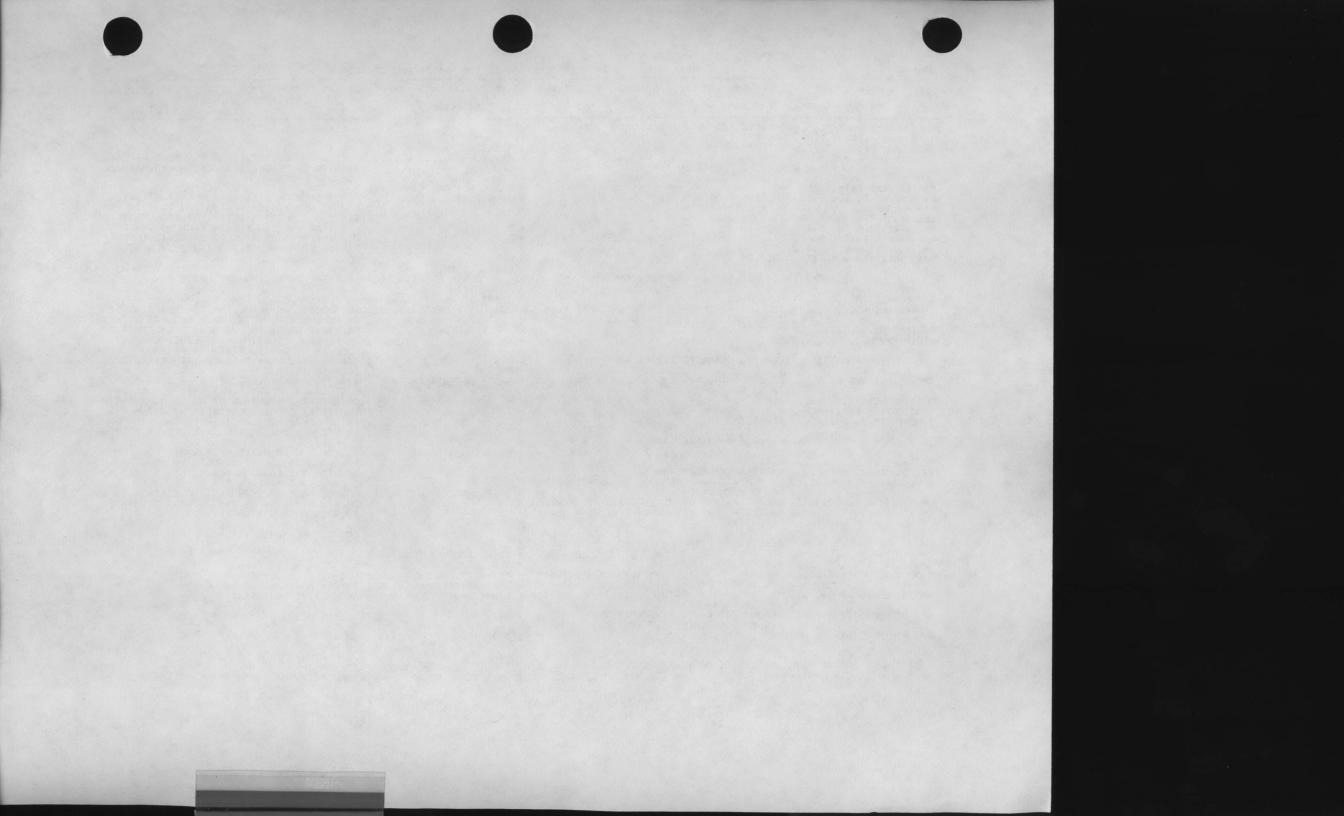
HTH- Calcium hypochoride

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STOCK NUMBER	MFR CAGE	PN IN	D FP IND			STOCK NUMBER				STATUS	NO ENTI	RIES
810-00-255-0472	53084	A	D		001 OF 0C4	6810-00-255-0472	53084	A	D		001 01	F 004
ART NO/TRADE NAM	E 0	-c-114,	CALCIUM HI	POCHLORATI	E. TECHNICAL	•		TH HATAR	D DATA			
ATE MSDS PREP/RE	ATTEN. 6	WE-WC2				SIGNS AND SYMPTON EXPOSURE	5 05					
						* EXPOSURE	IRF	NOITATION	OF EYES,	SKIN & M	JCOUS MER	BRAN
	* * GEN	ERAL IN	FORMATION	* * *		• · · · · · · · · · · · · · · · · · · ·	. ES.	PRODUCE	SEVERE C	HEMICAL	BURNS.HAR	RMFUL
ROPRIETARY DATA.	N	0				EMERGENCY AND FIR PROCEDURES	ST AID	SHALLOW				
TEN NAME		ALCIUM	HYPOCHLOR]	TE, TECHNIC	TAL	PROCEDURES	FLC	DOD SKIN	OR EYES	WITH PLEM	TY OF WA	TER
ANUFACTURER	ME NO. 2	03-356-	2345				- SIS	STS.GET M	EDICAL A	TTENTION.	FOR EYES	
PECIFICATION NO.)-C-114				•	. L C	OCTOR IN	MEDIATEL	Y. INTERN	L-DRINK	LARG
AZ CHARACTERISTO MIT OF ISSUE	LUDE.						. E 4	ATIK OF M	S OF MIL	K OR WATE	COR BEAT	FN
JI CONTAINER QUA	WTITY. 1	OO LBS				•	GGS	5.			. on och	
IN	GREDIENT	S/IDENT	ITY INFORM	ATION + +	•	• • • PREC • • • PREC • STEPS TO BE TAKEN MATL IS RELEASE/S	AUTIONS FO	R SAFE H	ANDLING	AND USE		
IOSH RTECS NO		H348550	0			STEPS TO BE TAKEN	15					
INGREDIENT NO	1 0	ALCIUM	HYPOCHLORI	TE MIXTURE	,MORE THAN 3	MATL IS RELEASE/S						OSE
							- 01	BY FLUSH	ING WITH	VAPORSE S	NOCHIZ OF	MA
CGIN TLV NO		SONE					- 08	NEUTRAL I	ZE WITH	WEAK REDL	KING AGE	NTS
	-	FRICAL					. SUC	H AS HYP	O,BISULF	ITES OR	ERROUS S	AL.T.
••••	31040/04		CHANACIENS	31103	•		76	SODA AS		TO CONTAI		
PPEARANCE AND OC				, GRANULAR,	SLIGHT CHLOR	WASTE DISPOSAL ME	THOD ADD	TO LARG	E VOLUME	OF WATER	, THEN DI	SPOS
OILING POINT	. 1	LA UUS					- E S	OLUTION	TO WASTE	USE VAST	VOLUME	OF C
EVAP RATE & REFER	IENCE N	I.A.					. ISU	LFITES O	R FERROU	S SALTS .	ITH 3M-H	+250
OLUBILITY IN MAT	ER A	PPRECIA	BLE							IZE WITH		
• • • FI	RE AND E	XPLOSIO	HAZARD C	ATA + + +				ARFA.		TO AN APP		
						HANDLING/STORAGE	PREC MIX	ONLY WI	TH WATER	KEEP AWA	Y FROM C	OMBL
XTINGUISHING MED	IA 4	ATER SP	RAY PREFER	ABLE.			- STI	WITH ANY	FORFIGN	RIAL.DO N	USE ONL	YA
PEC FIRE FIGHT P	ROC 0	RESCH	ITH WATERS	COOL THE	SURROUNDING	OTHER PRECAUTIONS	. CLE	AN DRY C	ONTAINER	FOR CL+2		
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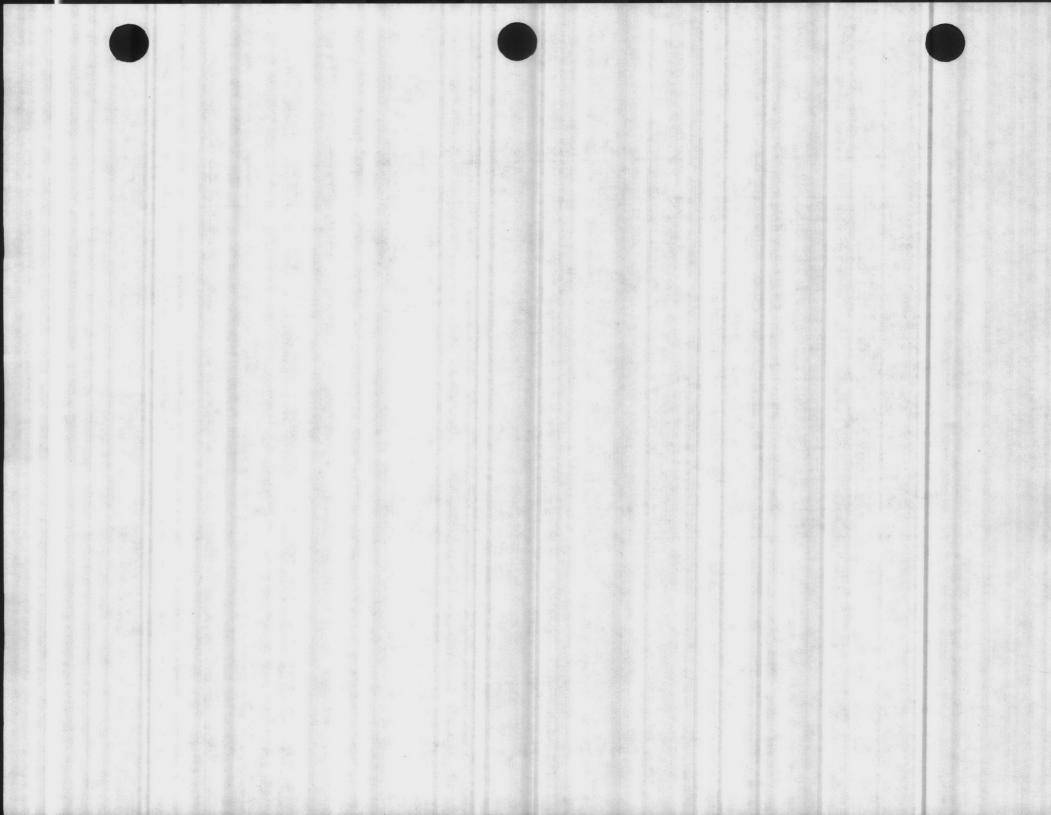


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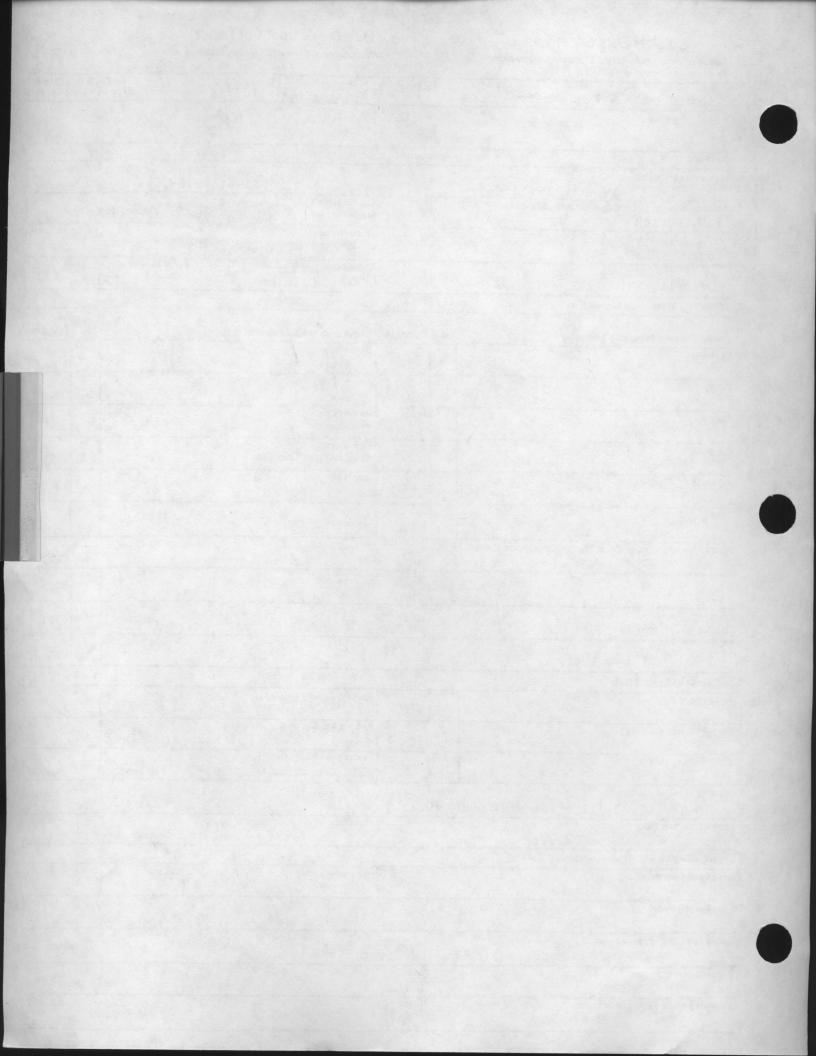
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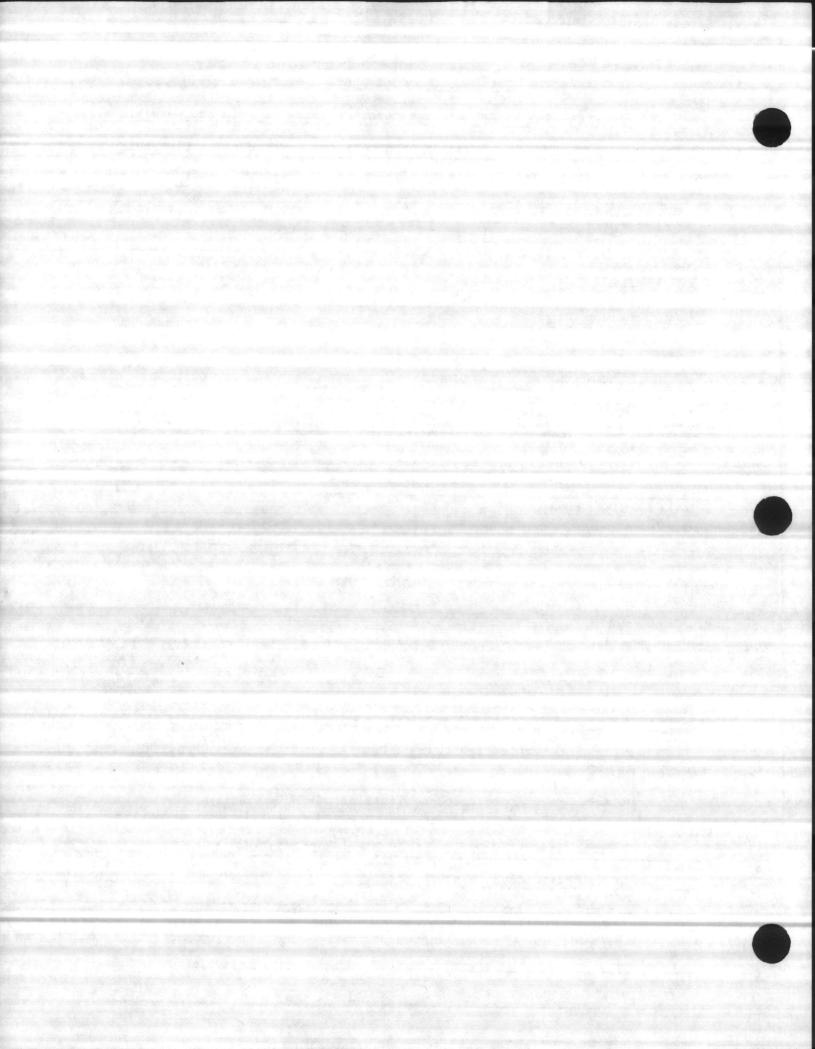
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Becken j			£	
Tenn Luttrell Co.		.1-61	15-992-3841	cy Telephone N
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Hazardoue Mittures of Other Liquids, Solids or Gases				S TLV P
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Index dusty conditions it can cause excessive drying of skin and possible al irritation. Eyes and open cuts are particularly vulnerable. Image: first Add Procession Wash off lime dust with soap and water: Then optionally rinse skin with dily Apply burn ointment to affected areas. For eyes, flush out immediately with see physician. Exceed NI-Ascentry Data Success NI-Ascentry Data Concesses NAVed Yes If subjected to carbon dioxide in moist air and acids Success VI-Ascentry Data Concesses NAVed Success VI-Ascentry Data Concesses NAVed Success VI-Ascentry Data If confined in water-tight containers. Inconsultations in the cids None National Decomposition Process None National Decomposition No. NA Win Noi Occus X Exection VU-Spid er Last Procedures Normal clean up Nasie Deconsid Metrod Can be salvaged for use or deposited in land fill rype dump. Exection VU-Special Proceders Intermition Protective type dust mask Protective type dust mask Protective type dust mask	Instrod Fun	Vale 5 mg/m			Primar Inhala	y route of entry ation - Skin Contact
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DESCRIPTION:

Loctite Removable

Thread locker

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705 North Mountain Road Newington, Connecticut 06111 Telephone: (203) 278-1280 Telex: 275207

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Quick Service Tool Box Part of Kit 00101

MO

Product Name: Removable Threadlocker 242

Formula No.: DNA

Item No.: 242

Product Type: Anaerobic

Loctite Corporation

II. COMPOSITION

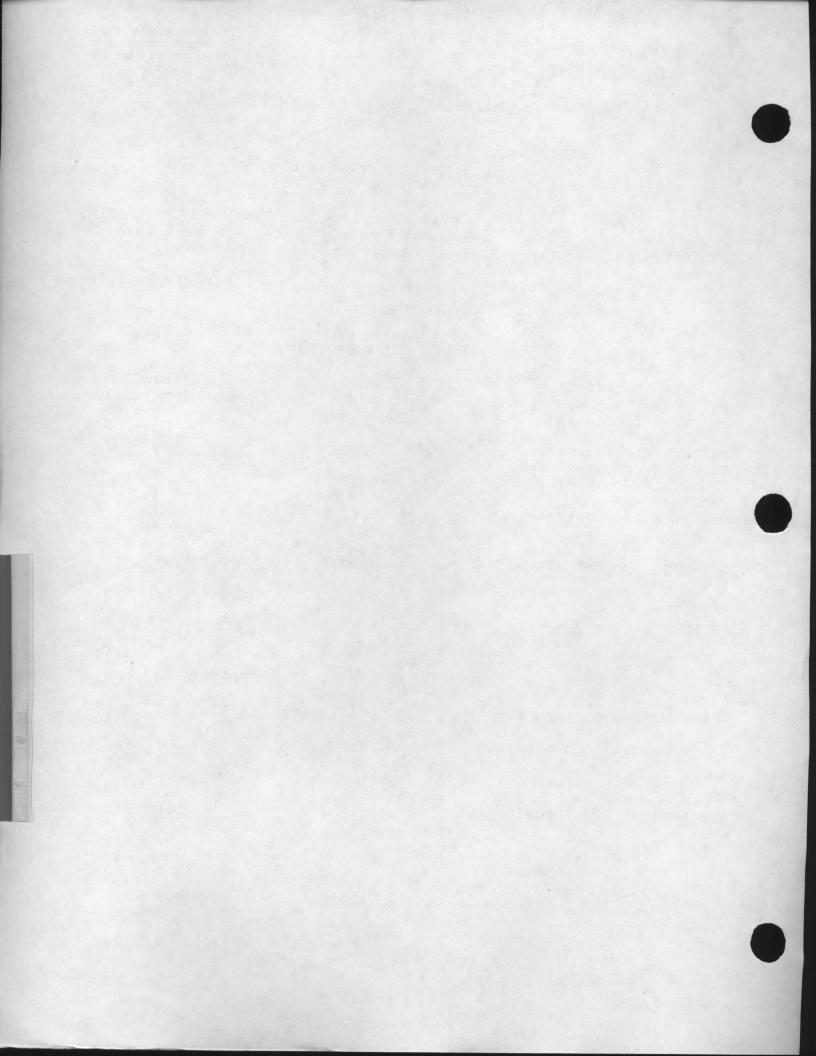
Ingredients	% by Wt.	Hazard
Polyglycol Dimethacrylates	. 60-65	See Section IV
Polyglycol Oleates	25-30	
Saccharin**	3-5	
Silicon Dioxide***	1-3	
Cumene Hydroperoxide*	1-3	
N,N-Dialkyltoluidine	<1	
Methanol****	1-3	
Titanium Dioxide****	<0.5	↓ ↓

See page two for statements on ingredients with asterisks.

III. CHEMICAL AND PHYSICAL PROPERTIES

Vapor Pressure: <5mm @ 80°F	Specific Gravity: 1.1 @ 75°F
Vapor Density: Unknown	Boiling Point: >300 ⁰ F
Solubility in Water: Slight	pH: DNA
Appearance: Blue Liquid	Odor: Mild

Page 1 of 4



REMOVABLE THREADLOCKER 242

mene Hydroperoxide has been shown to cause tumors in experimental mals on injection beneath the skin.

<u>prolonged</u>, high dose ingestion; by injection into the peritoneum; and by implantation beneath the skin. It is also reported to cause adverse reproductive effects in experimental animals on high dose ingestion. <u>***Silicon Dioxide</u> dust has been shown to cause adverse pulmonary effects on inhalation.

<u>****Methanol</u> has been shown to cause adverse reproductive effects in experimental animals upon ingestion.

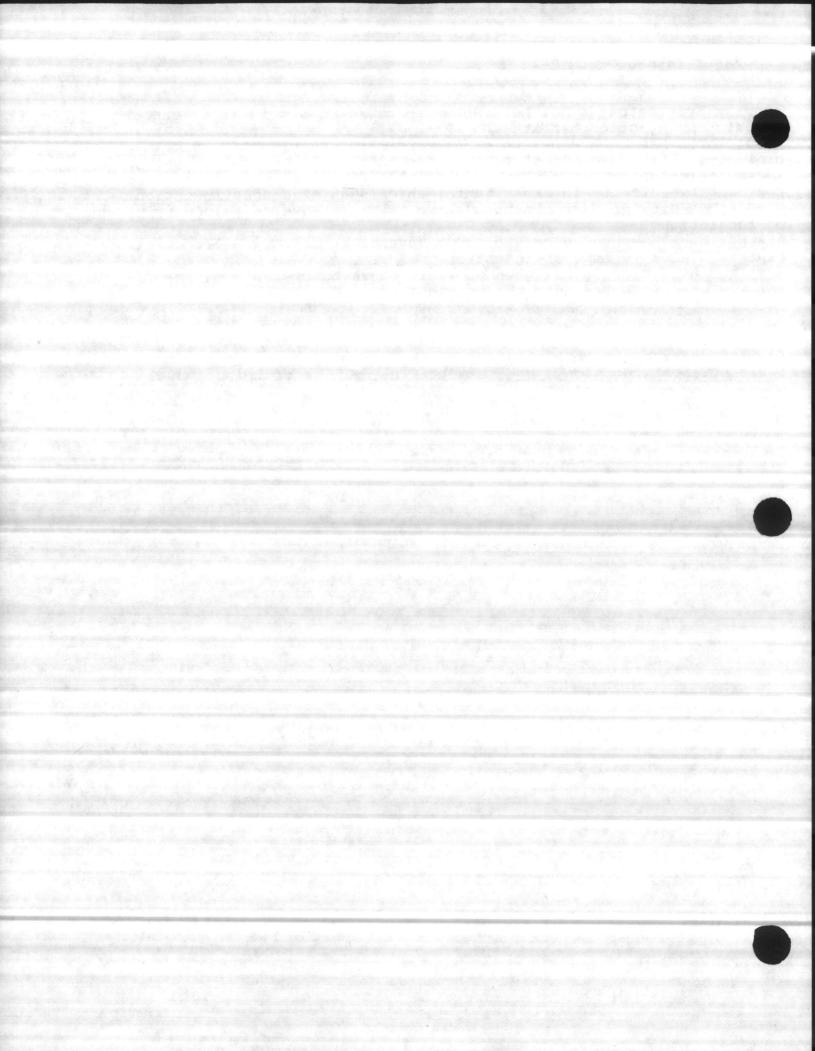
*****Titanium Dioxide has been shown to cause tumors in experimental animals when injected into the muscles.

In light of the low concentration of these components in the product it is our best technical judgement that normal use of this product poses no such hazards.

These statements are present only to comply with OSHA regulations.



101-2



REMOVABLE THREADLOCKER 242



IV. TOXICITY AND HEALTH HAZARD DATA

Toxicity Mild eye irritant. TLV: Methanol = 200 ppm TWA (ACGIH) Oral LD₅₀ >10000 mg/kg; Dermal LD₅₀ >5000 mg/kg

Symptoms of Overexposure May cause dermatitis on prolonged contact in sensitive individuals.

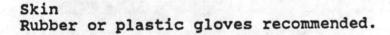
EMERGENCY TREATMENT PROCEDURES Ingestion Do not induce vomiting. Keep individual calm. Obtain medical attention.

Inhalation DNA

Skin Contact Flush with water.

Eye Contact Flush at least 15 minutes with water. Obtain medical attention.

PERSONAL PROTECTION Eyes Safety glasses or goggles recommended



Ventilation DNA

V. FLAMMABILITY AND EXPLOSIVE PROPERTIES

Flash Point: >200°F

Method: TCC

Explosive Limits (% by volume in air) Lower: 6% Methanol Upper: 36%

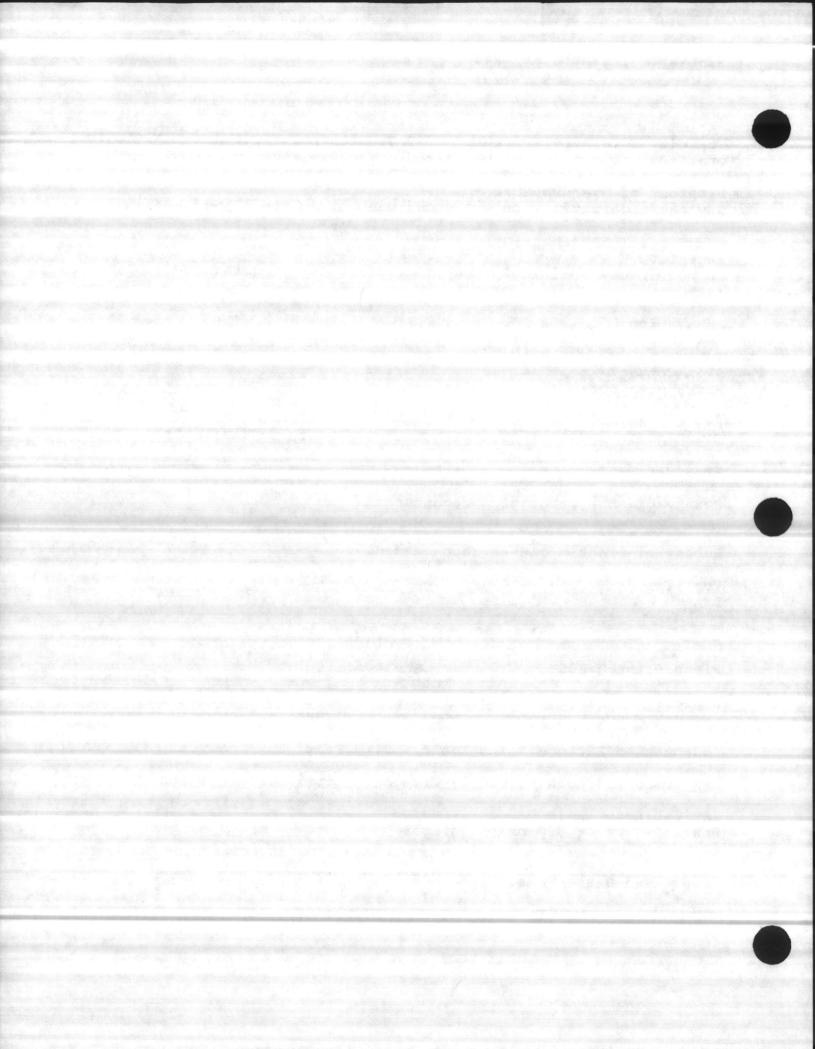
Recommended Extinguishing Agents: CO2, Foam, Dry Chemical

Mazardous Products Formed by Fire or Thermal Decomposition

Irritating organic vapors. Unusual Fire or Explosion Hazards

None Compressed Gases Name: None

Pressure at Room Temperature: DNA



REMOVABLE THREADLOCKER 242



REACTIVITY DATA VI.

X Stable Unstable

Hazardous Polymerization ____May Occur ___X Will Not Occur

Hazardous Decomposition Products (non-thermal)

None

Incompatibility

None

VII. SPILL OR LEAK AND DISPOSAL PROCEDURES

Steps to be taken in case of spill or leak:

Soak up with an inert absorbent. Store in a partly filled, closed container until disposal. Recommended methods of disposal:

Landfill or incinerate following EPA and local regulations.

VIII. STORAGE AND HANDLING PROCEDURES

Storage

Store below 110°F to preserve shelf life.

Handling

Avoid prolonged skin contact.

IX. SHIPPING REGULATIONS

Type or Class DOT: Unrestricted (<5501b.); ORM-E [>5501b]

IATA: Unrestricted (<5501b.); ORM-E [>5501b] Proper Shipping Name: DOT: ORM-E, liquid, n.o.s. (Hydroperoxide, 1-methyl-1-phenylethyl-solution [>5501b.]

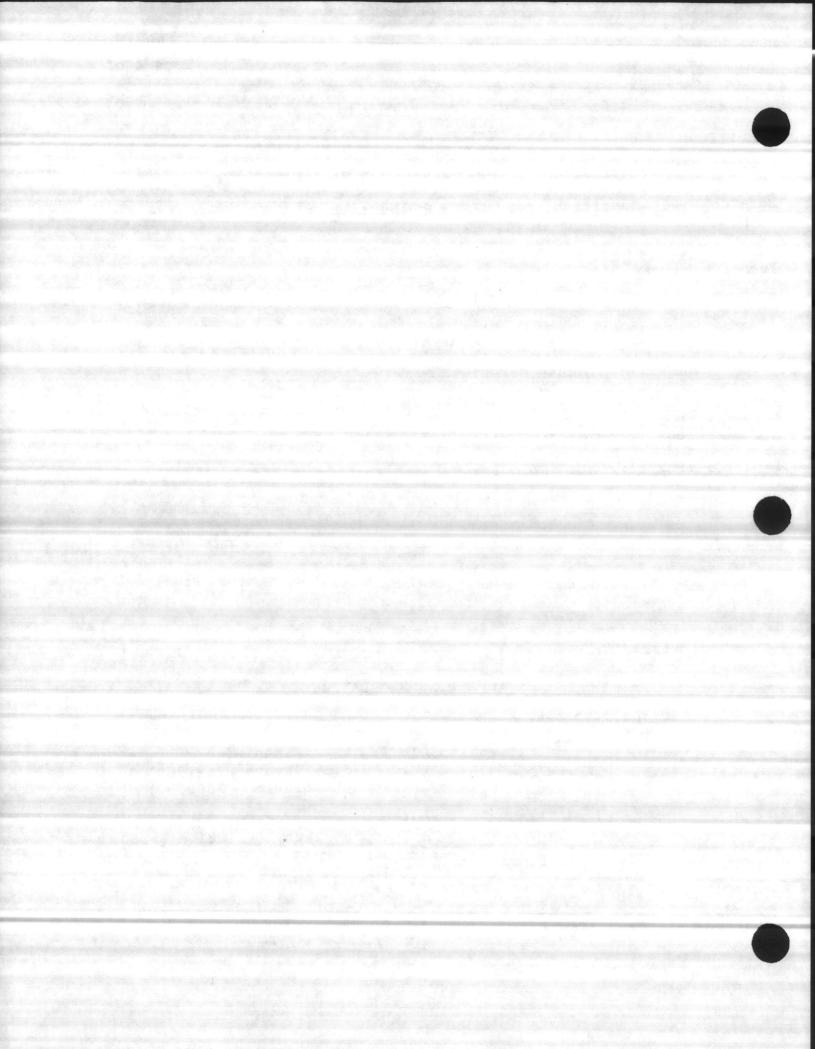
> IATA: ORM-E, liquid, n.o.s. (Hydroperoxide, 1-methyl-1-phenylethyl-solution [>5501b.] in U.S. only.

Prepared By: Stephen Repetto



e: Research Chemist, Environmental Health & Safety

November 16, 1988





705 North Mountain Road Newington, Connecticut 06111 Telephone: (203) 278-1280 Telex: 275207

SARA TITLE III

ADHESIVE/SEALANT 242

242

The ingredients listed below are listed in Section 313 of Title III of the Superfund Amendments and Reauthorization Act.

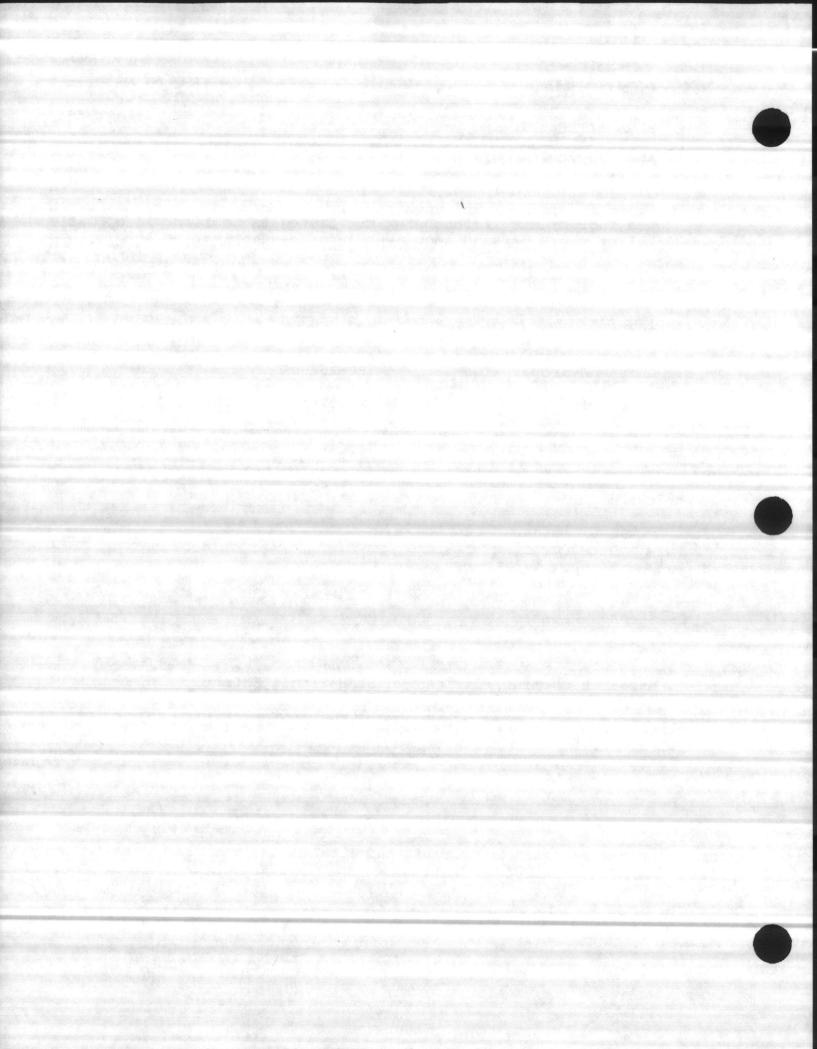
INGREDIENT	CAS NUMBER	AMOUNT	
Cumene Hydroperoxide	80-15-9	`<2	
Saccharin	81-07-2	3-5	

January 1, 1989 ~ Repette

Stephen Repetto

Research Chemist, Environmental Health & Safety

SR/rbh



INTERLUBE INTERNATIONAL

0 Express, Burnaby, B.C. V5A 1T4 ne (604) 420-4838 • Telex: 04-354691 5151 Everest Drive, Mississauga, Ontario L4W 2R2 Phone (416) 624-5636 • Telex: 06-961429

MATERIAL SAFETY DATA SHEET

DESCRIPTION

2 Cycle Lubricant

COMPOSITION

FLASH POINT

VAPOUR PRESSURE

SOLUBILITY IN WATER

HANDLING

Mineral oil with additives to improve lubricating performance.

260°C (average)

Smm Hg @ 20°C

Negligiable

This material presents no significant hazard when used for the purposes intended.

It should be noted that all mineral oils are potentially harmful by prolonged and/or repeated skin contact and hence personal cleanliness is important.

EMERGENCY TREATMENTS

EYE CONTACT

SKIN CONTACT

INGESTION

ASPIRATION

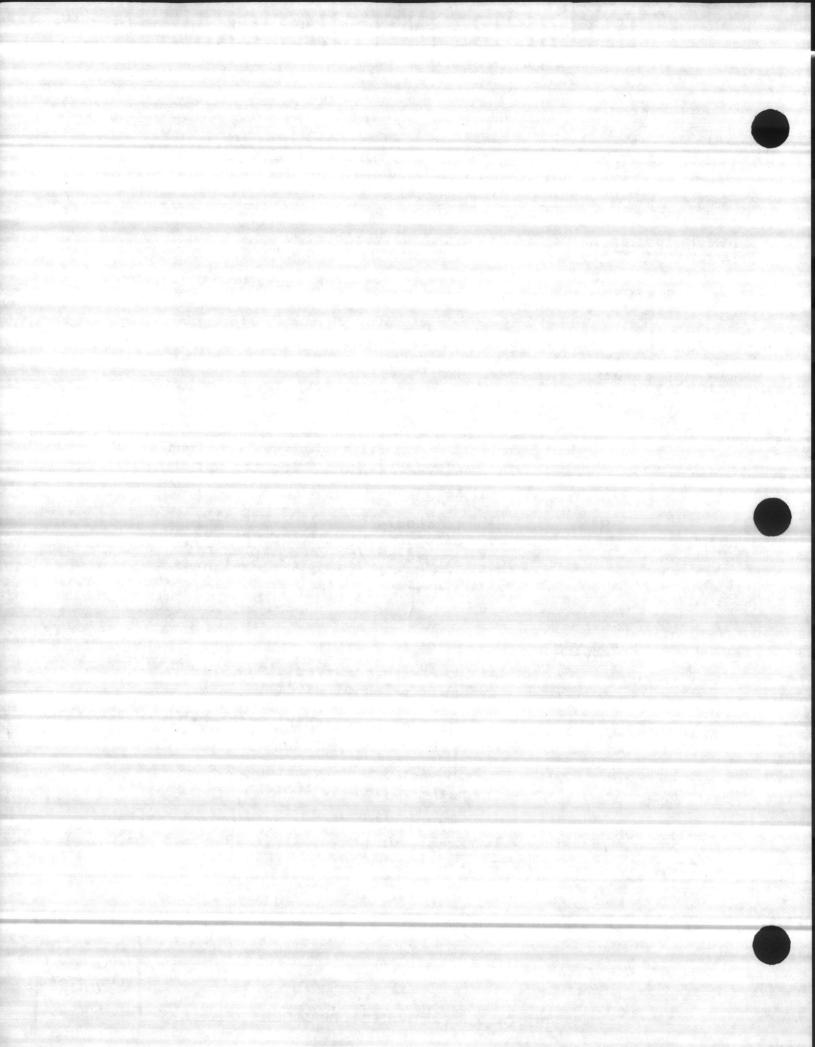
Irrigate the eyes with copious quantities of water.

Wipe off excess and wash with soap and water.

Do not induce vomiting due to risk of aspiration. Obtain medical advice.

If there is any suspicion of aspiration (eg. during vomiting) obtain medical advice urgently.





ECHO TWO-STROKE ENGINE OILS

999888-00083

HARRISON

Harrison Oil Corporation P.O. Box 11696 Milwaukee, Wisconsin 53211

999888-00084	50:1	12 oz. plastic bottle
999888-00085	50:1	5.5 oz. pop-top cans
999888-00086	50:1	5 gallon bottle
999888-00087	50:1	55 gallon drum
999888-00080	32:1	8 oz. pop-top can
999888-00082	32:1	5 gallon bottle

SPECTRUM

32:1

Spectrum Corporation P.O. Box 130 Fulghum Street Hornsby, TN 38044

999888-00078 50:1 5.2 oz. bottle 999888-00079 50:1 2.6 oz. plastic bottle 999888-00081 50:1 2.6 oz. pop-top cans

55 gallon drum

ECHO BAR & CHAIN OIL

HARRISON

 999888-00070
 Bar & Chain oil - 1 quart

 999888-00071
 Bar & Chain oil - 1 gallon

 999888-00072
 Bar & Chain oil - 5 gallon pail

 999888-00073
 Bar & Chain oil - 5 gallon drum

SPECTRUM

 999888-00061
 Bar & Chain oil - 1 quart

 999888-00062
 Bar & Chain oil - 1 gallon

 999888-00063
 Bar & Chain oil - 5 gallon pail

 999888-00064
 Bar & Chain oil - 5 gallon drum

ECHO MAXILUBE

INTERLUBE

Interlube International A Division of Standex Industries Limited 7810 Express, Burnaby, B.C. V5A 1T4 Canada

 999888-00088
 Maxilube - 1.6 oz package

 999888-00089
 Maxilube - 6 oz bottle

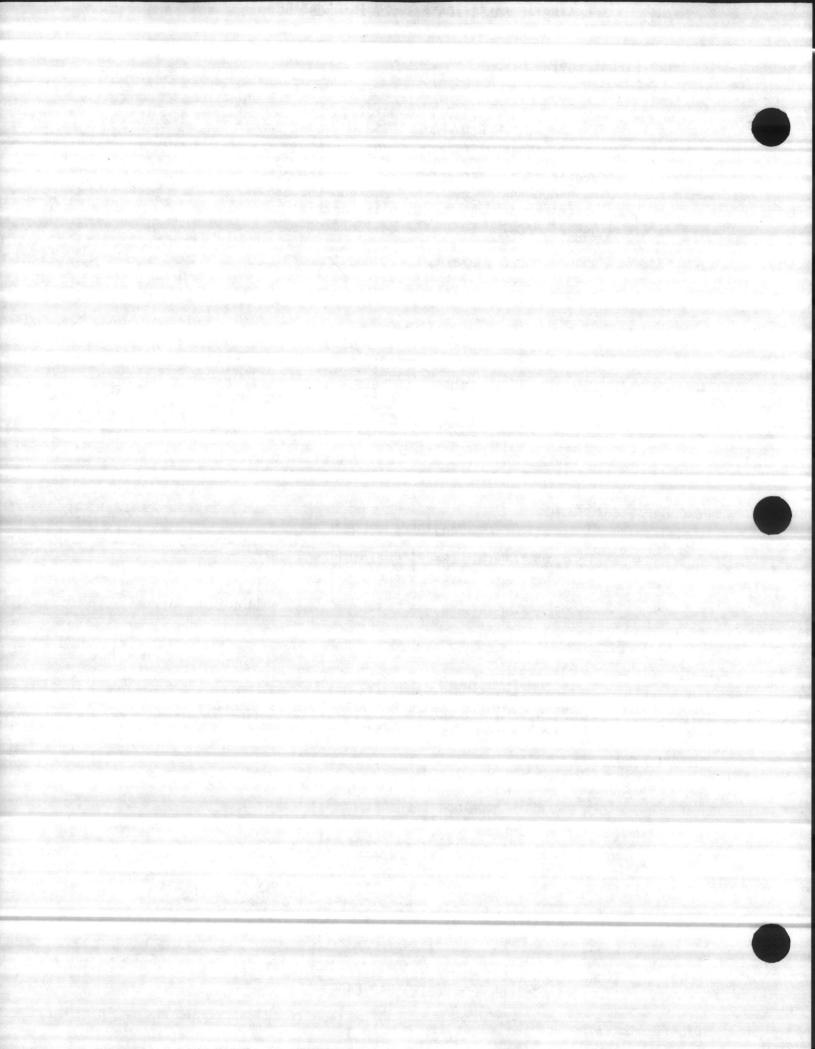
 999888-00098
 Maxilube - 3.2 oz package

ECHO, INCORPORATED, 400 Oakwood Road, Lake Zurich, Illinois 60047 Telephone: (312) 540-8400

OIL4/87.txtcathh.

UPDATED APRIL 22, 1988





DESCRIPTION:

Lubricant, Echo 2 Cycle

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Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be onsulted for specific requirements. U.S. Department of Labor Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072



TITY (As Used on Laber and Liek)	Note. Blank spaces are nor permitted if any laim is not applicable, or no
CYCLE ENGINE OIL	information is available the space must be marked to indicate that.
Section I	

Manufacturer's Name HARRISON OIL CORPORATION	Emergency Telephone Number 414-962-4000	
Address (Number, Street, Cay, State, and ZP Code) 4267 N. Port Washington Rd.	Telephone Number for Information 414-962-4000	
Milwaukee, Wisconsin 53211	Date Prepared January 1, 1987	
	Signature of Preparer (optional)	

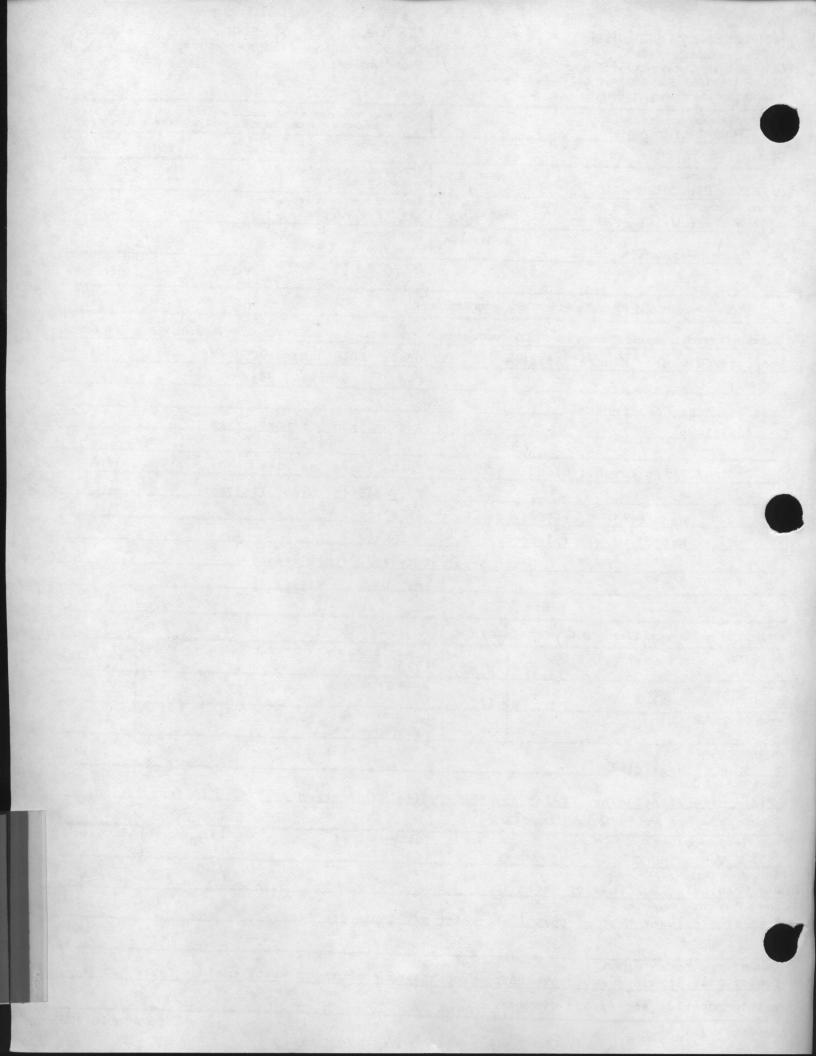
Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	4 (cpcone)
Stoddard Solvent - Mineral Spirits	Oral: LDL	o(Human):500	mg/kg	107
	Cas No.	64742-88-7		
Non-Hazardous Components				
Additives	Eve or Ski	n: Minor Ir	ritant	3-47
	Cas No.	N/A		
Refined Petroleum Oil-Blend	IHLN: 5mg/	m ³ as mist		867
	Eve or Ski	n: Minor Irr	itant	
Naphthenic Distillate Cas No.	64742-53-6			
Petroleum Distillate Cas No.	64742-62-7			
Dye Upper Respire	story and De	rmal Irritan	t	<0.17.
	Cas No.	N/A		

Boling Pant		Specific Gravity (MgO = 1)		
born g Port	N.A.			.911
Vapor Pressure (mm Hg.)		Melling Point	1	
	<20			N.A.
Vapor Density (AIR = 1)		Eveporation Patter		1
	>1	(Buryl Acatalia = 1)		<1
Solubility in Water				
Negligible				
Appetrance and Oddr				
Fluid mineral oil odor. C	olor ASTM 3.5-	Typical blue green dy	e added to fo	mulation_
Fluid mineral oil odor. C		Typical blue green dy	e added to fo	rmulation_
Fluid mineral oil odor. G Section IV - Fire and Explosion H		Typical blue green dy	e added to fo	rmulation
Fluid mineral oil odor. C Section IV - Fire and Explosion H Flash Port (Method Used)		Parmeble Limits		
Fluid mineral oil odor. C Section IV — Fire and Explosion H Fash Port (Method Used) 190° F Typical COC		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		
Appendixes and Odor Fluid mineral oil odor. C Section IV — Fire and Explosion H Fash Port (Method Used) 190° F Typical COC Exergushing Media Dry Chemical, CO ₂ , Foam or	lazard Deta	Parmeble Limits		
Fluid mineral oil odor. C Section IV — Fire and Explosion H Fash Port (Method Used) 190° F Typical COC Extraguating Media Dry Chemical, CO ₂ , Foam or	lazard Deta	Parmeble Limits		
Fluid mineral oil odor. C Section IV — Fire and Explosion H Fash Port (Method Used) 190° F Typical COC Extraguenting Media Dry Chemical, CO ₂ , Foam or Special Fire Figting Procedures	Water fog	Parmable Limits N/A	LE	
Fluid mineral oil odor. C Section IV — Fire and Explosion H Fash Port (Method Used) 190° F Typical COC Entryputhing Media	Water fog	Parmable Limits N/A	LE	
Fluid mineral oil odor. C Section IV — Fire and Explosion H Fash Port (Method Used) 190° F Typical COC Extraguating Media Dry Chemical, CO ₂ , Foam or Special Fire Figtung Procedures	Water fog	Parmable Limits N/A	LE	
Fluid mineral oil odor. C Section N — Fire and Explosion H Flash Port (Method Used) 190° F Typical COC Extraguating Media Dry Chemical, CO ₂ , Foam or Special Fire Figture Procedures	Water fog	Pannable Links N/A r may cause frothing.	LE.	UEL

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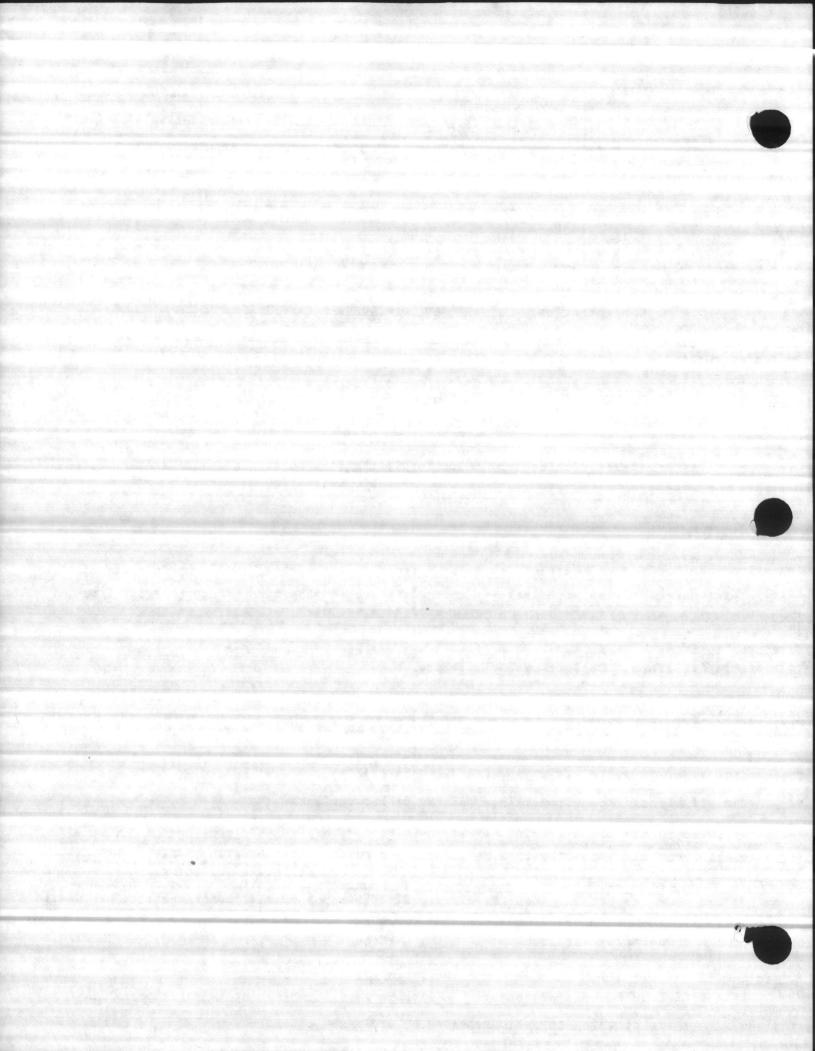
Reproduce locally!



Section V -	Reactivity Date			
	Unstable	Τ.	Conditions to Avoid	depredation depredation
	Stable		Overheating fo	or extended periods will cause exidetive degradation
	and a second second second	X		
	(Materials to Avoid) idizing agent			
lazardous Deco	imposition or Byprod			and the second secon
CO CO2	May Occur	T	Conditions to Avoid	
olymerization	Will Not Occur	-	None	
A Stranger		X		
Section VI -	- Health Hazard	Data	and a second	and some new second
Poure(s) of Entry	y. High Con		Possible in	Sun? Possible with bommon? Do not ingest.
Health Hezards				ty. Contact may cause irritation to sensitive skin.
				tis or oil acne. Inhalation may cause dizziness or
	1		estion may cause	MAC Moncorache? OSHA Regulated?
Carcinogenicity: None	NT	P7		WRC Monographs? OSHA Regulated?
	and all a		and the second	
Signs and Symp	ptoms of Exposure			limonary irritation. ingestion may cause cramps or
				양국가 전신은 전화가 이 것 같아요? 것 같아요. 이 것 같아요? 이 것 같아요. 정말 것 같아요? 그 그 그 그 그 그 그 그 요? 그 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
the second s		conta	tt may cause ski	cin dermatitis or oil acue.
Agon	wated by Exposure	Non	e and the second second	
	and the second se		and the second second	
Emergency and	First Ad Procedure			ins petroleum distillates. Call physician immed-
lately. Ey	ye Contact -1	flush	with large volu	lumes of water&see physician - External-wipe from
				exposed area, wash with soap & water.
	ignition sou			utionary measures for handling lubricating
			llect with absor	
Sector States				
Weste Disposal	Method			
Must be di	isposed of ac	cord	ing to local Sta	ate and Federal regulations.
	in the second			
Precautors to Combustibl	Be Taken in Handing	Rold	temperatures al	bove 50°C (120°F) for prolonged periods. Avoid
				sparks or hot surfaces.
Other Precautio	-		Street Street State 1	
Persons er	sposed to ofl	mist	ts should wear a	approved respirators. Avoid prolonged or
repeated a	kin contact.	Do	not get in eyes	s, wash thoroughly after handling. Never wear
Section VIII	- Control Mea	sures	a service and the service of the ser	oil soaked clothing.
				ired. If high vapor or mist concentrations use dev.
oved	Local Exhaust	ADOT	OT BISTS	Special
	None norma	Concession of the local division of the	required	None
	Mechanical (Gene		lone	Other None
Protective Glov		and the second second	and the second	Eye Protection
Oil resist	ant if long		peated contact	Recommended if aplashing is enticipated
Wear body	-covering of Equip	othin	ng to avoid repa	ested or prolonged exposure
WorkHypenic	Practices			
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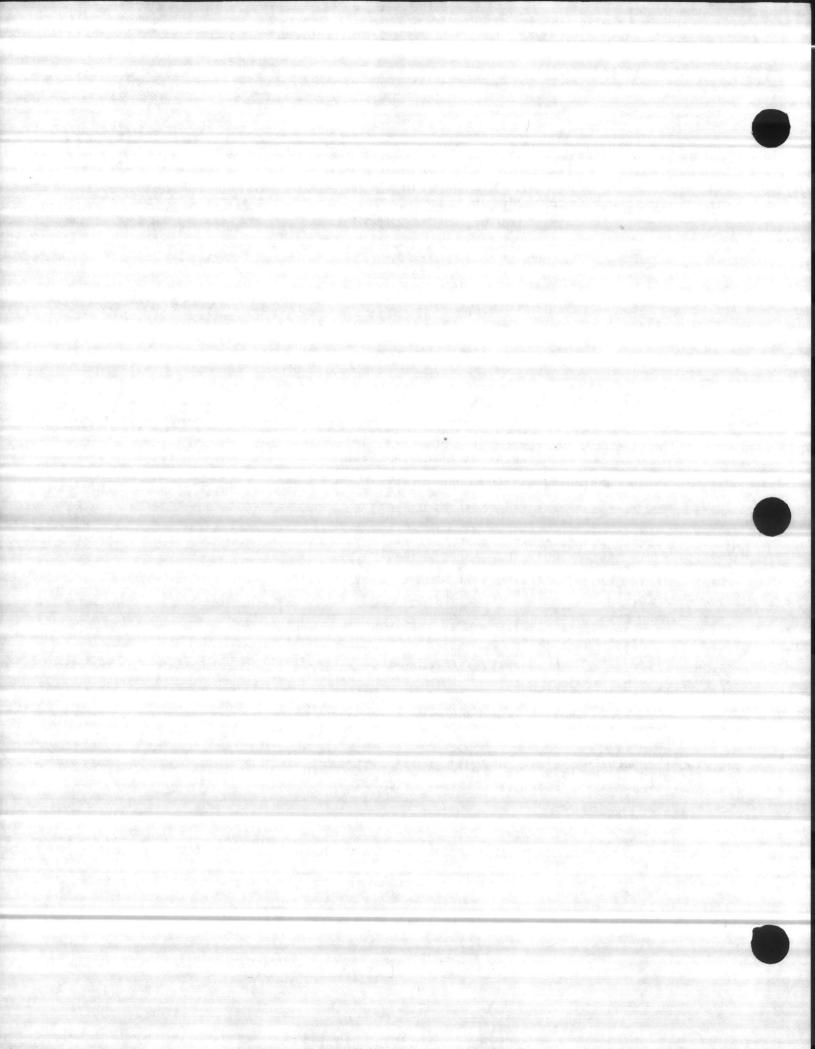
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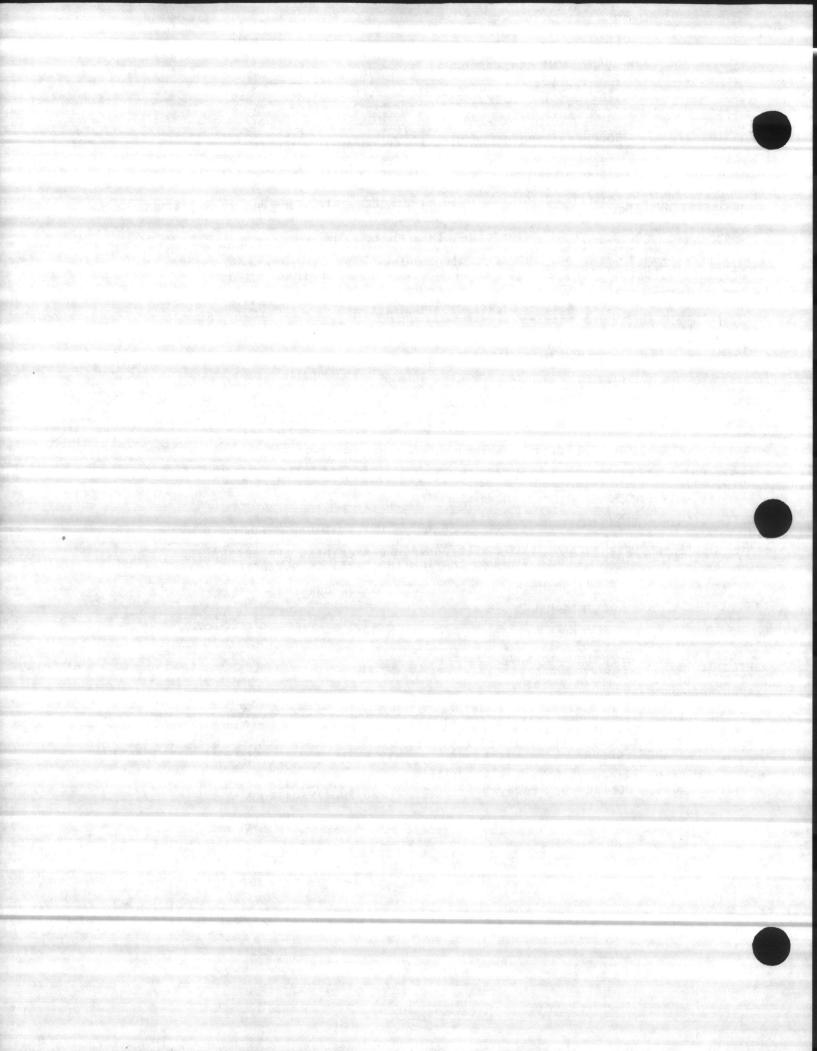
DOW CORNING CORPORATION MATERIAL SAFETY DATA SHEET

MATL NAME: DOW CORNING(R) 111 COMPOUND EMERGENCY TELEPHONE NO. (517) 496 300 the spin of the second SECTION I - GENERAL INFORMATION MANUFACTURERS NAME: DOW CORNING CORPORATION ADDRESS: SOUTH SAGINAW ROAD, MIDLAND MI 48686 10,1 PROPER SHIPPING NAME(49CFR 172.101): NONE D.O.T. HAZARD NAME(49CFR 172.101): NONE D.O.T. ID NO(49CFR 172.101): NONE D.O.T. HAZARD CLASS(49CFR 172.101): NONE D.O.T. HAZARD CLASS(49CFR 172.101): NONE RCRA HAZARD CLASS(40CFR 261)(IF DISCARDED): NONE E.P.A. PRIORITY POLLUTANIS(40CFR 122.53): NONE NFPA = NATIONAL FIRE PROTECTION ASSOCIATION - 704 HEALTH (NFPA): 1 FLAMMABILITY (NFPA): 1 REACTIVITY (NFPA): 0 CAS NO: MIXTURE GENERIC DESCRIPTION: SILICONE : it -SECTION II - HAZARDOUS INGREDIENT NONE PRESENT ONLY THOSE INGREDIENTS LISTED IN THIS SECTION HAVE BEEN DETERMINED TO BE HAZARDOUS AS DEFINED IN 29 CFR 1910.1200. AN INGREDIENT MARKED WITH AN ASTERISK(%) IS ALSO LISTED IN 29 CFR 1910.1200(D) #4 AS KNOWN OR SUSPECTED CARCINOGEN. COMMENT : NONE N. W. M. 8.848 S The station of the state .4. 4



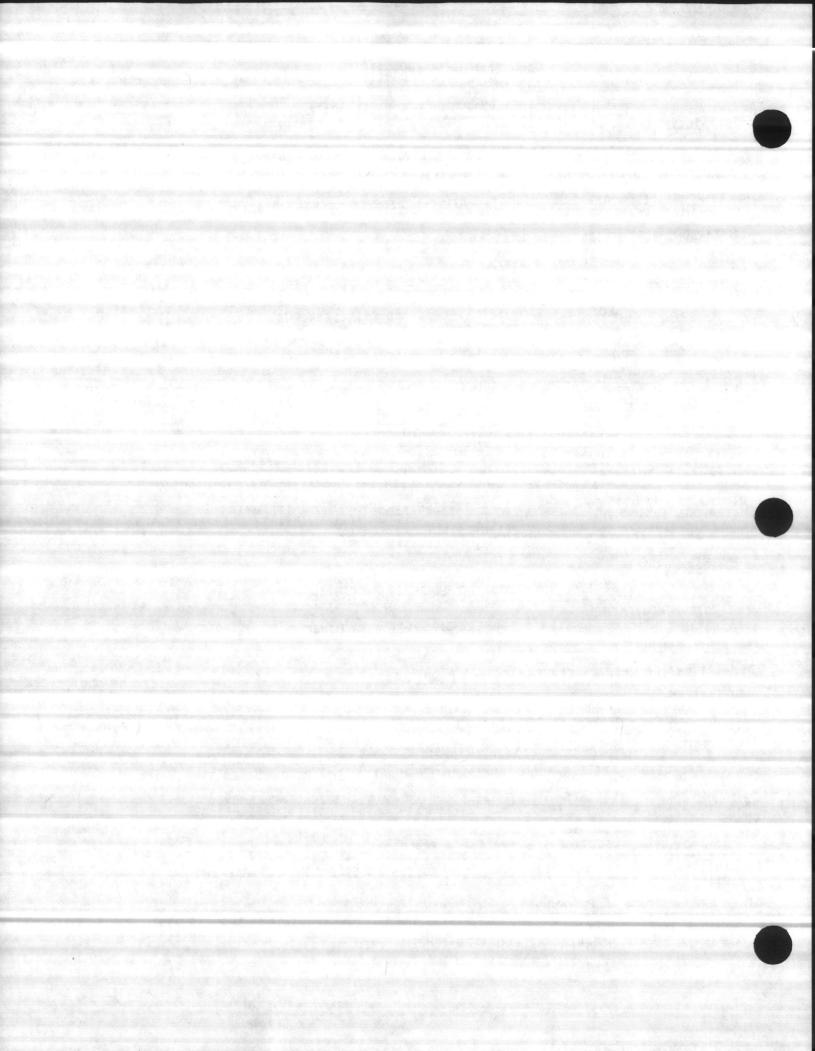
All and an an and an analy an and an an an and an an an and an	a to the	
MATL NAME: DOW CORNING(R) 111 COMPOUND		
SECTION III - EFFECTS OF OV		
EYES: MAY CAUSE TEMPORARY DISCOMFORT.		
SKIN: STACLE PROLONOFR THEREINE		
INHALATION: NO INFRITATION TO NOSE OF THREE THE	N ADVERSE EFFECT.	
INHALATION: NO IRRITATION TO NOSE OR THROAT EXPL Relatively short exposure.		
ORAL: AMOUNTS TRANSFERRED TO THE MOUTH BY FINGER OPERATIONS SHOULD NOT CAUSE INJURY.	and a local second stand of the second state of the second s	
COMMENT: NO KNOWN ADVERSE CHRONIC HEALTH EFFECTS	BUT UNNECESSARY EXTL	
THIS PRODUCT, AS WITH ANY CHEMICAL, MAY ENHANCE PEOFLE. WE DO NOT KNOW OF ANY MEDICAL CONDITION EXPOSURE TO THIS PRODUCT.		
SECTION IV - EMERGENCY AND FIRST		
EYES: FLUSH WITH WATER.	ALD TRUCEDURES	
SKIN: WIPE OFF AND FLUSH WITH WATER.	1	
INHALATION: NO PROBLEM.		
ORALS NO PROBLEM.	a second second from the second	
COMMENT: NONE		
SECTION V - FIRE AND EXPLOS		
	21°C ER: N.D.	
EXTINGUISHING MEDIA: WATER WATER FOG X CO2 X DR	Y CHEMICAL X FOAM X OTHER	
SPECIAL FIRE FIGHTING PROCEDURES: SELE CONTACTOR	Y CHEMICAL X FOAM X OTHER BREATHING APPRARATUS AND FIRES INVOLVING CHEMICALS	
SPECIAL FIRE FIGHTING PROCEDURES: SELF_CONTAINED IN PROTECTIVE CLOTHING SHOULD BE WORN IN FIGHTING	BREATHING APPRARATUS AND FIRES INVOLVING CHEMICALS	
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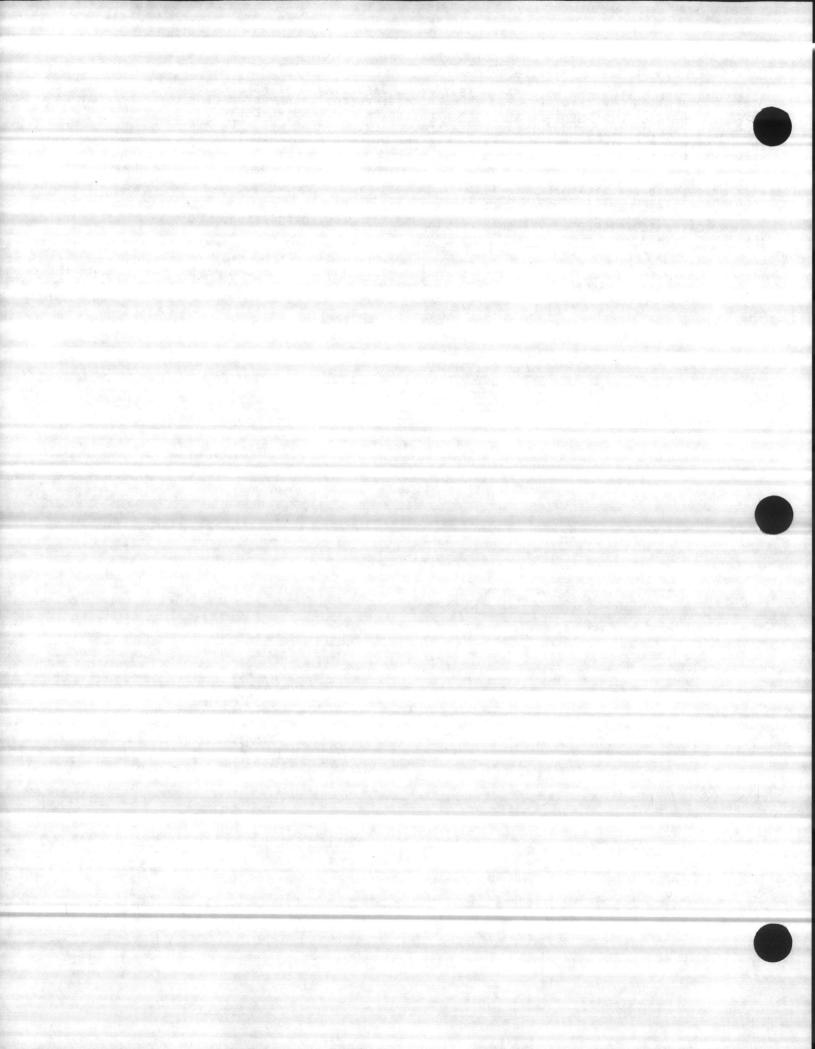


The Similar Station of A State of State of State of State of States 1. 4. AL in the state DOW CORNING CORPORATION MATL NAME: DOW CORNING(R) 111 COMPOUND and a should be SECTION VII - REACTIVITY DATA 114 14 STABILITY: STABLE 1. INCOMPATABILITY (MATERIAL TO AVOID): OXIDIZING MATERIAL CAN CAUSE A REA CONDITIONS TO AVOID: NOT APPLICABLE HAZARDOUS DECOMPOSITION PRODUCTS: SILICON DIOXIDE, CARBON DIOXIDE, ANI OF INCOMPLETELY BURNED CARBON PRODUCTS. HAZARDOUS POLYMERIZATION: WILL NOT OCCUR CONDITIONS TO AVOID: NOT APPLICABLE COMMENTS: NONE SECTION VIII - SPILL, LEAK AND DISPOSAL PROCEDURES STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: REMOVE PROD USE ABSORBENT MATERIAL TO TAKE CARE OF ANY OIL-LIKE RESIDUES. PROTECTIVE EQUIPMENT: EYES: USE PROPER PROTECTION -- SAFETY GLASSES, AS A MININUM. SKIN: WASHING AT MEALTIME AND END OF SHIFT IS ADEQUATE. INHALATION: NO RESPIRATORY PROTECTION REQUIRED. WASTE DISPOSAL METHOD: DOW CORNING SUGGESTS THAT ALL LOCAL, STATE AND FLORA REGULATIONS CONCERNING HEALTH AND POLLUTION BE REVIEWED TO DETERMINE (1990) DISPOSAL PROCEDURES. CONTACT DOW CORNING IF THERE ARE ANY DISPOSAL QUISITUMS. 145. D.O.T. (49CFR 171.8)/E.P.A. (40CFR 117) SPILL REPORTING INFORMATION HAZARDOUS SUBSTANCE: NONE REPORTABLE QUANTITY: NOT APPLICABLE CONCENTRATION OF HAZARDOUS SUBSTANCE: NOT APPLICABLE REPORTABLE QUANTITY OF PRODUCT: NOT APPLICABLE The Martin A South COMMENTS: NONE Y Same 1.5. 1. SECTION IX - ROUTINE HANDLING PRECAUTIONS PROTECTIVE EQUIPMENT: EYES: USE PROPER PROTECTION -- SAFETY GLASSES, AS A MINIMUM. SKIN *: WASHING AT MEALTIME AND END OF SHIFT IS ADEQUATE. wet hat INHALATION: NO RESPIRATORY PROTECTION REQUIRED. . letty estate VENTILATION: in the second second LOCAL EXHAUST: NONE 17 MECHANICAL (GENERAL): RECOMMENDED 7. 1.94 SUITABLE RESPIRATOR: NONE SHOULD BE NEEDED. THESE PRECAUTIONS ARE FOR ROOM TEMPERATURE HANDLING, USE AT ELEVATED TEMPERATURE MAY REQUIRE ADDED PRECAUTIONS. * GOOD PRACTICE REQUIRES THAT GROSS AMOUNT OF ANY CHEMICAL BE REMOVED FROM THE SKIN AS SOON AS PRACTICAL, ESPECIALLY BEFORE EATING OR SMOKING. COMMENTS: NONE "L. Sings SECTION X - SPECIAL PRECAUTIONS 10 14. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: USE REASONABLE CARE AND CAUTION. " Spin OTHER PRECAUTIONS: NONE KNOWN TO DOW CORNING. 1. COMMENTS: TRACES OF FORMALDEHYDE AND OTHER THERMAL DECOMPOSITION PRODUCTS MAY FORM AT TEMPERATURES ABOVE 150C IN THE PRESENCE OF AIR. PROVIDE ADEQUATE VENTILATION WHEN HANDLING AT ELEVATED TEMPERATURES.

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DOW CORNING CORPORATION THESE DATA ARE OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCE PECIFICATION. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS HEREBY MADE. TO MENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED ENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATION THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY AR APPROPRIATE. PREPARED BY JACK L. SHENEBERGER LAST REVISION DATE: SEPTEMBER 27, 1985 PREVIOUS REVISION DATE: FEBRUARY 27, 1981 DATE: NOVEMBER 07, 1985 (R) INDICATES REGISTERED OR TRADEMARK OF THE DOW CORNING CORPORATION. No. 14 in and a Part Second . 4. 1. 11 1.1 · · · Will write and & CONTRACT رقيقة: (كراني) بريام طيعية: مولد روالاربي كرية: 2153 a tente de la companya de la company in a star and the discourse WE REPORT OF THE REAL OF THE 4. Was Landber Warte in college cast. . . Warte in college cast. Mrs day. and the second The state of the for all the a TAL SUCHASTIC CONTRACTOR 14 3.16 Kalen of State



DESCRIPTION:

Manganese Sulfate

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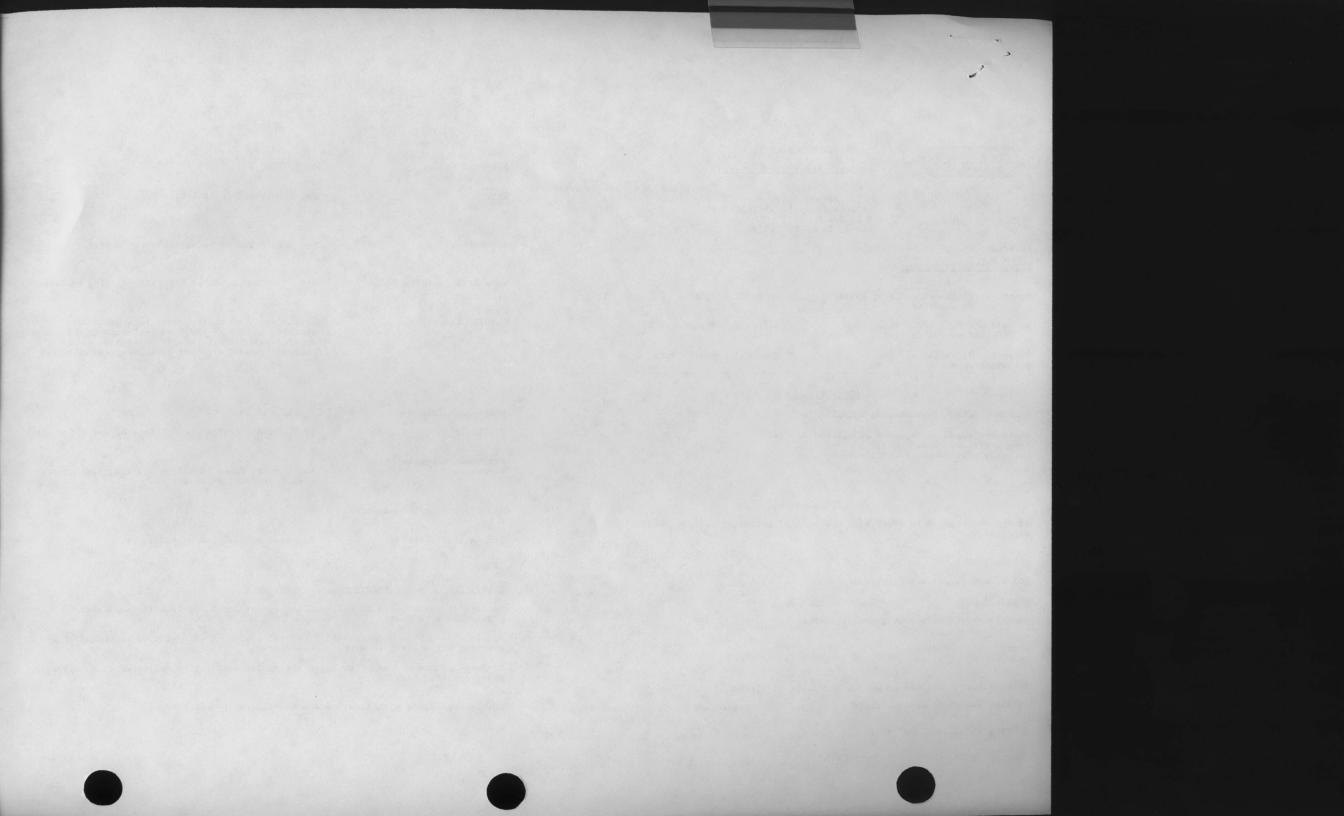
	MANGANESE SULFATE			-2-
Mallinckrodt •	Material Safety Data	Sheet	Fire and Explosion Information	SECTION 2
	Mallinckrodt Inc. Science Products Divi. P.O. Box M Paris, Kantucky 4036		Fire: H.	Not considered to be a fire hazard.
Effective Date: 09-13-85			Explosion:	Not considered to be an explosion hazard.
PRODUCT IDENTIFICATION:				
	e, bydrate; sulfurie ac	14, manganese (2+) selt (1:1),	Fire Extinguishing Media:	Use any means suitable for extinguishing surrounding fire.
Formula CAS No.: 10034-96- TSCA CAS No.: 7785-87-7		ular Weight: 169.01	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
Hazardous Ingredients: Not applicable.	Chemi	cal Formula: MnSO4 H2O		pressure demand or other positive pressure mode.
	PRECAUTIONARY MEASU	RES		
WARNINGI CHRONIC INHALATI			Reactivity Data	SECTION 3
Avoid prolonged or repeate			Stability:	Stable under ordinary conditions of use and storage.
Keep container closed. Use only with adequate ven	•		Hazardous Decomposition Products:	Emits toxic fumes of sulfur and manganese oxides when heated to decomposition.
	EMERGENCY/FIRST AI	D	Hazardous Polymerization:	Will not occur.
If inhaled, remove to fres	h air. Get medical atte	ontion for any breathing		
difficulty.			Incompatibilities:	Powdered metals, strong oxidizers.
SEE SECTION 5.				
DOT Hazard Class: Not Regu	lated		Leak/Spill Disposal Information	SECTION 4
Physical Data	· SECTION 1			
Appearance: Pale pink g	ranular powder.		protection from dust.	1. Clean-up personnel may require respiratory
Odor: Odorless.			Spills: Sweep up and containeri sweeping may be used to avoid d	ize for reclamation or disposal. Vacuuming or wet dust dispersal.
			Disposal: Whatever cannot be sa waste disposal facility.	aved for reclamation may be delivered to an approved
Solubility: Soluble in	water, insoluble in alc	ohol.		
Boiling Point: Decomposes	850°C (1562°F).	Vapor Density (Air-1):No information found.	Ensure compliance with local, a	itate and federal regulations.
Melting Point: 700°C (1292	°F). V	apor Pressure (mm Hg):No information found.		
Density: 2.95		Evaporation Rate:No information found.		

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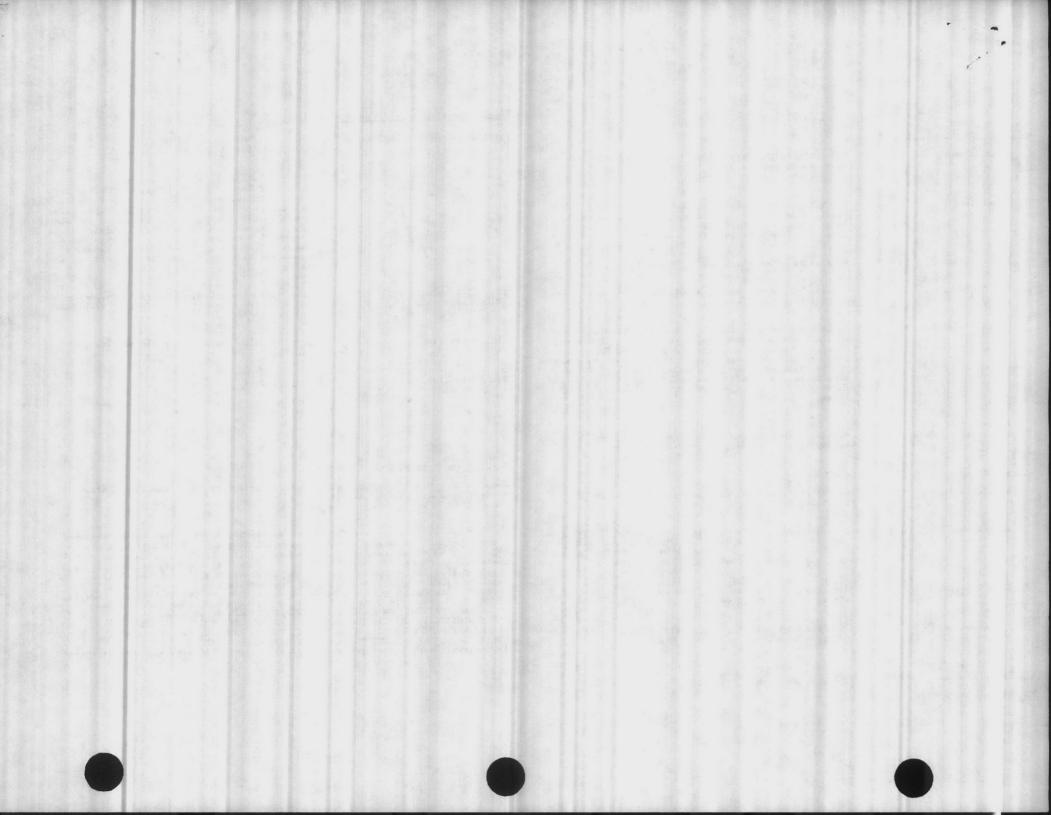
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-cmation *	SECTION 5	Occupational Control Measures	SECTION 6
anDosure/Health Effects		Airborne Exposure Limits:	-ACGIH Threshold Limit Value (TLV):
Whalation:	May irritate the respiratory tract. Absorption of inorganic manganese salts through the lungs is poor but may occur in chronic poisoning.		Smg(Mn)/m ³ (TWA) Ceiling
Ingestion:	Excessive amounts may cause abdominal pain and nausea. Poorly absorbed through the gut, inorganic manganese salts may produce hypoglycemia and decreased calcium blood levels should absorption occur.	Ventilation System:	A system of local exhaust is recommended to keep employee exposures below the Airborne Exposure Limi Local exhaust ventilation is generally preferred because it can control the emissions of the dust or vapor at its source, preventing dispersion of it in the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of
Skin Contact:	No adverse effects expected.		Recommanded Practices", most recent edition, for details.
Eye Contact:	No adverse effects expected but dust may cause mechanical irritation.	Pesonal Respirators: (NIOSH Approved)	If the TLV is exceeded, a dust/mist respirator may worn up to ten times the TLV. Consult respirator supplier for details.
Chronic Exposure:	Chronic manganese poisoning can result from excessive inhalation exposure to manganese dust and involves impairment of the central nervous system. Early symptoms include sluggishness, sleepiness, and weakness in the legs. Advanced cases have shown fixed facial	Skin Protection:	Wear protective gloves and clean body-covering clothing.
	expression, emotional disturbances, spastic gait, and falling. Repeated ingestions may cause lethargy and	Eye Protection:	Safety glasses.
	edens.		Maintain eye wash fountain and quick-drench facilit in work area.
Aggravation of Pre-existing Conditions:	Persons with impaired respiratory function may be more susceptible to the effect of this substance.		
FIRST AID		Storage and Special Information	SECTION 7
Inhelation:	Remove to fresh air. Get medical attention for any breathing difficulty.	Keep in a tightly closed contai Protect against physical damage	iner, stored in a cool, dry, ventilated area.
Ingestion:	If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.	be correct as of the date hered sentation as to the comprehensi expected that individuals recei	in is provided in good faith and is believed to of. However, Mallinckrodt, Inc. makes no repre- veness or accuracy of the information. It is ving the information will exercise their in-
Skin Exposure:	Wash exposed area with soap and water. Get medical advice if irritation develops.	of any kind resulting from the NO REPRESENTATIONS. OR WARRANTI	ing its appropriateness for a particular irodt, Inc. will not be responsible for damages use of or reliance upon such information. ES. EITHER EXPRESS OR IMPLIED, OF
Eye Exposure:	Wash thoroughly with running water. Get medical advice if irritation develops.	HEREIN OR TO THE PRODUCT TO UNIT	PARTICULAR PURPOSE OR OF ANY OTHER RESPECT TO THE INFORMATION SET FORTH CH THE INFORMATION REFERS.

No information found.





DESCRIPTION:

Caustic Soda - Sodium

hydroxide

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OCEANSM Network SAFETY DATA

EMERGENCY PHONE 1-800-OLIN-911

SECTION I - IDENTIFICATION

NICAL NAME & SYNONYMS Sodium Myeroxide 50% Commerciel Brade Caustic Soda				
CHEMICAL FAMILY FORMULA		TRADE NAME Caustic Soda 50% Commercial Grade		
DESCRIPTION Clear colorless solution		CAS ND. 1310-73-2		

SECTION II -- NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Avoid contact with eyes, skin or clothing. Do not'take internally. Upon contact with skin or eyes, wash off with water. Avoid breathing mist. Store in a cool, well-ventilated place. Separate from acids, metals and explosives.

PROTECTIVE EQUIPMENT	VENTILATION REQUIREMENTS ,
EYES Goggles or face shield GLOVES Neoprene, rubber, Bunz-N	As required to keep airborne concentrations below TLV.
OTHER Coverails and impervious boots	

SECTION III - HAZARDOUS INGREDIENTS

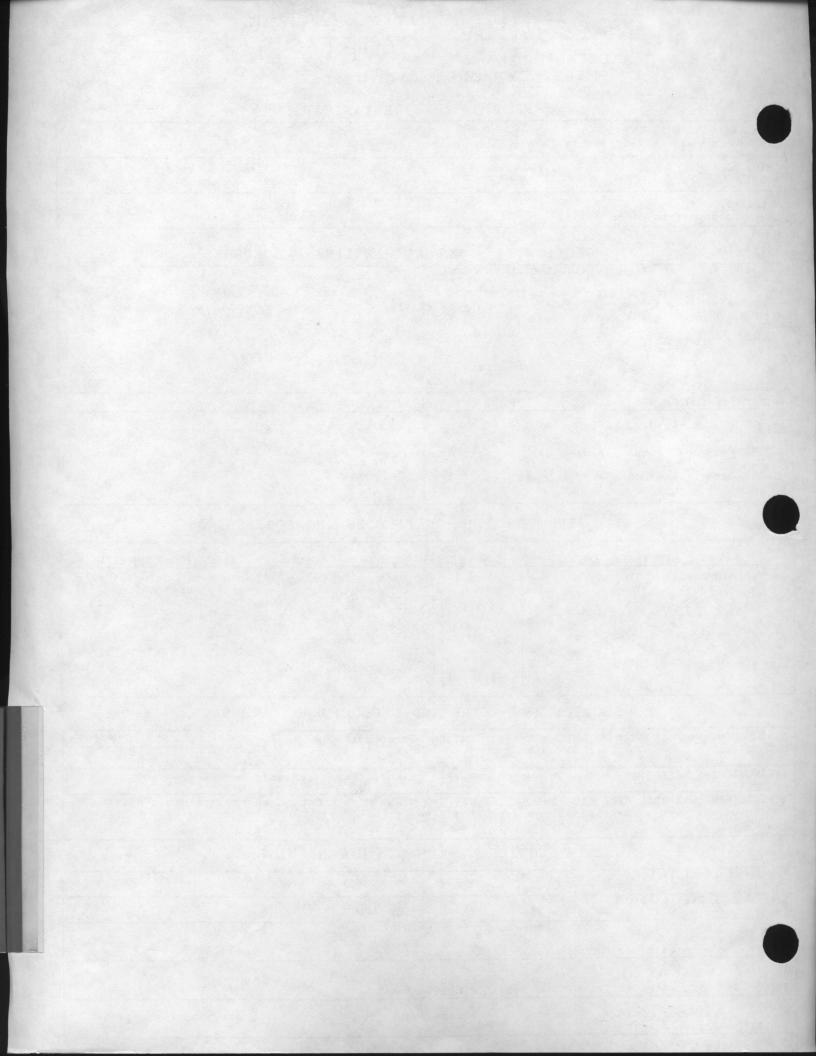
BASIC MATERIAL	OSHA PEL	LD50	LC50	SIGNIFICANT EFFECTS		
Sodium hydroxide	2 mg/m3	NO date	No data	Rapid destruction of all tissue contacted		
	•		1.25	·		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT Not applicable . METHOD	OSHA CLASSIFICATION Non-combustible	FLAMMABLE EXPLOSIVE LIMIT	UPPER N.D.
materials.	Stible - Choose extinguishing media sui	table for su	
	SECTION V - HEALTH HAZARD		

THRESHOLD LIMIT VALU	
Ceiling value 2 mg/m	3 NAOH (ACGIH 1985-86)
SYMPTOMS OF OVER EXPI	DSURE
Tauses burns to all	tissues_contacted
· ·	EMERGENCY FIRST-AID PROCEDURES
Flush with wate	r for 15 minutes, call a physician.
-	
EYES FLUSH with wate	r for 15 minutes, call a physician.

Wash out mouth with water. Drink large quantities of water Dc not induce vomiting. INGESTION Call a physician



SECTION VI - TOXICOLOGY (PRODUCT)

ACUTE DRAL LD 50 NC Data ACUTE DERMAL LD 50 No data ACUTE INHALATION LC 50 No data

CARCINOGENICITY Not known to be carcinogenic MUTAGENICITY Not known to be mutagenic EYE IRRITATION Corrosive PRIMARY SKIN IRRITATION Corrosive

PRINCIPAL ROUTES OF ABSORPTION Inhalation, skin contact

EFFECTS OF ACUTE EXPOSURE

Burns to exposed tissue frequently resulting in deep ulceration.

EFFECTS OF CHRONIC EXPOSURE None except those secondard to tissue damage.

SECTION VII - SPILL AND LEAKAGE PROCEDURES (CONTROL PROCEDURES)

ACTION FOR MATERIAL RELEASE OR SPILL

Wear NIOSH/MSHA approved dust/mist respirator. Follow DSHA regulations for respirator use (see 29 CFR 1910.134). Wear goggles, coveralls and neoprene, rubber, Buna-N or butyl rubber gloves and boots. Add non-reactive dry absorbent such as diatomaceous earth. Shovel or sweep up and place in an approved DOT container and seal. Wash all contaminated clothing before reuse. In the event of a large spill, call the emergency telephone number shown on the front of this sheet.

TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate Federal, State and local regulatory agencies to ascertain proper disposal procedures.

SECTION VIII - SHIPPING DATA

Sodium Hydroxide Solution Corrosive Material UN 1824 D.O.T.

SECTION IX - REACTIVITY DATA

	HAZARDOUS	MAY OCCUR	The second second for
STABLE X UNSTABLE ATC F	POLYMERIZATION	WILL NOT OCCUR	X
CONDITIONS TO AVOID	n na sana na s Na		
NORE KNOWN INCOMPATIBILITY(MATERIAL TO AVOID)			
Acids			

HAZARDOUS DECOMPOSITION PRODUCTS

None known

SECTION X - PHYSICAL DATA

BOILING POINT 142-148' C SOLUBI	PRESSURE NO DATA	EVAPORATION RATE NO data
SPECIFIC GRAVITY (H2D=1 No data PH > 1	2	VAPOR DENSITY (AIR=1) No data
	466380C3 FURNISHED	BY DATE NOVEMBER 27. 1985

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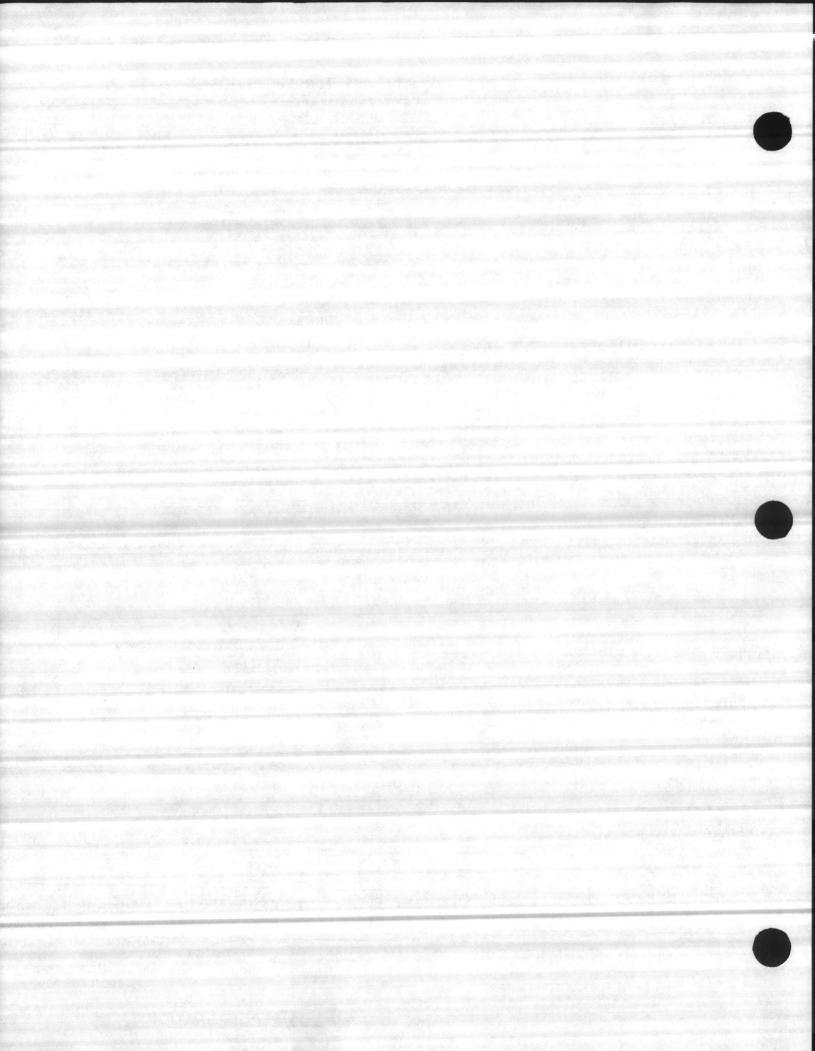
C .. .

Department of Environmental Hygiene and Toxicology

ATTN: DEPT HANDLING MATL SAFETY DATA SHEETS EN CEE CHEMICALS SALES NEW BERN NC 28560

(203) 789-5436 CORPORATION

120 Long Ridge Road. Stamford. Connecticut 06904



Product Safety Information

SODIUM HYDROXIDE, SOLUTION

(Caustic Soda)

This Product Safety Information Sheet is principally directed to managerial, safety, hygiene and medical personnel. The description of physical, chemical and toxicological properties and handling advice is based on experimental results and past experience. It is intended as a starting point for the development of safety and health procedures.

I. PHYSICAL AND CHEMICAL PROPERTIES

Formula: NaOH - Aqua

Formula Weight: 40.00 (Solute)

Physical State: Liquid (20° C/68° F) Color: Water white to slightly colored and turbid Odor: None

Boiling Point: 142-148° C/288-298° F (50% Solution) Specific Gravity of Liquid: (50% Solution) 1.525 at 20° C/68° F (water 1.0)

Water Solubility: Miscible in all proportions pH: Approximately 14

II. CHEMICAL REACTIVITY

Sodium Hydroxide Solution will react with water and acids to generate a considerable amount of heat; boiling and spattering of hot Sodium Hydroxide Solution may result. The solution can react violently or explosively with many organic chemicals. Sodium Hydroxide Solution can react with some metals to form flammable hydrogen gas.

This material, upon contact with certain food products or their residues which contain certain reducing sugars, may react to form deadly carbon monoxide gas. Proper tank entry and occupancy procedures should be observed. Monitor tank atmosphere for the presence of carbon monoxide gas.

III. STAB!LITY

Sodium Hydroxide Solution is stable at ambient temperatures and atmospheric pressures. To avoid generation of excessive heat, or boiling and spattering of Sodium Hydroxide Solution, prevent contact of the material with water and acids. To avoid a possible explosive reaction, prevent contact of Sodium Hydroxide Solution with organic chemicals.

IV. FIRE HAZARD

Sodium Hydroxide Solution will not burn or support combustion.

V. FIREFIGHTING TECHNIQUE

Use standard firefighting techniques in extinguishing fires Involving Sodium Hydroxide Solution. If tank is not leaking, keep cooled with a water spray. This will minimize tank corrosion due to hot Sodium Hydroxide Solution. It will also minimize possible tank rupture which will result in spills.

As in any fire, prevent human exposure to fire, smoke, fumes, or products of combustion. Evacuate all nonessential personnel from the fire and smoke area.

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VI. TOXICOLOGY

Sodium Hydroxide Solution causes burns on contact with all body tissues, frequently with deep ulceration and ultimate scarring. Swallowing usually results in severe injury. Multiple small burns can result from exposure to its mist. Contact with the eyes very rapidly causes severe damage. Inhalation of mists of this chemical is capable of causing injury to the entire respiratory tract.

Ingestion

Ingestion of Sodium Hydroxide Solution results in severe damage to the mucous membranes or deeper tissues on contact. As a result, perforation of these tissues may follow with subsequent severe and extensive scar formation. Death may result if penetration into vital areas occurs. Scarring may so constrict or destroy damaged tissues that extensive corrective surgery may be required.

Eye Contact

Contact with the eyes very rapidly causes damage which may be followed by total loss of sight.

Skin Contact

Sodium Hydroxide Solution exerts a marked corrosive action on contact with the skin. Severe burns with deep ulceration and ultimate scarring may result. The chemical is a strong, primary irritant and multiple small burns may result from exposure to its mist. Even dilute solutions, on prolonged contact, exert a destructive effect on tissues, and may lead to severe dermatitis.

Inhalation

Inhalation of mists of this chemical may cause damage to the upper respiratory tract and even to the lung tissue

In case of suspected Sodium Hydroxide Solution poisoning, refer to the procedure and emergency contacts in Section VII-FIRST AID.

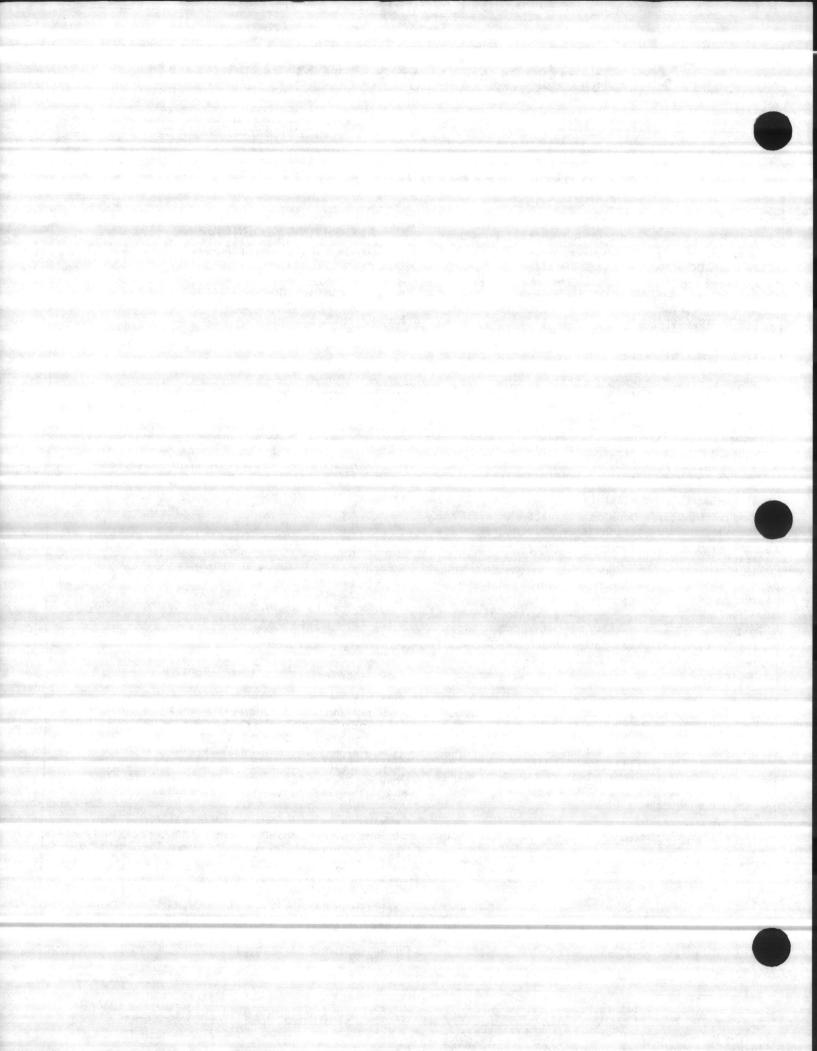
In case of spillage, refer to procedure and emergency contacts in Section IX-SPILL HANDLING. In case of animal poisoning, call a veterinarian or call collect, day or night, (203) 226-6602 (Stauffer Chemical Company) or (800) 424-9300 (Chemtrec)

In case of contamination of other materials with Sodium Hydroxide Solution call (800) 424-9300 (Chemtrec).

formation is offered in good faith, without quarantee or obligation for the accuracy or sufficiency of or the results obtained and is accepted at users risk. The uses referred to are for the purpose ustration only user should investigate and establish the suitability of such users) in every case ing herein shall be cursifued as a recommendation for uses which infringe valid patients or as



STAUFFER CHEMICAL COMPANY BASIC PRODUCTS GROUP Westport, Connecticut 06881





proper, depending upon the severity of the exposure. The effects of inhalation may vary accordingly from mild irritation of the nasal mucous membranes to severe pneumonitis.

Threshold Limit Value (TLV)

The American Conference of Governmental Industrial Hygienists has established a TLV of 2 mg/m³ for Sodium Hydroxide Solution.

For Stauffer Reference Only: T-4037, T-4054

VII. FIRST AID

CALL A PHYSICIAN IMMEDIATELY

If a known exposure occurs or is suspected, immediately initiate the recommended procedures below. Simultaneously contact a physician, the nearest hospital, or the nearest Poison Control Center. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms and follow the advice given. For additional information, call collect, day or night, Stauffer Chemical Company (203) 226-6602 or Chemtrec (800) 424-9300.

Ingestion

Do NOT induce vomiting. Immediately give large quantities of water. If vomiting does occur, give fluids again. Never give anything by mouth to an unconscious person. Call a physician or the nearest Poison Control Center immediately.



Eye Contact

Immediately flush the eyes with large quantities of running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Do not attempt to neutralize with chemical agents. Obtain medical attention as soon as possible. Oils or ointments should not be used. Continue the flushing for an additional 15 minutes if the physician is not immedia ely available.

Skin Contact

Immediately remove contaminated clothing under a safety shower. Flush all affected areas with large amounts of water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Obtain medical advice immediately.

Inhalation

Remove from contaminated atmosphere. If breathing has ceased, clear the victim's airway and start mouth-tomouth artificial respiration, which may be supplemented by the use of a bag-mask respirator, or a manually-triggered, oxygen supply capable of delivering 1 liter/second or more. If the victim is breathing, oxygen may be administered from a demand-type or continuous-flow inhalator, preferably with a physician's advice. Contact a physician immediately.

VIII. INDUSTRIAL HYGIENE

Indestion

All food should be kept in a separate area, away from the working location. Eating, drinking, smoking and carrying of tobacco products should be prohibited in areas where there is a potential for exposure to the product. Before eating, hands and face should be thoroughly washed.



Inhalation

This material should only be handled in open areas. Where adequate ventilation is not available and there is a possibility of vapor, acrosol or mist generation, control of innation exposures can be achieved through the use of a NIOSH-approved full-face piece, cartridge, air-purifying respirator.

Dermal Contact

Dermal contact and exposure should be prevented through the use of impervious clothing, gloves, footwear and a face shield where splattering of the material may occur.

Eye Contact

Eye contact should be prevented through the use of chemical safety glasses, goggles, or a face shield.

IX. SPILL HANDLING

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices (refer to Section VIII). A small spill can be handled routinely considering the

physical and hazardous properties of the product as well as the location of the spill. Use adequate ventilation or wear an air-supplied respirator to prevent inhalation contact. Wear protective clothing to prevent skin and eye contact. Use the following procedures for Sodium Hydroxide Solution:

Small spills should be flushed with a water spray. Dilute acid (preferably acetic acid) may be used to neutralize the final traces of caustic immediately after flushing.

An abundant water supply (preferably running water) should be available for emergency use to dilute and flush away spilled caustic soda wherever it may be stored, unloaded, handled or used.

Large spills should be handled according to a predetermined plan. For assistance in developing a plan, contact Stauffer Chemical Company, Westport, CT 06880.

IN CASE OF EMERGENCY, CALL, DAY OR NIGHT (800) 424-9300 (CHEMTREC)

X. CORROSIVITY TO MATERIALS OF CONSTRUCTION

Sodium Hydroxide Solution is noncorrosive to rubber at atmospheric temperatures. The solution is slowly corrosive to iron and copper and will attack a few metals such as aluminum, tin, zinc, and alloys containing these metals. The solution may pick up quantities of these and other metal impurities which could render it harmful for some uses. At elevated temperatures, the solution causes caustic embrittlement of steel. It will also attack wool and leather clothing.

XI. STORAGE REQUIREMENTS

The following safety facilities should be readily accessible in all areas where Sodium Hydroxide Solution is handled or stored:

Salety Showers - with quick opening valves which stay open. Water should be supplied through insulated lines to prevent freeze-ups in cold weather.

Eye Wash Fountain-or other means of washing the eyes with a gentle flow of tap water.

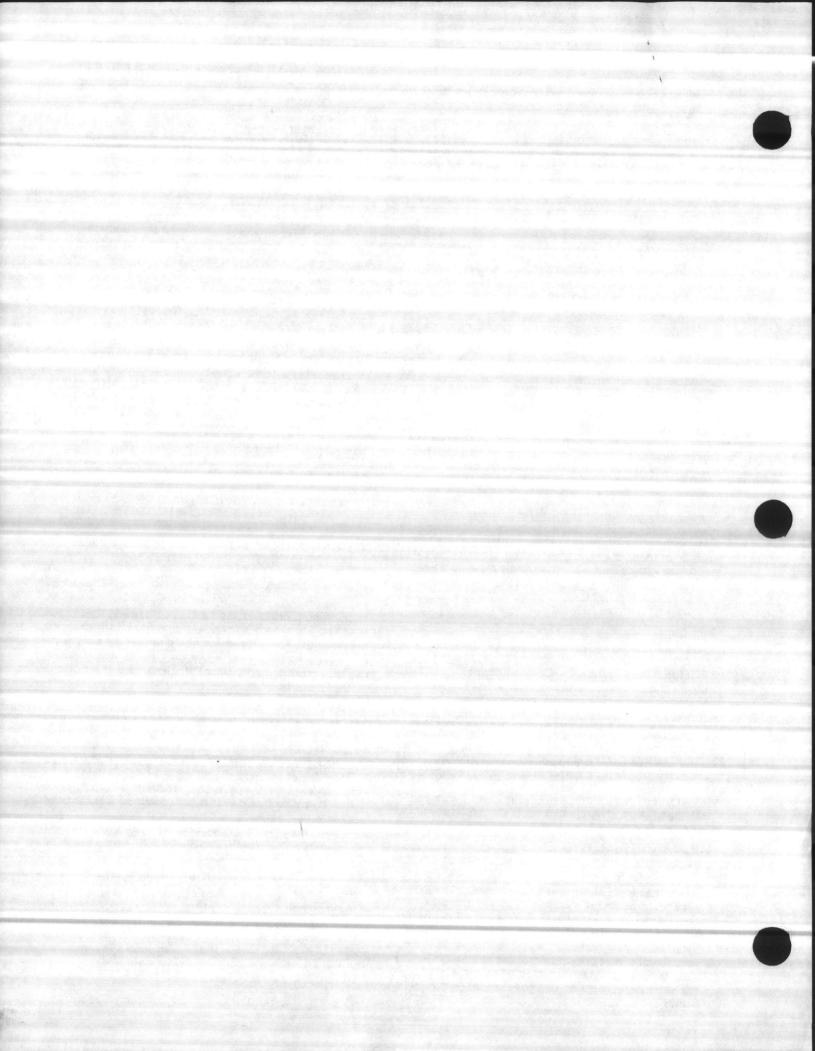
Sodium Hydroxide Solution can be stored in tanks built of the correct material of construction. Venting is required and dikes are recommended.

XII. DISPOSAL OF UNUSED MATERIAL

Product that cannot be used or chemically reprocessed should be converted to a neutral salt by neutralizing with acid and then diluting with large amounts of water to render the waste less harmful. Waste should then be disposed of in an approved landfill or in such a manner that will not adversely affect the environment.

XIII. REFERENCES:

Caustle Soda., Stauffer Chemical Company Brochure.



TAB PLACEMENT HERE

DESCRIPTION:

U.I., 30 weigh-



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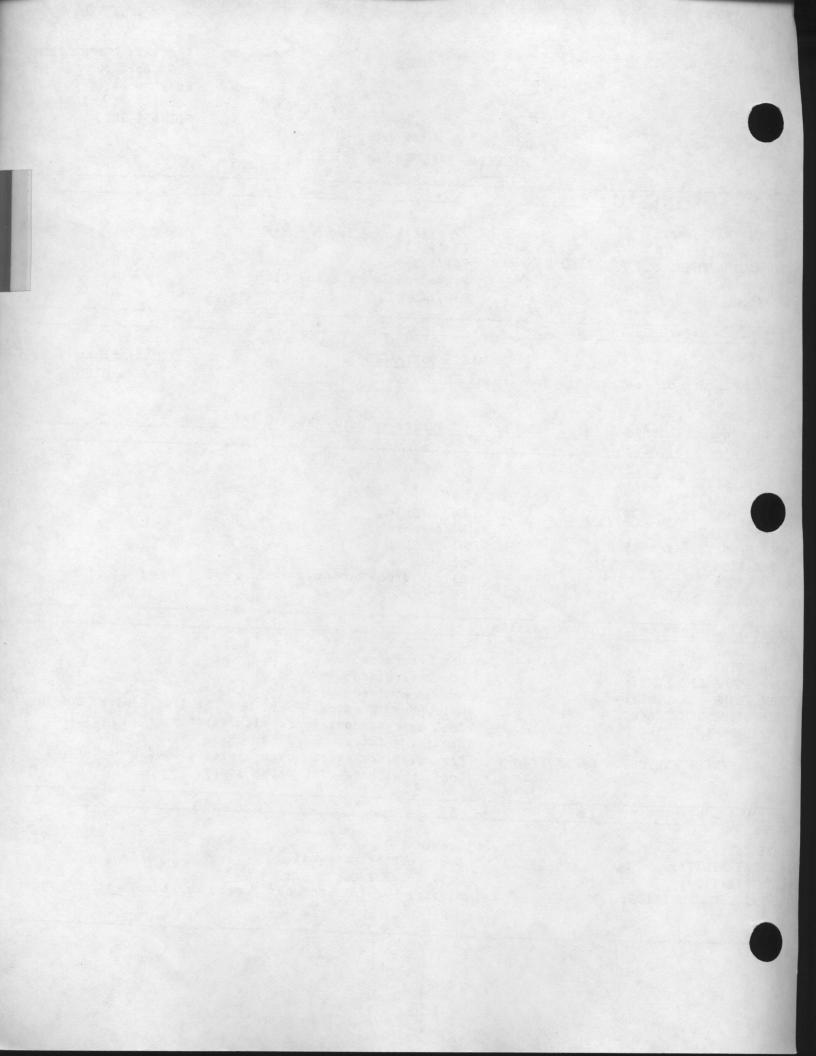


SPECTRUM CORPORATION P.O. Box 130 Fulghum Street Hornsby, TN 38044 901/658-9050



MATERIAL SAFETY DATA SHEET

ECTION 1 - IDENTIFICATION	
RODUCT TRADE NAME:	30 Weight Bar & Chain Oil
EVISION DATE:	11-19-85
NFORMATION/EMERGENCY PHONE NO:	901/658-9050
HEMICAL FAMILY:	Petroleum Lubricating Oil
AS NUMBER:	#64742-52-5
ECTION 2 - HAZARDOUS INGREDIENTS	
AME	REGULATORY AGENCY EXPOSURE LIMIT
omplex Mixture of Petroleum Hydrocar	
ee Section 6, Chronic Effects, for p	otential over-exposure hazard.
ECTION 3 - PHYSICAL DATA	
APOR PRESSURE (mmHg):	<1
NIC GRAVITY:	.94
SOLUBILITY:	Negligible
LING POINT:	Wide Range
APOR DENSITY (Afr-1):	>1
EVAPORATION RATE (BUAC=1):	<1
	Mild Hydrocarbon Odor
DOR: APPEARANCE:	Light to Dark Amber
SECTION 4 - FIRE AND EXPLOSION HAZARD	DS
FLASH POINT:	Not Determined
JPPER FLAMMABLE LIMIT:	Not Determined
LOWER FLAMMABLE LIMIT:	Not Determined
EXTINGUISHING MEDIA(s):	Water Fog, Chemical Foam, Dry Chemical Powder, CO ²
SPECIAL FIREFIGHTING PROCEDURES:	Cool exposed containers with water spray. Avoid
	breathing fumes.
UNUSUAL FIRE & EXPLOSION HAZARDS:	Pressure increase in over heated closed containers. Cool containers with water spray.
SECTION 5 - REACTIVITY DATA	
STABILITY:	Stable
INCOMPATIBILITY:	Avoid strong oxidants.
POLYMERIZATION:	Will not occur.
THERMAL DECOMPOSITION:	Partial burning produces fumes, smoke and carbon monoxi



Page 2 of :

-- 111

SECTION 6 - HEALTH H	AZARD-DATA headache and respiratory		
'ATION:	AZARD-DATA Inhalation of fumes may result in dizziness, headache and respiratory irritation. Contact with eyes may cause minimal irritation.		
TY NTACT:	Contact with eyes may cause wining a		
SKIN CONTACT:	Mild irritation may occur with prolonged or repeated contact.		
INGESTION:	Slightly toxic. Pulmonary aspiration hazard if vomiting occurs.		
TLV: CHRONIC EFFECTS:	5mg/m3 as mist. ACCIH 1984-85 Testing of similar oils by IARC has caused skin tumors in laboratory animals after prolonged and repeated exposure over their lifetime. According to OSHA, oils of this type are potentially carcinogenic unless good industrial hygiene practices are employed.		
Emergency First	Aid Procedures Wash clothing before re-use.		
SKIN:	Wash skin with soap and warm water. Wash clothing		
ETE:	If splashed into eyes flush eyes with clear water for 5 minutes.		
INHALATION:	If overcome by fumes remove from exposure immediately.		
	If ingested, do not induce vomiting. Call a physician.		
ORAL:	II Ingesteut, et .		

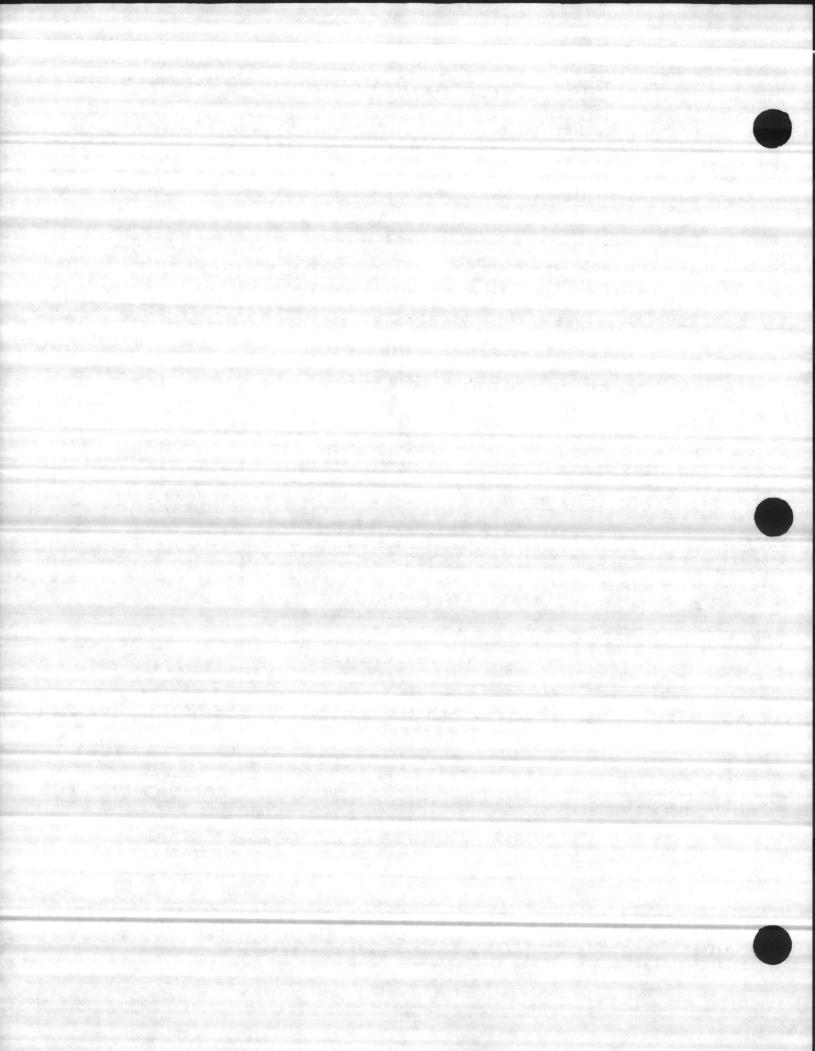
	Ventilate as needed to comply with exposure limit. Use impervious gloves to avoid repeated/prolonged skin contact.	
EYE PROTECTION:	Use goggles/face shield to avoid change to fresh clean clothing.	
WORK/HYGENIC PRACTICES:	Do not wear until thoroughly laundered.	

SECTION 8 - SPILL OR LEAK PROCEDURES

	Remove ignition sources. Recover liquid. Add absorbent to spill area. Ventilate confined spaces. Advise authorities if product	
	enters sewers, etc. Assure conformity with applicable disposal regulations. Dispose	
WASTE DISPOSAL:	Assure conformity with applicable disposed to of absorbed material at approve waste site.	

SECTION 9 - SPECIAL PRECAUTIONS			Do not handle or
HANDLING AND STORAGE PRECAUTIONS:	Land Whe	Use chemical	resistant gloves

La presented herein is based upon tests and information which we believe to be reliable. Ther, users should make their own investigations to determine the suitability of the information for their particular purpose.



BASE OIL



Date: 06/03/86

CITGO PETROLEUM CORPORATION P. O. Box 3758 Tulsa, Oklahoma 74102

MATERIAL SAFETY DATA SHEET

Trade Name: CITGO No. 93512

Commodity Code: 25-052

Synonyms: Lubricating Oil

CAS Reg. No.: Mixture.

Citgo Index No. (CIN): 0070

Technical Contact: (918) 561-5165 Medical Emergency: (318) 491-6215

> MATERIAL HAZARD EVALUATION (Per OSHA's Hazard Communication Standard [29 CFR Part 1910.1200])

Health: Non-Hazardous.

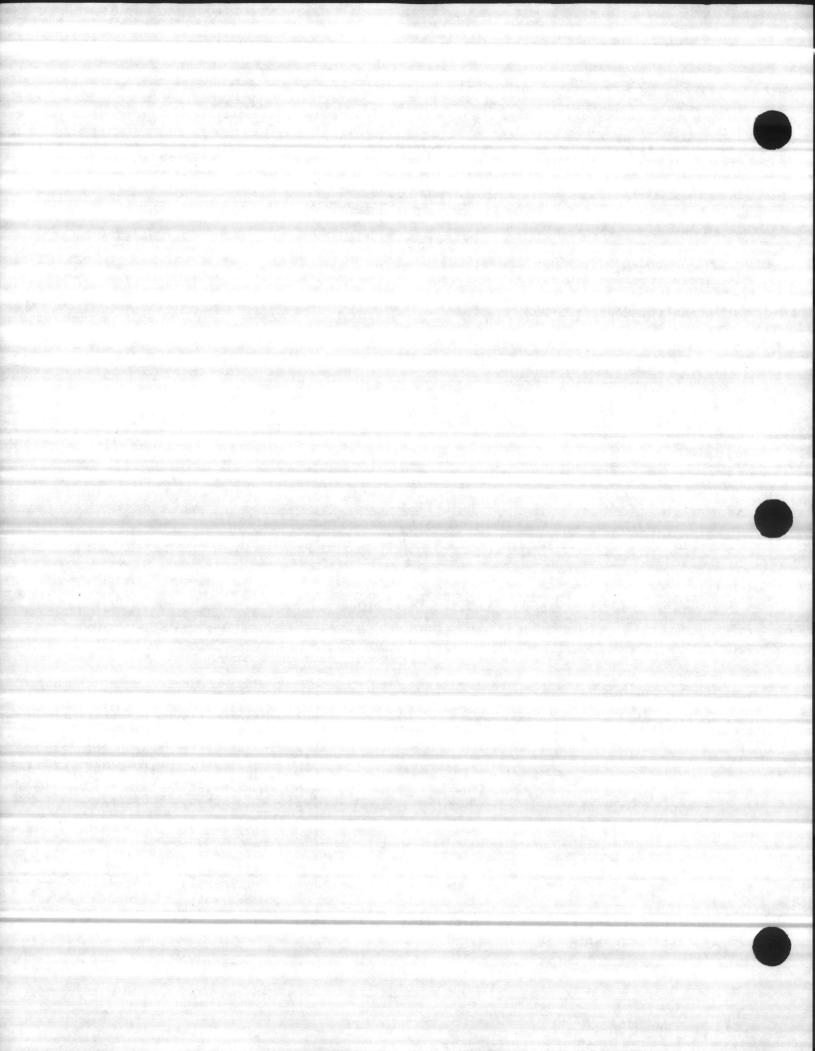
Precautionary Statement: Combustible Liquid.

I. GENERIC COMPOSITION/COMPONENTS

Components Refined Petroleum Oil(s)	CAS # 64742-65-0 64742-62-7	<u>%</u> 70-80	Hazard Data Oral: LD50(rat): >15g/kg Eye: Practically Non-Irritating (0.7-1.7/110, Draize) Skin: Non-Irritating or Practically Non-Irritating (0-0.6/8, Draize) Ihln: LC50/4H(rat): >5,000mg/m ³
Stoddard Solvent Low Ash Additive	Mixture Mixture	15-25 3-8	Oral: LDLo(human): 500mg/kg Eye: Minor irritant Skin: Minor irritant
Pour Point Depressant	Mixture	< <u>1</u>	Oral: LD50(rat): 60.3g/kg Eye: Slight irritant Dermal: LDLo(rbt): 7.94g/kg
Rust preventive synergist and de-icer surfactant	Mixture	<0.5	Moderate irritant Eye: May be irritant



ND = No Data NA - No: Applicable



PHYSICAL DATA II.

Physical Hazard Classification (Per 29 CFR Part 1910.1200)

Yes Combustible No Compressed Gas No Explosive No Flammable No Organic Peroxide	No Oxidizer No Pyroforic No Reactivity Yes Stable No Unstable
Boiling Point, 760 mmHg,	Melting Point, °C(°F): NA
°C(°F): >149(>300)	Vapor Pressure, mmHg (25°C): <20
Specific Gravity (H ₂ 0=1): 0.86	Solubility in H ₂ O, % By Wt.: Negligible
Vapor Density (Air=1):>1	Evaporation Rate (Butyl Acetate=1): <1
% Volatiles By Vol.: Negligible	pH of Undiluted Product: ND
Appearance and Odor: Blue liquid, slight	odor of petroleum distillates.

Lower: 1.0

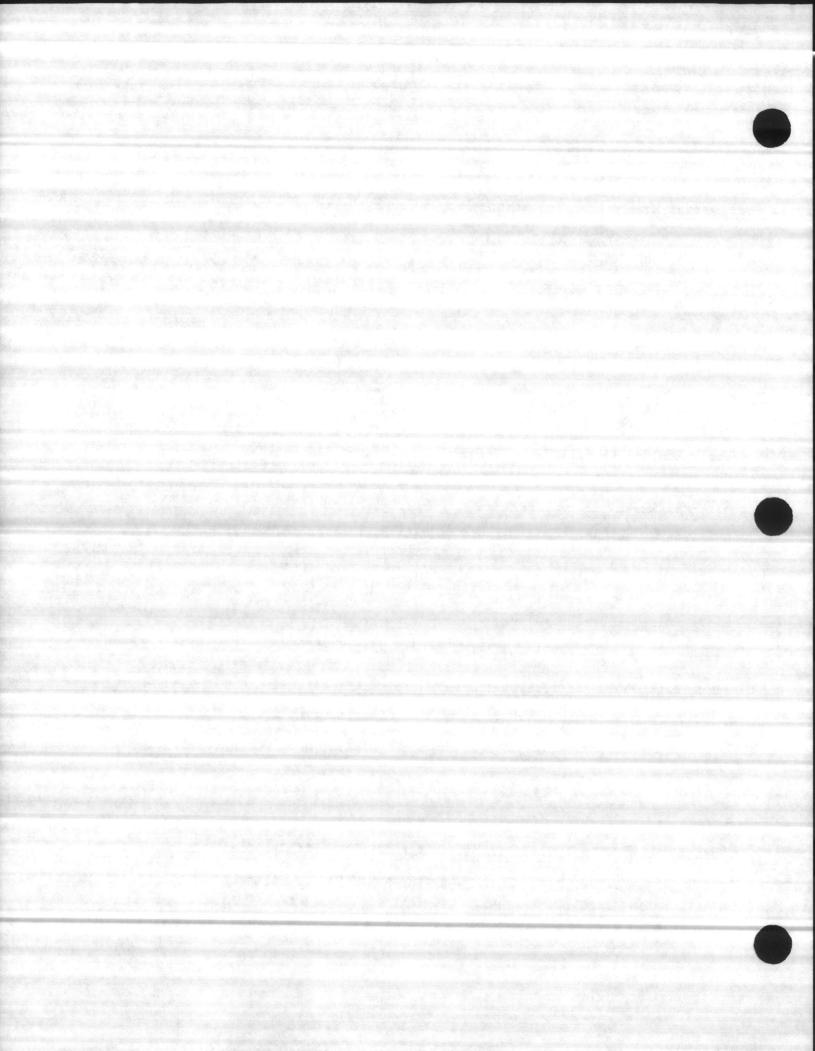
	III.	FIRE AND EXPLOSION DATA	
Flash Point, COC, °C(°F):	77(170)	NFPA*	
Flash Point, PM, °C(°F):	57(130)	Health: _	1
Fire Point, COC, °C(°F):	ND	Flammability: _	2
		Reactivity: _	0

Flammable Limits in Air, % Vol.: Extinguishing Media: CO2, dry chemical, foam or water fog. Special Fire Fighting Procedure: None. Unusual Fire or Explosion Hazard: Water may cause frothing.

*Citgo assignment based on our evaluation per NFPA guidelines. Hazard Rating least-0; slight-1; moderate-2; high-3; extreme-4.

Upper: 6.0







IV. REACTIVITY DATA

No Unstable Stability: Yes Stable

Conditions Contributing to Instability: None.

Incompatibility: Strong oxidants.

Hazardous Decomposition Products (thermal, unless otherwise specified): CO, CO,.

Conditions Contributing to Hazardous Polymerization: None.

V. SPILL OR LEAK PROCEDURES

Procedures if Material is spilled:

Remove sources of heat or ignition, provide adequate ventilation, contain leak. Absorb small spills with suitable material such as rags, straw or sand. Report spills as required to appropriate authorities.

Chemtrec Emergency Number: 800-424-9300

Waste Disposal:

It is the responsibility of the user to determine if the material is a hazardous waste at the time of disposal. Check before disposing to be sure you are in compliance with all applicable laws and regulations.

Chemtrec Emergency Number: 800-424-9346

Protective measures during repair and maintenance of contaminated equipment:

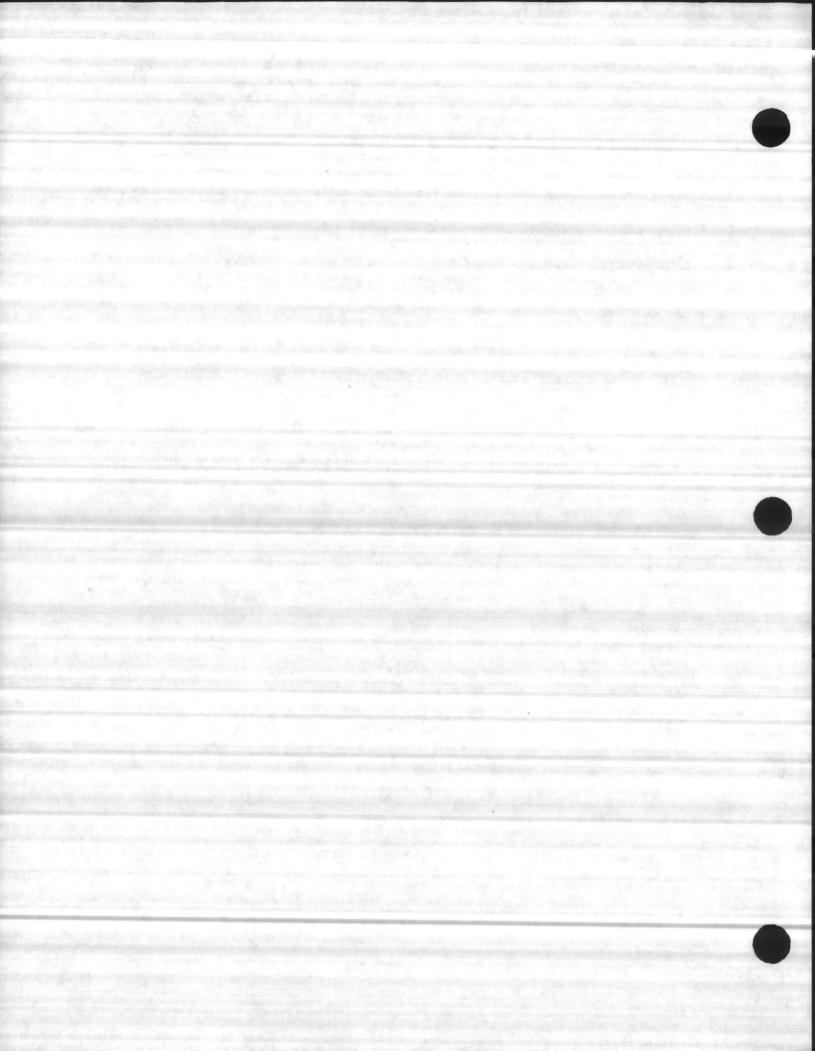
Refer to Section VII - Special Protection Information.



ND = No Data NA = Not Applicable

LAS/25-052



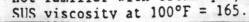


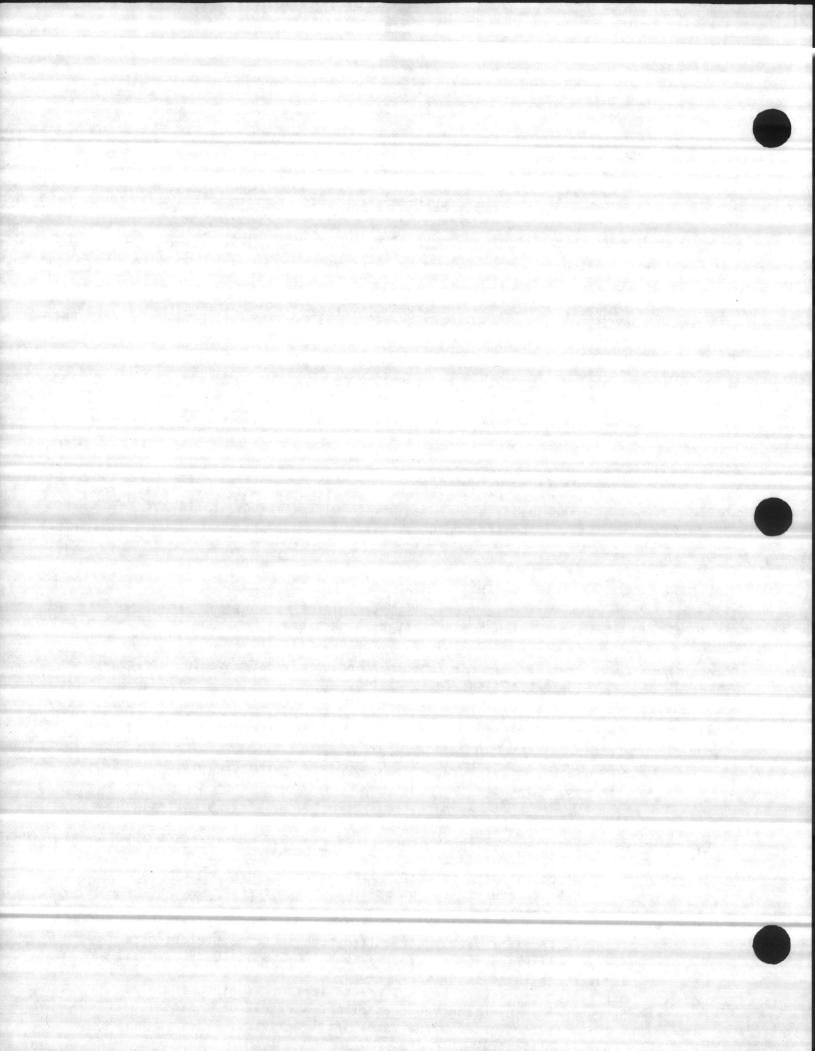
VI. HEALTH HAZARD DATA

-4-

Health Hazard Classification (Per 29 CFR Part 1910.1200) Corrosive No No Carcinogen No Irritant Animal Carcinogen No Sensitizer No Suspect Carcinogen No No Teratogen Mutagen No Target Organ No Highly Toxic No No Toxic Product listed as carcinogen or potential carcinogen by: NTP No, IARC No, OSHA No, Other No Slightly toxic, 1 pt. to 1 qt. is approximate lethal oral dose Toxicity Summary: for 150 lb. human adult. Acute Exposure Symptoms: Low risk of inhalation. In enclosed spaces or when hot, vapors Inhalation: may reach concentrations sufficient to cause drowsiness, dizziness, headache, nausea, or lung irritation. Mists above TLV may cause chemical pneumonitis. Dermal Contact: Low irritant. No probable acute hazard. Absorption: May be mildly irritating. Eve Contact: Generally low toxicity. Very large amounts may cause generalized depression, headache, drowsiness, nausea, vomiting on Ingestion: diarrhea. Small doses may produce irritation and diarrhea. Prolonged and/or frequent contact may cause drying, cracking Chronic Exposure: (dermatitis) or folliculitis. Other Special None expected. Effects: First Aid and Emergency Procedures for Acute Effect Remove to fresh air. Respiratory support if necessary. Inhalation: Seek medical aid. Wash with soap and water. Do not wear heavily contaminated Dermal: clothing before laundering. Flush with large volumes of water. See physician if any Eyes: complications arise. Do not induce vomiting. Seek medical aid. Ingestion: Subcutaneous injection is a medical emergency . . seek medical Injection: aid immediately. Notes to Physician: If viscosity is less than 100 SUS at 100°F careful gastric lavage with tight fitting or cuffed tube is to be preferred over emesis. If viscosity is greater than 100 SUS at 100°F., emesis may be induced for large quantities. Aspiration may cause chemical pneumonitis or lipoid pneumonia. Subcutaneous injection requires prompt surgical debridement. If not familiar with technique, seek skilled advice.









SPECIAL PROTECTION INFORMATION VII.

-5-

Ventilation Requirements: Ventilation is required when work place exposures exceed TLV. Very high mist concentrations can result in a fire and explosion hazard. 5 mg/cu m as oil mist. (ACGIH 1985-86; OSHA 1972)

TLV:

Specific Personal Protective Equipment:

Respiratory: Normally none required. If high vapor or mist concentrations expected - use respirator approved for organic vapors and mists.

Safety goggles, or chemical splash goggles if splashing is Eyes: anticipated.

Oil impervious gloves if frequent or prolonged contact is expected. Dermal:

Other Clothing or Equipment: Wear body-covering work clothes to avoid prolonged or repeated exposure. Launder soiled work clothes before reuse.

VIII. TRANSPORTATION AND SPECIAL PRECAUTIONS

Hazardous Material Placard/Label: Caution: Combustible Liquid.

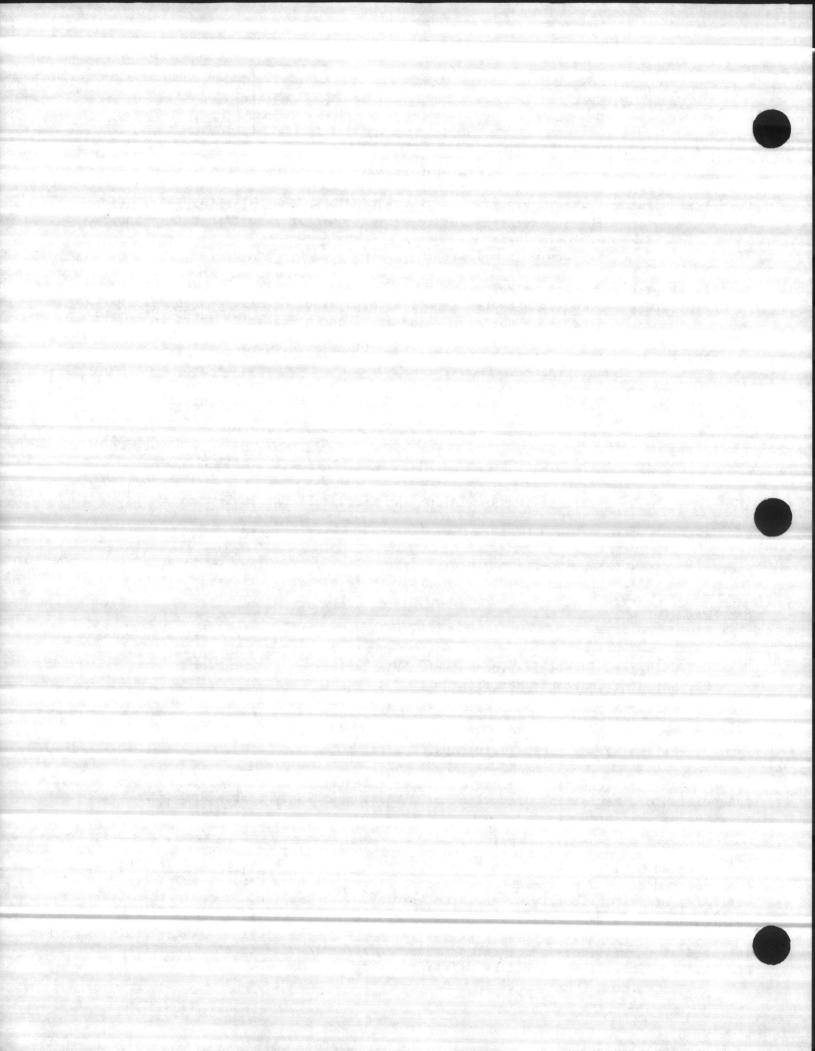
Storage: Store below 120°F. DOT Hazard label required. Do not apply high heat or flame to container. Keep separate from strong oxidizing agents.

DOT	Information:		1.19
	DOT/UN Shipping Name:	Petroleum Lubricating	0i1.
	DOT Hazard Class:	Combustible Liquid.	
	DOT/UN Hazard Identification Number:	UN 1270.	1. Carton
	DOT Shipping Container Restrictions:	None.	
	DOT Placard:	Combustible Liquid.	

Caution: Empty containers may contain product residue which could include flammable or explosive vapors.

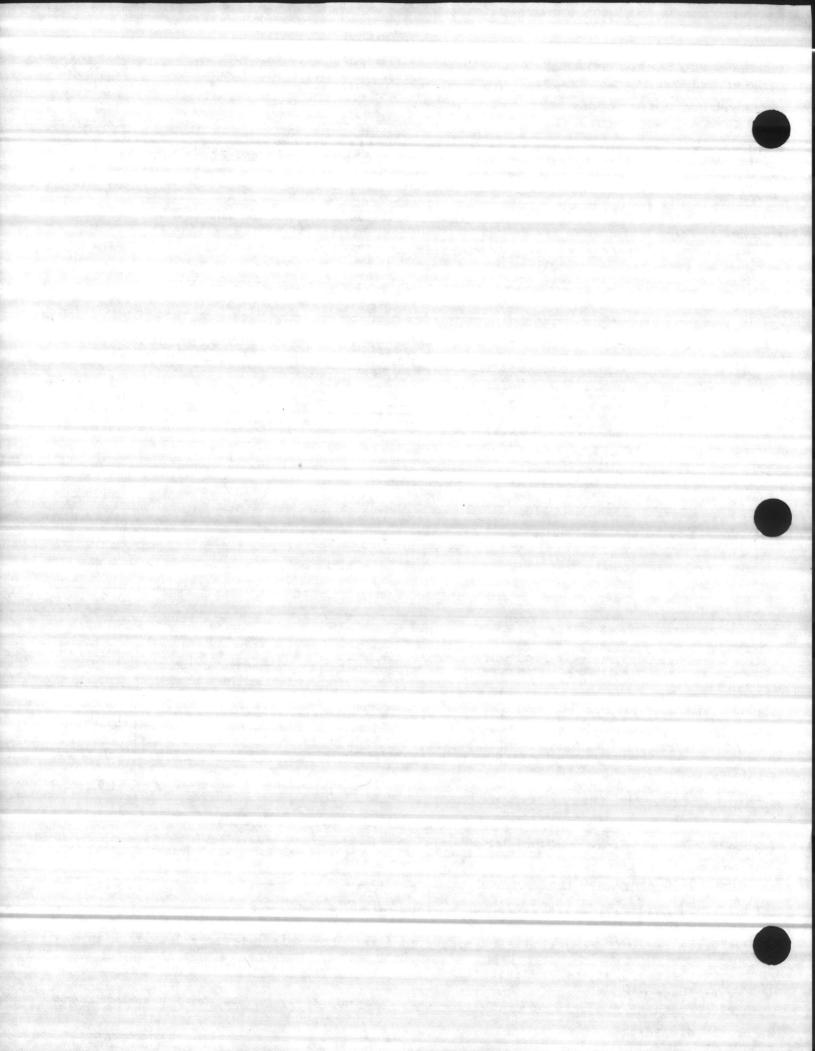
Consult appropriate Federal, State and Local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

All statements, information, and data provided in this material safety data sheet are believed to be accurate and reliable, but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied, on our part. Users should make their own investigations to determine the suitability of the information or products for their particular purpose. Nothing contained herein is intended as permission, inducement or recommendation to violate any laws or to practice any invention covered by existing patents.

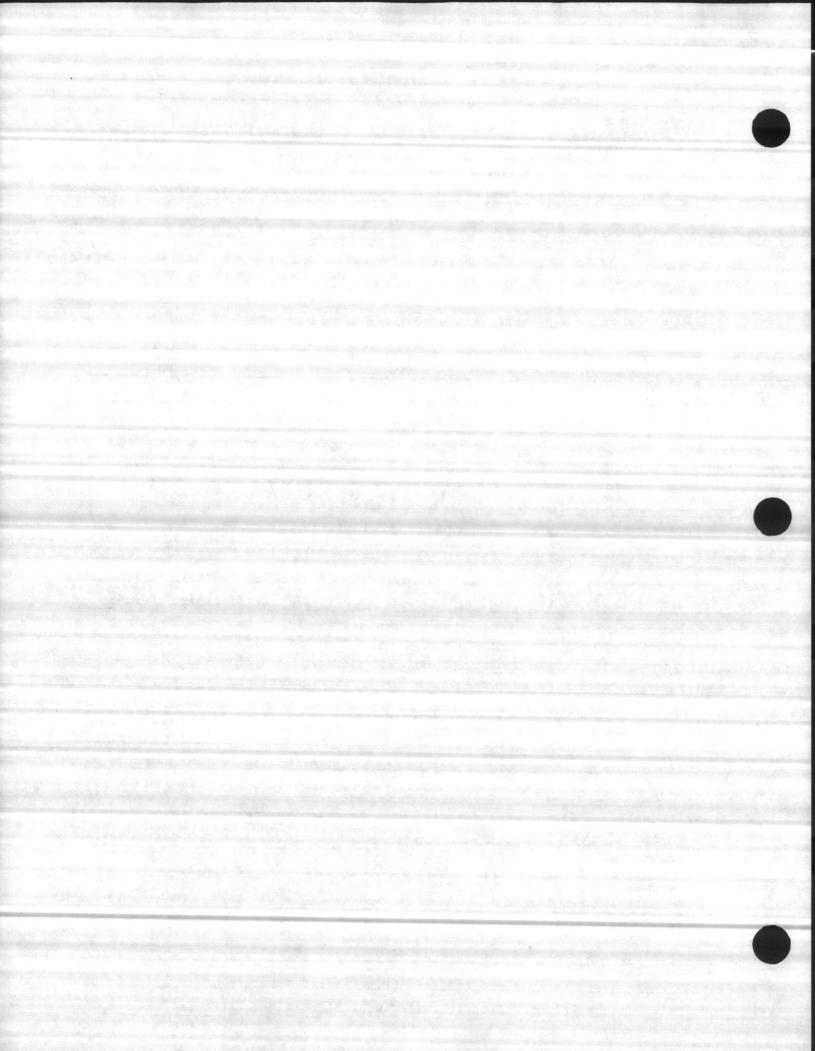


Material Safety Data Sheet May be used to comply with OSHA's Hazard Communication Standard, 2.CFR 1910.1200. Standard must be Ited for specific requirements.		U.S. Department of Labo Occupational Safety and Health A (Non-Mandatory Form) Form Approved OMB No. 1218-0072	dministration	
BAR AND CHAIN OIL	Note: Blank species are not permitted. If any liem is not applic information is available the space must be marked to it		picable, or no indicate that	
Section I		and a second second	and a second and	
Manufacturer's Name		Emergency Telephone Number	a second and the	
Harrison Oil Corporation		414-962-4000		
Address (Number, Street, City, State, and ZIP Co	de)	Telephone Number for Information		
4267 N. Port Washington Ro	1	414-962-4000		
Milweyhee Missessie 53211		October 1, 1987	and a state of the	
Milwaukee, Wisconsin 53211		Signature of Preparer (optional)		
Section II - Hazardous Ingredients/	dentity information			
Hazardous Components (Specific Chemical Iden		OSHA PEL ACGIH TLV	Other Limits Recommended	to (aptional)
Refined Petroleum Oil - No	and all and a standard the second statement of the second			
Blend of Light Naphthenic	Distillate	Cas.No. 64741-52-2		
Heavy Naphthenic		Cas.No. 64741-53-3	n de la de	
Section III - Physical/Chemical Che	racterístics			T
Bosing Pant	N.A.	Specific Gravity (HgO = 1)		0.9
Vapor Pressure (mm Hg.)	Negligible	Metry Part		N.A.
Vapor Density (AIR = 1)	Above 5	Eveporation Rates (Busyl Acetate = 1)		regligible
Soubly n Water Not soluble Appearance and Odor Yellow to amber liquid dy	ed red - Miners	al oil odor	an a	
Section IV - Fire and Explosion Ha				
Pash Point (Method Used)	3	Fermeble Limits	LEL	UEL
Above 150°C Above 250°F	Anaphana Anaphana ana ana	N.A.	and a stand of the second	
Entrousing Media Foam, dry chemical, water	spray, water i	fog, carbon dioxide		
Use water spray to cool st			ersonnel, wa	ter fog &
foam may cause frothing a			and an and a second	
Unusual Fire and Explosion Hazards Avoid breathing products	of combustion s	which include fumes, and	ke, carbon m	onoxide and
carbon dioxide.		and and a second se	OS	HA 174 Sept 198

U.S. Department of Labor



	- Reactivity Data				
Lability	Unstable		Conduons to Avoid Overheating for e	xtended periods	will cause
	Stable	X			
	(Manmals to Avoid) xidizing age		<u>,</u>		
Landous Deco	imposition or Byprod	ucts	la oficial constraints in the second seco		
	May Occur	T	Combustion product	s of hydrocarbor	<u>05-</u>
Polymenzation			None		
	Will Not Occur	X			
Section VI -	- Health Hazard	Deta			
Route(s) of Energy		No	1. · · · · · · · · · · · · · · · · · · ·	n? with extreme prol	ingeston? Do Not Ingest.
	(Aarts and Chronic)	an entreg		and a second	and the second
TLV-5mg/1	m [°] as mist-lo	ow or	der of toxicity.	kin contact may	cause irritation to sensitive
skin. Pr	rolonged cont	act	may cause skin derm	atitis or oil ac	ne.
and the second second	and the state of the second		and the second	Standard and a star	an a
Caronogenety:		2	W	AC Monographs?	OSHA Regulated?
None	No			No	No
Aedical Condex Generally Aggra	First Aut Proved are	N	s or diarrhea. one d area, then wash t	horoughly with s	oap & warm water.
Generally Aggra	Fine Ad Procedures With by Exposure Fine Ad Procedures Wipe from ex Do not induc	N pose	one d area, then wash t miting. Consult ph	vsician immediat	elv. Eve contact-flush with
Internal Section VH	First Ad Procedures -Vipe from ex -Do not induc - Precautions f	N pose e vo	one d area, then wash t miting. Consult ph fe Handling and Use 1	vsician immediat arge volumes of	elv. Eve contact-flush with water & see physiciani!
Internal Section VH Normal pr	First Ad Procedures -Wipe from ex -Do not induc - Precedutions f won in Case Material recaution mea	N pose for Sa s Role sure	d area, then wash t miting. Consult ph fe Handling and Use 1 sed or Spiled s for handling lubr	vsician immediat arge volumes of icating oils are	elv. Eve contact-flush with water & see physiciani!
Internal Section VH Normal pr	First Ad Procedures -Wipe from ex -Do not induc - Precedutions f won in Case Material recaution mea	N pose for Sa s Role sure	d area, then wash t miting. Consult ph fe Handling and Use 1	vsician immediat arge volumes of icating oils are	elv. Eve contact-flush with water & see physiciani!
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Medical Condition Generally Aggra Internal Internal Section VH - Section VH - Secti	First Ad Procedures -wipe from ex- -Do not induc - Precedutions f un in Case Material recaution mea flames & hot Method disposed of a Be Taken in Handling inperatures ab in heat and op	N pose e vo for Sa surf surf surf accor	d area, then wash t miting. Consult ph fe Handling and Use 1 mod or Spaled s for handling lubr aces. Collect on a ding to local State 50°C(120°F) for pro lames. Do not stor	vsician immediat arge volumes of icating oils are bsorbants. & Federal regul longed periods. e near flames, h	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants.
Medical Condition Generally Aggra Internal Internal Section VH - Section VH - Secti	Fire Ad Procedures -Wipe from ex- -Do not induc - Precedutions f un n Case Materal recaution mea flames & hot Method disposed of a Be Taken in Handling mperatures ab in heat and op ms exposed to oi	N pose e vo or Sa surf surf ccor ord Sa ove ord Sa ove or failed for sa surf	d area, then wash t miting. Consult ph te Handling and Use 1 sed or Space s for handling lubr aces. Collect on a ding to local State 50°C(120°F) for pro lames. Do not stor sts should wear app	vsician immediat arge volumes of icating oils are bsorbants. & Federal regul longed periods. e near flames, h roved breathing	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants. devices. Avoid prolonged &
Medica' Condition Generally Aggra Internal Internal Section VH - Section VH - Secti	Fire Ad Procedures -Wipe from ex- -Do not induc - Precedutions f un n Case Materal recaution mea flames & hot Method disposed of a Be Taken in Handling mperatures ab in heat and op ms exposed to oi	N pose e vo or Sa surf surf ccor ord Sa ove ord Sa ove or failed for sa surf	d area, then wash t miting. Consult ph te Handling and Use 1 sed or Space s for handling lubr aces. Collect on a ding to local State 50°C(120°F) for pro lames. Do not stor sts should wear app	vsician immediat arge volumes of icating oils are bsorbants. & Federal regul longed periods. e near flames, h roved breathing	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants. devices. Avoid prolonged & after handling. Never wear
Weste Depose Muste Depose Muste Depose Muste be de Precessors to E Avoid ter Keep from Persons o repeated	Fire Ad Procedures -Wipe from ex- -Do not induc - Precedutions f un n Case Materal recaution mea flames & hot Method disposed of a Be Taken in Handling mperatures ab in heat and op ms exposed to oi	N pose e vo or Sa surf surf ccor ord Sa ove orn f 1 mi	d area, then wash t miting. Consult ph te Handling and Use 1 sed or Space s for handling lubr aces. Collect on a ding to local State 50°C(120°F) for pro lames. Do not stor sts should wear app	vsician immediat arge volumes of icating oils are bsorbants. & Federal regul longed periods. e near flames, h roved breathing	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants. devices. Avoid prolonged &
Medica' Condition Servershy Aggra Internal: Internal: Section VH - Section VH - Section VH - Section VH - Section VH - Must be of Precautors to B Avoid ter Keep from Dependent repeated Section VHI Resonancy Pro	Fire Ad Procedures -Wipe from ex- -Do not induc - Precedions f on in Case Material recaution mea flames & hot Method disposed of a Be Taken in Handling inperatures ab in heat and op ms exposed to oi skin contact - Control Measures	N pose e vo or Sa surf surf ccor ord Sa ove or f 1 mi . D sures	d area, then wash t miting. Consult ph te Handling and Use 1 sod or Spand s for handling lubr aces. Collect on a ding to local State 50°C(120°F) for pro lames. Do not stor sts should wear app o not get in eyes.	vsician immediat arge volumes of icating oils are bsorbants. & Federal regul longed periods. e near flames, h roved breathing Wash thoroughly	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants. devices. Avoid prolonged & after handling. Never wear oil soaked clothing.
Medical Condition Generally Aggra Internal: Internal: Section VH - Section VH - Section VH - Section VH - Byarks, 1 Waste Depose Must be of Precautors to H Avoid ter Recep from Other Precautor Persons of repeated Section VH! Respiratory Pro Not usual	Fire Ad Procedures -Wipe from ex- -Do not induc - Precedions f on in Case Material recaution mea flames & hot Method disposed of a Be Taken in Handling inperatures ab in heat and op ms exposed to oi skin contact - Control Measures	N pose e vo or Sa surf surf ccor ord Sa ove or f 1 mi . D sures	d area, then wash t miting. Consult ph te Handling and Use 1 sod or Spand s for handling lubr aces. Collect on a ding to local State 50°C(120°F) for pro lames. Do not stor sts should wear app o not get in eyes.	vsician immediat arge volumes of icating oils are bsorbants. & Federal regul longed periods. e near flames, h roved breathing Wash thoroughly	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants. devices. Avoid prolonged & after handling. Never wear
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Medical Condition Generally Aggra Internal Internal Section VH Section VH Sparks, 1 Waste Depose Must be of Precautors to B Avoid ter Keep from Other Precautor Persons of repeated Section VHI Respiratory Pro Not usual Vertiation	Fire Ad Procedures -wind by Exposure -wipe from ex- -Do not induc - Precedutions f un n Case Materal recaution mea flames & hot Method disposed of a Be Taken in Handing inperatures ab in heat and op resposed to oi skin contact - Control Measures local Exhaust None normall Mechanical (Gener NONE IS	N pose e vo or Sa surf surf nccor end S ove en f 1 mi . D sures If y re y re y re	d area, then wash t miting. Consult ph fe Handling and Use 1 med or Spiled s for handling lubr aces. Collect on a ding to local State borg 50°C(120°F) for pro lames. Do not stor sts should wear app o not get in eyes.	vsician immediat arge volumes of icating oils are bsorbants. 6 Federal regul longed periods. e near flames, h roved breathing Wash thoroughly concentrations Specie None Other NONE Eye Projecton	elv. Eve contact-flush with water & see physiciani! satisfactory. Remove ations. Avoid or contain oil mists. eat or strong oxidants. devices. Avoid prolonged & after handling. Never wear oil soaked clothing. use device approved for



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MATERIAL SAFETY DATA SHEET

An explanation of the terms used herein may be found in OSHA 29 CFR 1910.1200. available from OSHA regional or area offices. (Essentially similar to U.S. Department of Labor Form OSHA-20 and generally accepted in Canada for information purposes) Do Not Duplicate This Form. Request an Original.

I. PRODUCT IDENTIFICATION

PRODUCT	Oxygen			1	
CHEMICAL NAME	Oxygen		SYNONYMS	Not applicable	
FORMULA	O ₂		CHEMICAL	Not applicable	
		;	MOLECULAR WEIGHT	32.00	y

TRADE NAME Oxygen

II. HAZARDOUS INGREDIENTS

For mixtures of this product request the respective component Material Safety Data Sheets. See Section IX.

MATERIAL (CAS NO.)	Wt (%)	1984-1985 ACGIH TLV-TWA (OSHA-PEL)
Oxygen (7782-44-7)	100	None currently established (None currently established

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	-183°C (-297.4°F)	FREEZING POINT	-218.4°C (-361.1°F)
SPECIFIC GRAVITY (H2O = 1)	Gas	VAPOR PRESSURE AT 20°C.	Gas
VAPOR DENSITY (air = 1)	1.105 @ 25°C	SOLUBILITY IN WATER, % by wt.	Negligible
PERCENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	Not applicable

APPEARANCE AND ODOR Colorless, odorless gas at normal temperature and pressure.

EMERGENCY PHONE NUMBER

IN CASE OF EMERGENCIES involving this material, further information is available at all times: In the USA 304 - 744-3487

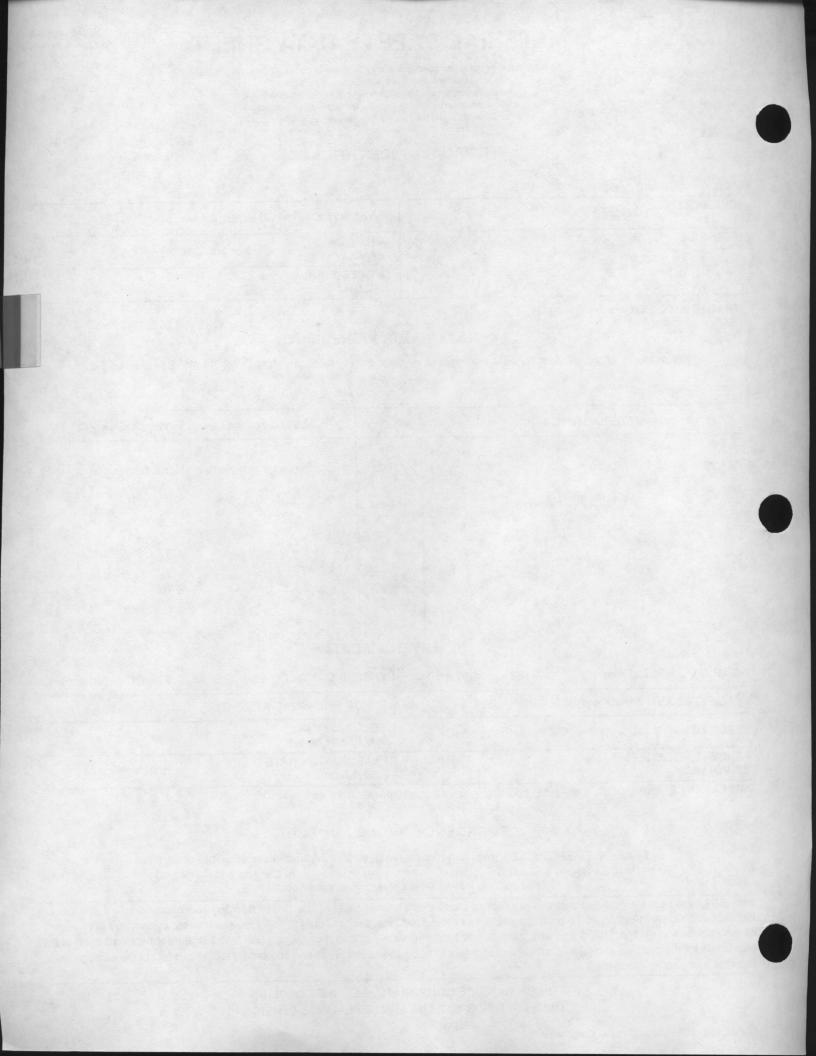
In Canada 514 - 645-5311

For routine information contact your local supplier

Union Carbide requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product

UNION CARBIDE CORPORATION D LINDE DIVISION UNION CARBIDE CANADA LIMITED D LINDE DIVISION

September 1985



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IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: None currently established.

EFFECTS OF SINGLE (ACUTE) OVEREXPOSURE:

SWALLOWING - No evidence of adverse effects from available information.

SKIN ABSORPTION - No evidence of adverse effects from available information.

INHALATION — Breathing 80% or more oxygen at atmospheric pressure for more than a few hours may cause nasal stuffiness, cough, sore throat, chest pain and breathing difficulty. Breathing oxygen at higher pressure increases the likelihood of adverse effects within a shorter time period. Breathing pure oxygen under pressure may cause lung damage and also central nervous system effects resulting in dizziness, poor coordination, tingling sensation, visual and hearing disturbances, muscular twitching, unconsciousness and convulsions. Breathing oxygen under pressure may cause prolongation of adaptation to darkness and reduced peripheral vision.

SKIN CONTACT - No evidence of adverse effects from available information.

EYE CONTACT - No evidence of adverse effects from available information.

EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE: No evidence of adverse effects from available information.

OTHER EFFECTS OF OVEREXPOSURE: See "Notes to Physician."

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: See "Notes to Physician."

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION: None currently known.

RGENCY AND FIRST AID PROCEDURES:

WALLOWING - This product is a gas at normal temperature and pressure.

SKIN - No emergency care anticipated.

INHALATION - Remove to fresh air. Give artificial respiration if not breathing. Keep victim warm and at rest. Call a physician.

EYES - No emergency care anticipated.

NOTES TO PHYSICIAN: Supportive treatment should include immediate sedation, anti-convulsive therapy if needed, and rest. Animal studies suggest that the administration of certain drugs, including phenothiazine drugs and chloroquine, increases the susceptibility to toxicity from oxygen at high concentrations or pressures. Animal studies also indicate that vitamin E deficiency may increase susceptibility to oxygen toxicity.

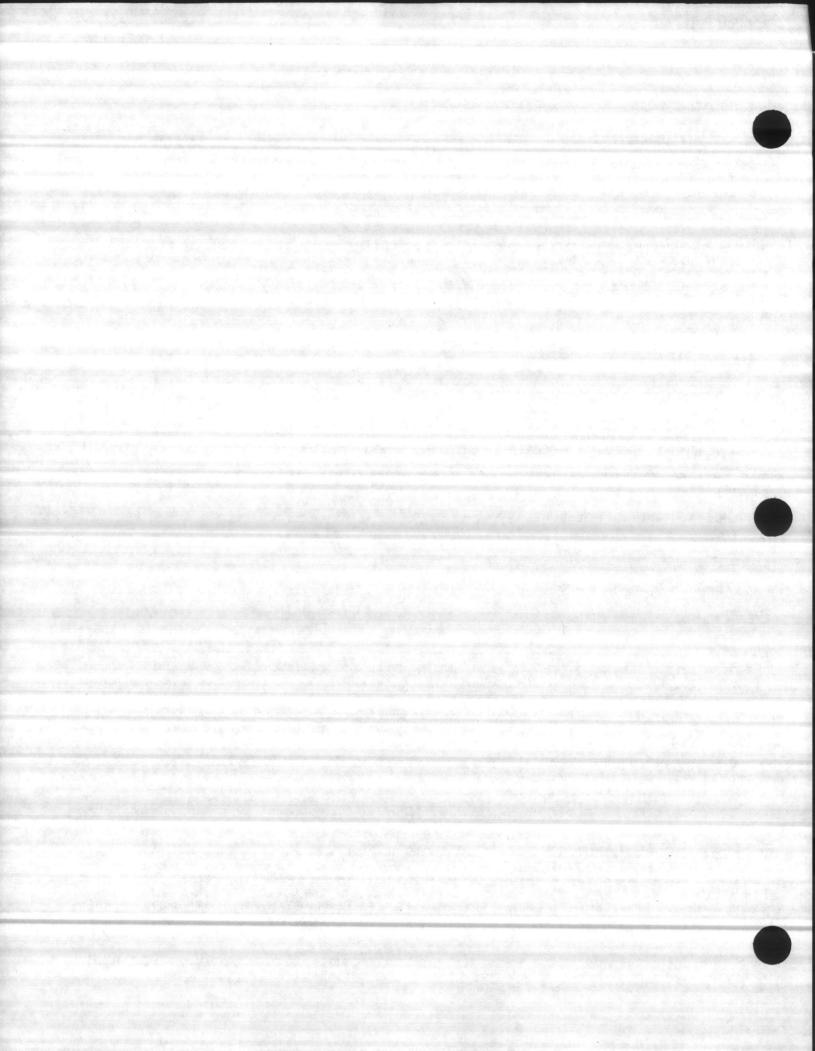
Airway obstruction during high oxygen tension may cause alveolar collapse following absorption of the oxygen. Similarly, occlusion of the eustachian tubes may cause retraction of the eardrum and obstruction of the paranasal sinuses may produce "vacuum-type" headache.

Newborn premature infants exposed to high oxygen concentrations may suffer delayed retinal damage which can progress to retinal detachment and blindness (retrolental fibroplasia). Retinal damage can also occur in adults exposed to 100% oxygen under greater than atmospheric pressure, particularly in individuals whose retinal circulation has been previously compromised.

All individuals exposed for long periods to oxygen at high pressure and all who exhibit overt oxygen toxicity should have ophthalmologic examinations.

WHEN USED IN WELDING AND CUTTING: Read and understand the manufacturer's instructions and the precautionary label on the product. See American Standard Z49.1 "Safety In Welding and Cutting" published by the American Welding Society, P.O. Box 351040, Miami, Florida 33135 and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Washington, D.C. 20402 for more detail. For further SAFETY AND HEALTH information, refer to Linde's free publication, L-52-529, "Precautions and Safe Practices for Electric Welding and Cutting", as well as L-2035, "Precautions and Safe Practices for Gas Welding, Cutting, and Heating." You may obtain copies from your local supplier, or by writing to Union Carbide Corporation, Linde Division, Communications Department, Id Ridgebury Road, Danbury, Connecticut, 06817-0001.

E: Suitability for use as a component in underwater breathing gas mixtures is to be determined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the effects, methods, frequency and duration of use, hazards, side effects and precautions to be taken.



VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): Not required.

	LOCAL EXHAUST — Not applicable.				
VENTIL ATION	MECHANICAL (general) — Acceptable.			Est.	
VENTILATION	SPECIAL — Not applicable.	94 C	•		an Sangar San Sangar San
	OTHER - Not applicable.		a de la com		

EYE PROTECTION: Select in accordance with OSHA 29 CFR 1910.133.

OTHER PROTECTIVE EQUIPMENT: Metatarsal shoes for cylinder handling. Select in accordance with OSHA 29 CFR 1910.132 and 1910.133.

IX. SPECIAL PRECAUTIONS

WARNING: High pressure gas. Vigorously accelerates combustion. Avoid contact with oils, greases and other flammable materials. Never use manifolds for oxygen cylinders unless specifically designed for such use. Use only with equipment conditioned for oxygen service. Use piping and equipment adequately designed to withstand pressures to be encountered. Protect container against physical

e. Isolate from combustible gas installations and combustible materials by adequate distance or by gas-tight, fire-resistive barriers. against over-heating. Never use an oxygen jet for cleaning purposes of any sort, especially clothing, as it increases the likelihood

I engulfing fire. Note: Reverse flow into cylinder may cause rupture. Use a check valve or other protective apparatus in any line or piping from the cylinder to prevent reverse flow.

MIXTURES: When two or more gases, or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death. Be sure to read and understand all labels and other instructions supplied with all containers of this product.

NOTE: Compatibility with plastics should be confirmed prior to use. For safety information on general handling of compressed gas cylinders, obtain a copy of pamphlet P-1, "Safe Handling of Compressed Gases in Containers" from the Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Arlington, VA 22202.

OTHER HANDLING AND STORAGE CONDITIONS: Never work on a pressurized system. If there is a leak, close the cylinder valve, blow down the system by venting to a safe place, then repair the leak. Never lubricate oxygen valves, regulators, etc., with any combustible substance.

The opinions expressed herein are those of qualified experts within Union Carbide. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide, it is the user's obligation to determine the conditions of safe use of the product.

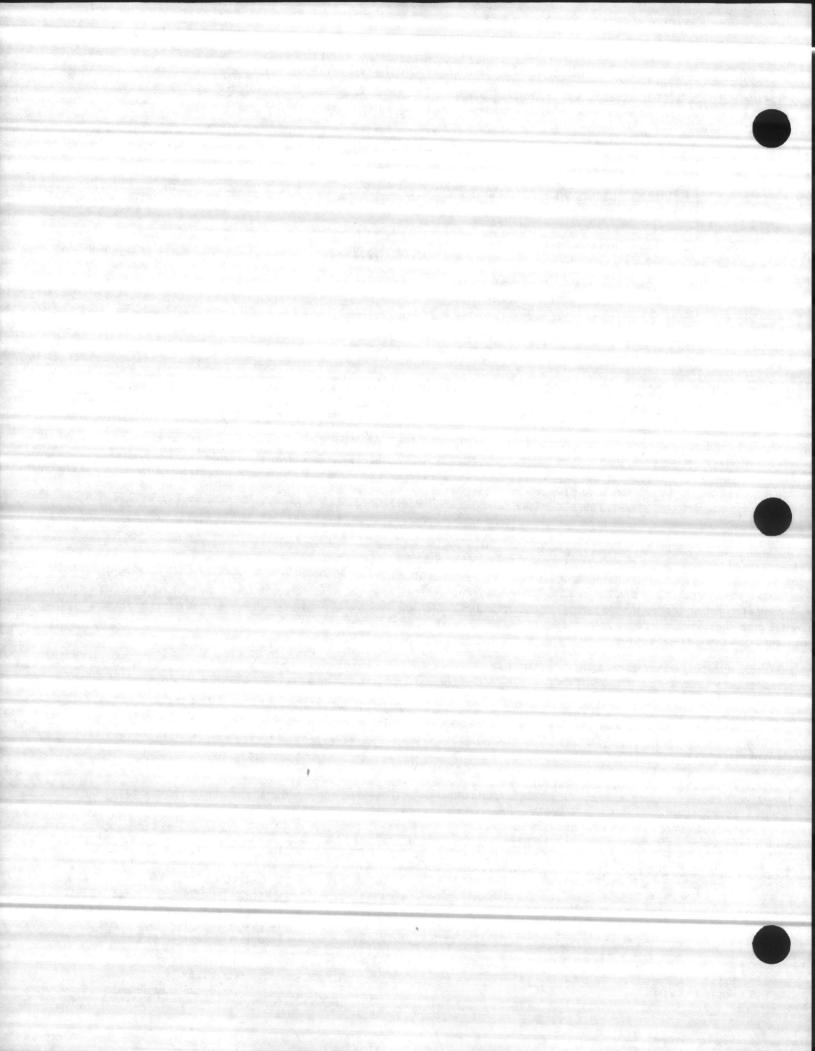


GENERAL OFFICES IN THE USA: Union Carbide Corporation Linde Division 39 Old Ridgebury Road Danbury, CT 06817-0001

IN CANADA: Union Carbide Canada Limited Linde Division 123 Eglinton Avenue East Toronto, Ontario M4P 1J3

Other offices in principal cities all over the world.

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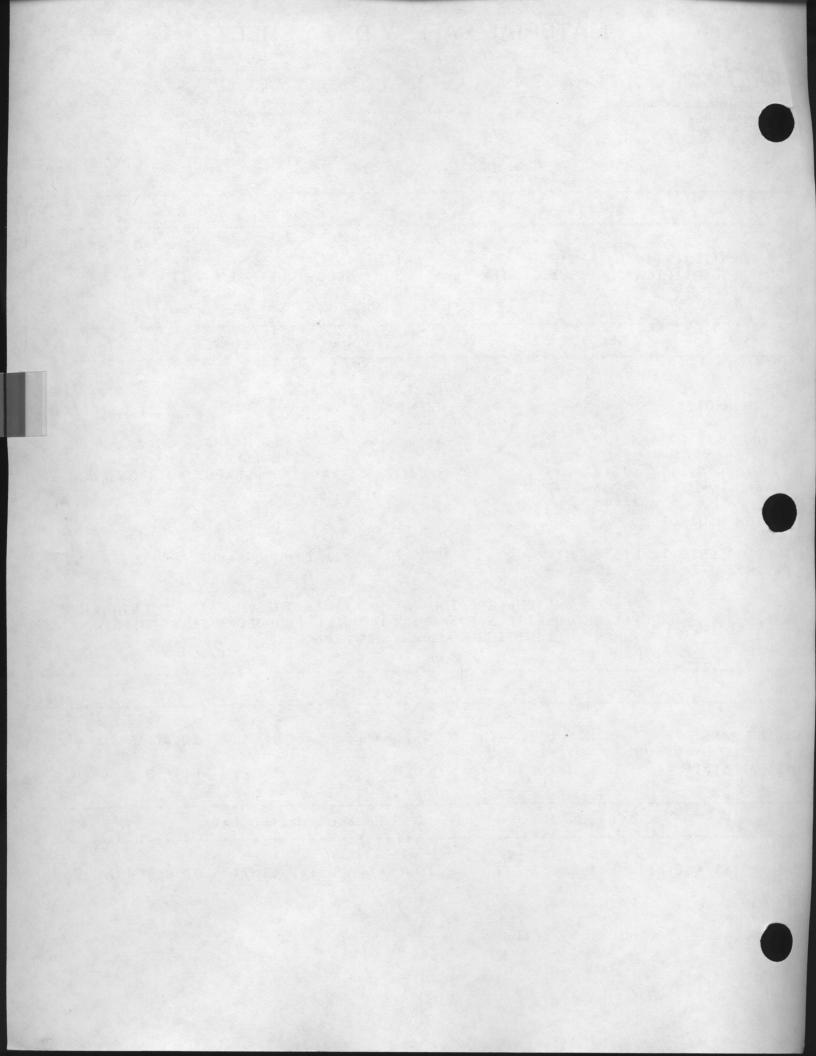
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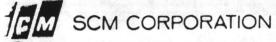
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			3700	PAGE 1
	SECTION I		****************	
RODOCT IDENTIFIC	ON 3700 ATION SPRED LATEX BASE	EVAMEL SEMI	-GLUSS-WHITE TIN	01/13/87
	SECTION II - H	AZARDOUS INC	GREDIENTS	
INGREDIENT ,		WEIGHT PERCENT	ACGIH TLV DSHA PEL	VAPOR LEL PRESS.
.UMINUM SILICATE		5	10 MG/M	N.A. N.A.
CARCINOGENICITY CAS NO	LISTED BY: 1335-30-4	NTP? NO	NUT CSTABLISHED	I? NO OSHA? NO
IUM DIOXIDE		18	10 MG/M3	N.A. 11.A.
CARCINDGENICITY CAS ND	LISTED BY: 1317-50-2		15 MG/M3 IARC MONOGRAPH	
· · · ·	LEL - THE LOWER E (% OF VOLATILES I WHEN AN IGNITION	SOURCE IS P	WILL PRODUCE A RESENT.	T CONCENTRATION FLASH OF FIRE
	SECTION III - PH	YSICAL DATA		
UILING RANGE VOLATILE BY VOLU	NOT DETERMINE	D WEIGHT	PER GALLON	10.40 WHITE
	SECTION IV - FI	RE AND EXPLO	DSION HAZARD DAT	A
• •	A30VE 200 F			
UT (PSN)				UT DETERMINED
CLASS	NOT RESTRICTED			



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3700 PAGE 2

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

TINGUISHING MEDIA

DRY CHEMICAL OR FOAM

USUAL FIRE AND EXPLOSION HAZARDS

CLOSED CONTAINERS MAY BURST IF EXPOSED TO EXTREME HEAT OR FIRE.

FECIAL FIRE FIGHTING PROCEDURES

WATER MAY BE USED TO COOL AND PROTECT EXPOSED CONTAINERS.

	SECTION V	- HEALTH HAZARD DATA
TE OF ENTRY	INHALATION	
	SKIN	
	EYES	

FECTS OF OVEREXPOSURE

IRRITATION OF EYES, SKIN, RESPIRATORY TRACT.

HERGENCY AND FIRST AID PROCEDURES

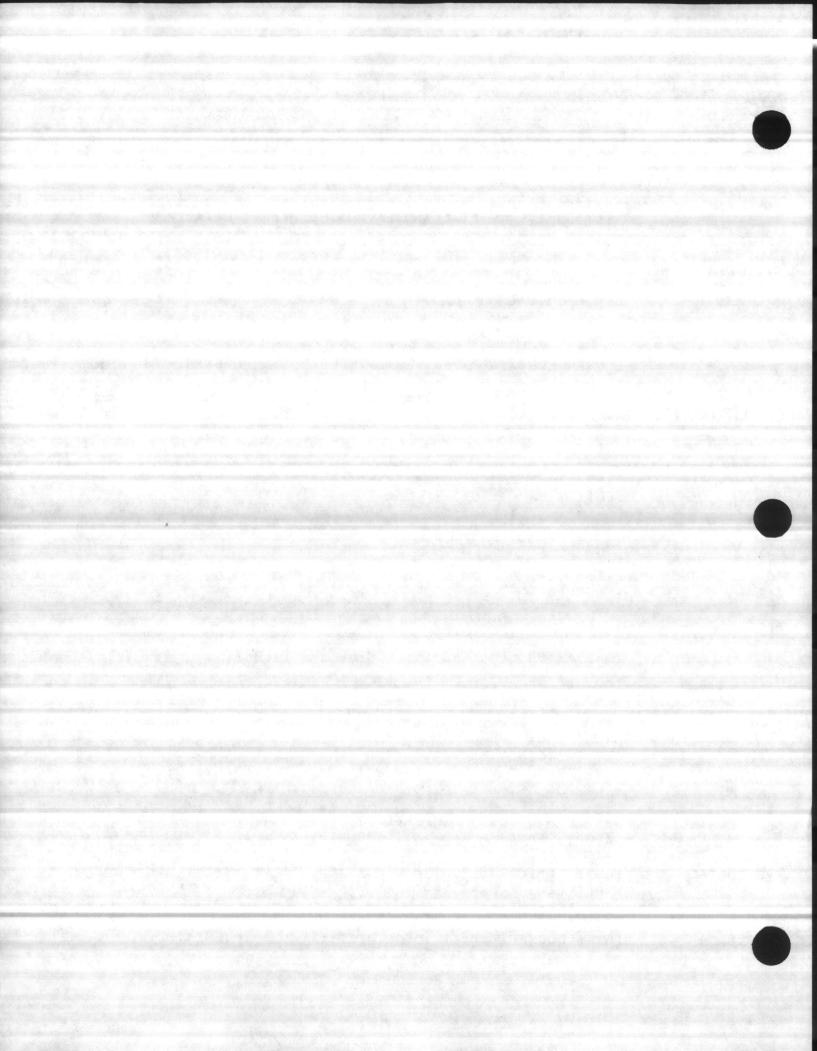
INGESTION

INHALATION REMOVE TO FRESH AIR. RESTORE AND SUPPORT CONTINUED BREATHING. GET EMERGENCY MEDICAL ATTENTION. HAVE TRAINED PERSON GIVE OXYGEN IF NECESSARY. GET MEDICAL HELP FOR ANY BREATHING DIFFICULTY.

SKIN CONTACT WASH DEE QUICKLY WITH PLENTY DE WATER, THEN SDAP AND WATER; REMOVE CONTAMINATED CLOTHING.

EYE CONTACT FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER, ESPECIALLY UNDER LIDS FOR AT LEAST 15 MINUTES. OBTAIN EMERGENCY MEDICAL TREATMENT.

ESTION IF SWALLOWED, OBTAIN MEDICAL TREATMENT IMMEDIATELY.





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PAGE 3

SECTION VI - REACTIVITY DATA

ABILITY STABLE

.COMPATIBILITY *** NOT DETERMINED ***

NDITIONS TO AVOID

*** NOT DETERMINED ***

LARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE

LARDOUS POLYMERIZATION

.

WILL NOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

4

EPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ELIMINATE ALL SOURCES OF IGNITION. VENTILATE AREA.

STE DISPOSAL DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

SPIRATORY PROTECTION

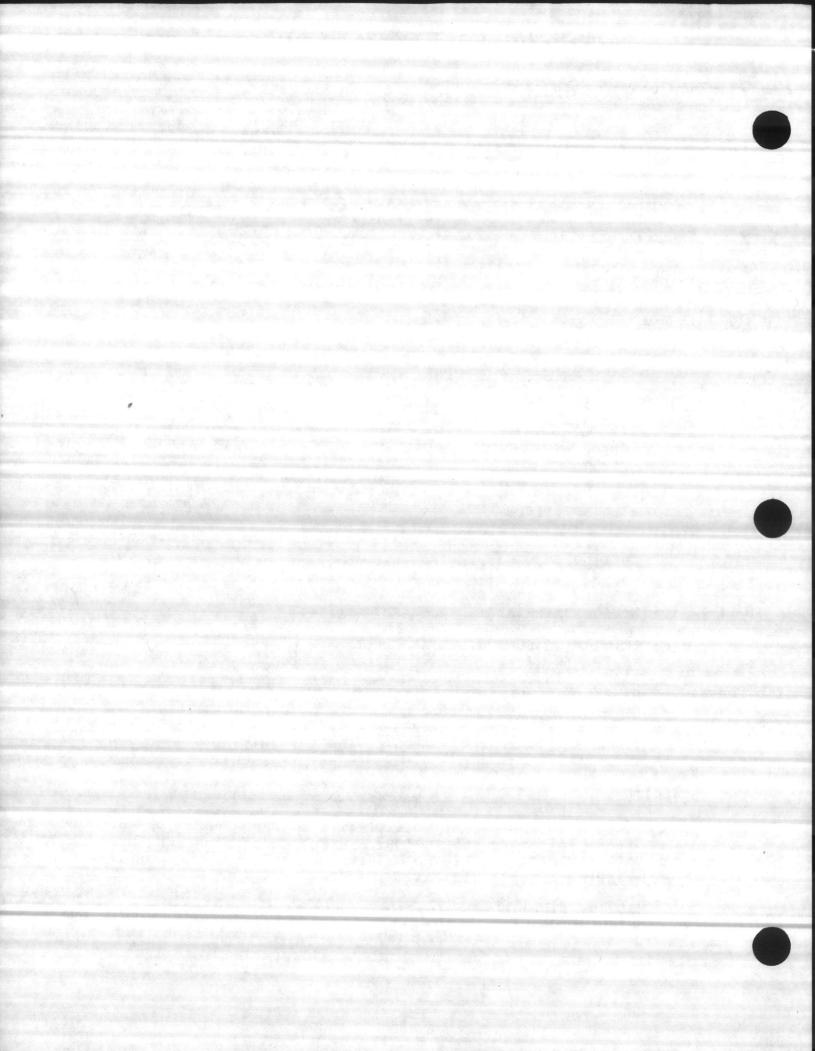
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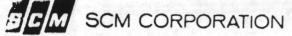
CONTROL ENVIRONMENTAL CONCENTRATIONS BELOW APPLICABLE STANDARDS. WHERE RESPIRATORY PROTECTION IS REQUIRED. USE ONLY NIOSH/MSHA APPROVED RESPIRATORS IN ACCORDANCE WITH OSHA STANDARD 29 CFR 1910.134.

NTILATION

PROVIDE DILUTION VENTILATION OR LOCAL EXHAUST TO PREVENT BUILD-UP OF VAPORS.







CLID AVENUE LAND, OHIO 44115 RGENCY TELEPHONE NO. (216) 826-5566 The information contained herein is based on data available at the time of preparation of this data sheet and which SCM Corporation believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. The SCM Corporation shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the or the charter and the health and safety of your employees and users of this material.

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PAGE 4

SECTION VIII - SPECIAL PROTECTION INFORMATION

PERSONAL PROTECTIVE EQUIPMENT

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EYE WASH SAFETY SHOWER SAFETY GLASSES OR GUGGLES

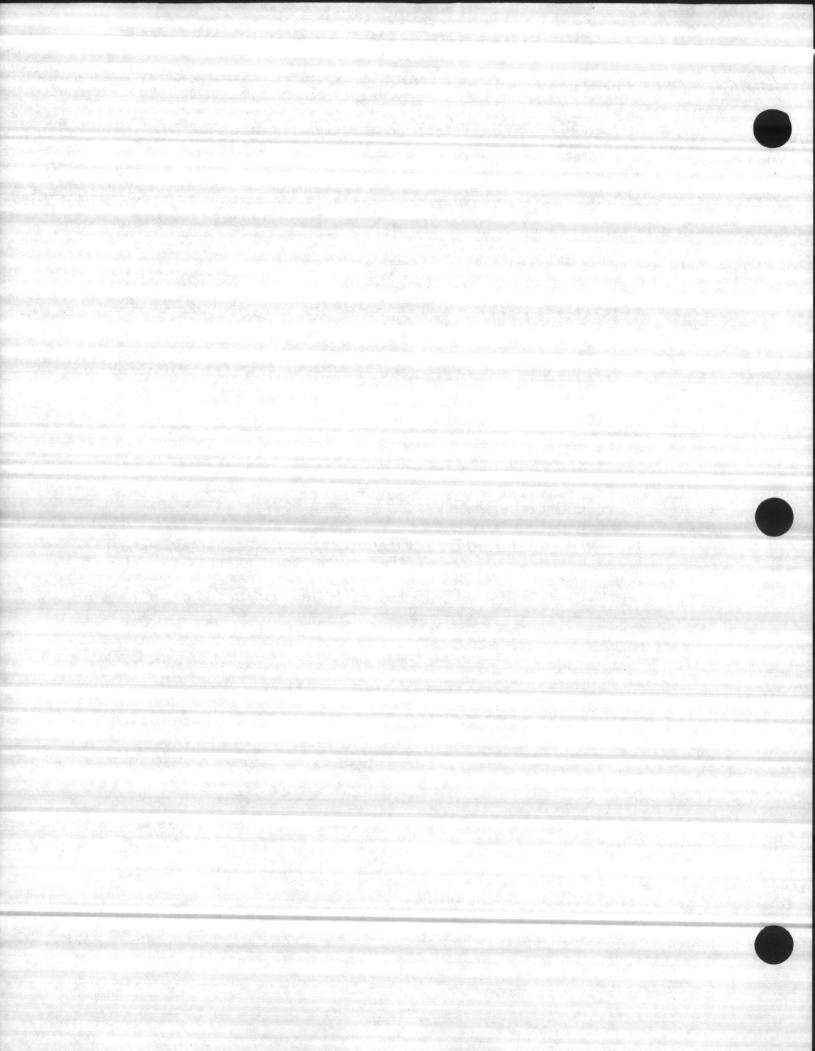
SECTION IX - SPECIAL PRECAUTIONS

HANDLING AND STORAGE

STORE BELOW 100 F.

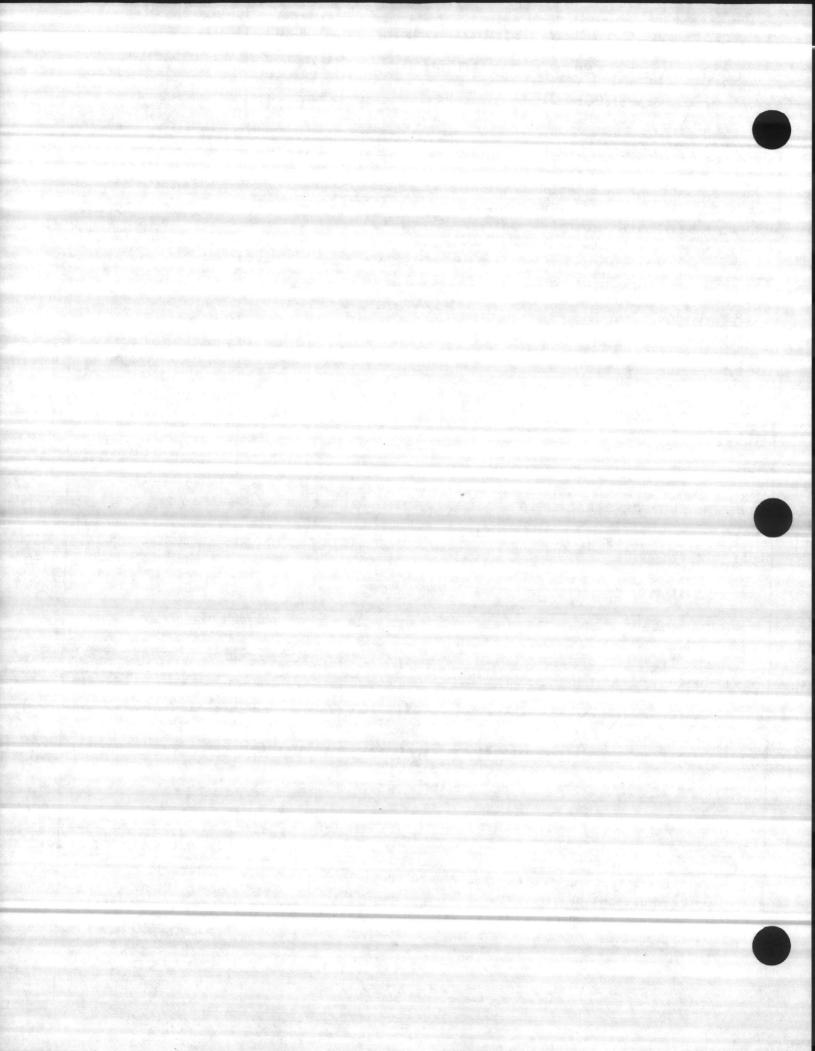
ITHER PRECAUTIONS

USE ONLY WITH ADEQUATE VENTILATION. DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN. AVOID CONTACT WITH SKIN AND EYES, AND BREATHING OF VAPORS. WASH HANDS THOROUGHLY AFTER HANDLING, ESPECIALLY BEFORE EATING OR SMOKING. KEEP CONTAINERS TIGHTLY CLOSED AND UPRIGHT WHEN NOT IN USE. AVOID BREATHING SANDING DUST.



SCHENECTADY, N. Y. 123	INFOF	RMATION	Date September 1978
	<u>\</u>		Date September 2010
ECTION I. MATERIAL IDENTIFICATION			ંસંજ
TERIAL NAME: CLEAR VARNISH 2609 THER DESIGNATIONS: Regulation Version #5 Code 91-285-R3KR ANUFACTURER: Mobil Chemical Company		ut Tone V	Wood Lacquer, Mobil
12815 Elmwood Avenue	Emergency T	elephone	: (212) 883-5368
Cleveland, OH 44111		X	HAZARD DATA
SECTION II. INGREDIENTS AND HAZARD	5		a share has a second to be
olvent Blend: Isopropanol (99%) Isobutyl Acetate Ethyl Acetate (99.5%) Toluene Xylene		25 30 5 10 5	8-hr TWA 400 ppm (ski 8-hr TWA 150 ppm 8-hr TWA 400 ppm 8-hr TWA 100 ppm (ski 8-hr TWA 100 ppm No TLV established
ECTION III. PHYSICAL DATA oiling point at 1 atm, deg F 183 apor pressure at 68 F, mm Hg 36 apor density (Air=1) ca 2. Mater solubility Insol	Volatiles, .9 Evaporation	% by volu	0=1) 0.92
ECTION III. PHYSICAL DATA oiling point at 1 atm, deg F 183 apor pressure at 68 F, mm Hg 36 apor density (Air=1) ca 2.	Volatiles, .9 Evaporation luble	% by volu rate (Bu	0=1) 0.92 me 83 Ac=1) 2.6 vent odor.
ECTION III. PHYSICAL DATA oiling point at 1 atm, deg F 183 apor pressure at 68 F, mm Hg 36 apor density (Air=1) ca 2. Jater solubility ca 2. Jater solubility Insolution appearance & Odor: A clear, light-colored	Volatiles, .9 Evaporation luble d liquid with a m	% by volu rate (Bu ixed solv	0=1) 0.92 me 83 Ac=1) 2.6 vent odor.
ECTION III. PHYSICAL DATA oiling point at 1 atm, deg F 183 apor pressure at 68 F, mm Hg 36 apor density (Air=1) ca 2. dater solubility ca 2. dater solubility ca 2. Section Like Colored SECTION IV. FIRE AND EXPLOSION DATE Flash Point and Method Autoignition	Volatiles, .9 Evaporation luble d liquid with a m TA Temp. Flammabili % by yo	% by volu rate (Bu ixed solv ity Limit	0=1) 0.92 me
ECTION III. PHYSICAL DATA oiling point at 1 atm, deg F 183 apor pressure at 68 F, mm Hg 36 apor density (Air=1) ca 2. Mater solubility ca 2. Section Light Insolution SECTION IV. FIRE AND EXPLOSION DAT	Volatiles, .9 Evaporation luble d liquid with a m TA Temp. Flammabili % by vo chemical foam, tainers with a wa IB liquit.	% by volu rate (Bu ixed solv ity Limit lume (app or a fine	0=1) 0.92 me 83 Ac=1) 2.6 vent odor. <u>LOWER UPPER</u> <u>s In Air</u> 1 12 e water mist may be use
ECTION III. PHYSICAL DATA oiling point at 1 atm, deg F 183 apor pressure at 68 F, mm Hg 36 apor density (Air=1) ca 2. Jater solubility Insolution appearance & Odor: A clear, light-colored SECTION IV. FIRE AND EXPLOSION DATE Flash Point and Method Autoignition 44F (TCC or PM) unknown Extinguishing Media: Carbon dioxide, dry to smother fire. Cool fire-exposed con This flammable material is an OSHA Class	Volatiles, 9 Evaporation luble d liquid with a m TA Temp. Flammabili % by vo chemical foam, tainers with a wa IB liquit	% by volu rate (Bu dixed solv ity Limit lume (app or a fine ater spray	O=1) 0.92 me 83 Ac=1) 2.6 vent odor. <u>LOWER UPPER</u> s In Air prox.) 1 12 e water mist may be us y.

•



SECTION VI. HEALTH HAZARD INFORMATION	TLV 150-200 ppm (est.) (See Sect. II)
The effects of excessive vapor inhalation from the range from irritation of the respiratory tract, sciousness. Contact with liquid will dry and de contact can produce irritation and dermatitis. tion and may be damaging. Do not ingest!	dizziness and nausea to loss of con- fat the skin; repeated or prolonged Eye contact produces pain and irrita-
FIRST AID: <u>Eve contact:</u> Flush with plenty of running water lids. Then, get prompt medical attention. Skin contact: Wipe off excess material. Wash ex-	for 15 minutes, including under eye-
Remove contaminated clothing promptly. Inhalation: Remove to fresh air. Restore breat	그는 그는 것은 것은 것을 바람이 가지 않는 것이 없는 것을 많이 했다.

Ingestion: Get prompt medical attention.

SPILL, LEAK, AND DISPOSAL PROCEDURES SECTION VII.

Evacuate spill area. Provide maximum explosion-proof ventilation. Remove ignition source Absorb small spills on paper towels, evaporate solvent in a hood; then, burn paper and resin. Safety personnel should be involved in handling large spills. Pick up spill with absorbent solid, such as vermiculite, using non-sparking tools and place in a polyethylene bag-lined metal container for disposal.

DISPOSAL: Observe Federal, State and local regulations for disposal of waste material. Material may be burned in an approved incinerator, disposed of via a licensed waste disposal company, or the solvents could be reclaimed before disposal of the residues.

SPECIAL PROTECTION INFORMATION SECTION VIII.

Provide general ventilation and local exhaust ventilation to meet TLV requirements. Exhaust hoods should maintain 100 1fm face velocity. Exhaust fans and electrical equipment must be of explosion-proof construction.

For emergency or non-routine use above the TLV an approved organic cartridge respirator should be available, with self-contained breathing equipment to be used above 2 to 3 times the TLV.

Prevent skin contact with impervious gloves and apron. Safety glasses are required; also use a face shield or safety goggles where splashing is possible. An eyewash station should be readily available.

SPECIAL PRECAUTIONS AND COMMENTS SECTION IX.

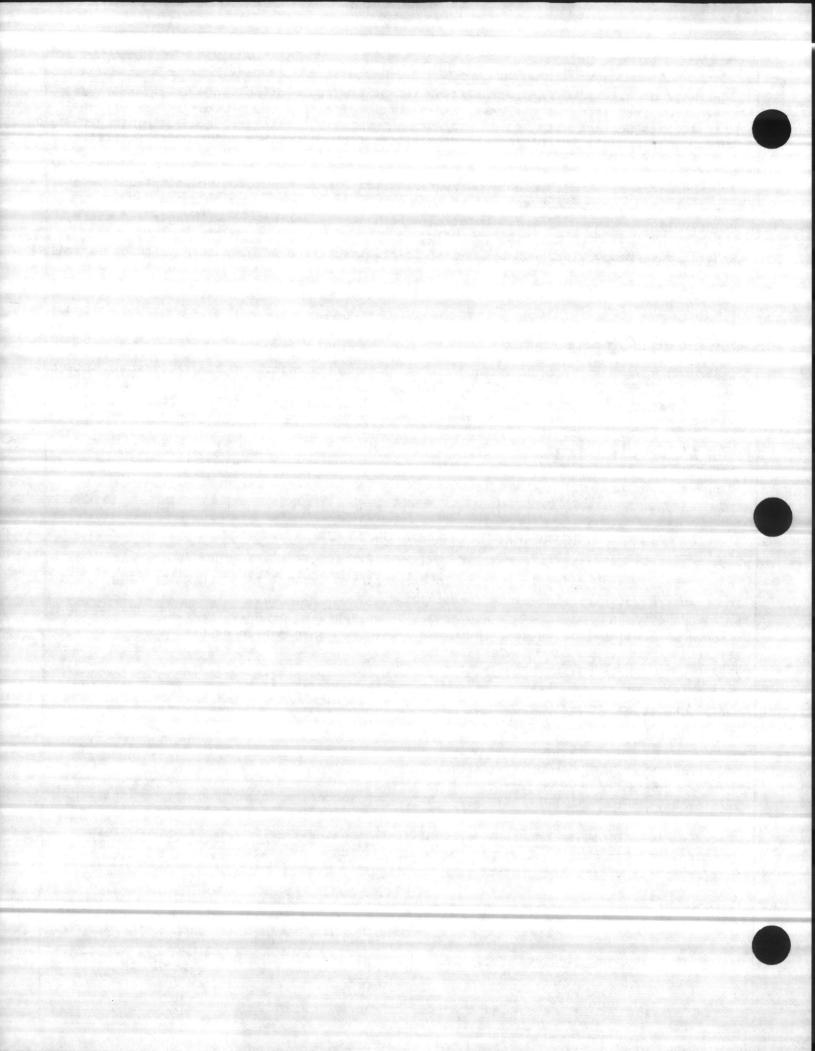
Store in a clean, well-ventilated area, away from sources of heat, sources of ignition, and oxidizing agents. Use non-sparking tools. Metal containers must be bonded and grounded for liquid transfers to prevent static sparks. Follow handling and storage requirements for an OSHA Class IB flammable liquid. Avoid breathing vapors and contact with the liquid.

DATA SOURCE(S) CODE: 1-3. Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has peen taken in the preparation of such information, General Electric Company extends no warranties makes no representations and assumes no responsibility as to the accuracy or suitability of such information for application to purchasers interined purposes or for consequences of its use

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NO.



For Coatings, Resins, and Related Materials (Approved by US Department of Labor Essentially Similar to Form OSHA 20)

Tate of :	Original_	6-23-86	19
	and the second sec	A CONTRACT STREET	

Revised 2-8-88

LHB 12B 830

SECTION I

Manufacturer's Name LHB Industries

Emergency Phone No. 314-522-3141

Specification No. CID A-A-665C

Address 8833 Fleischer Place Berkeley, MO 63134

Trade Name So - Sure Lacquer

GSA Contract No. GS - 10F - 51062 Person to Contact Steve Wenger Edward Lanser

Product Class Spray Paint (Aerosol)

THIS MATERIAL SAFETY DATA SHEET APPLIES TO :

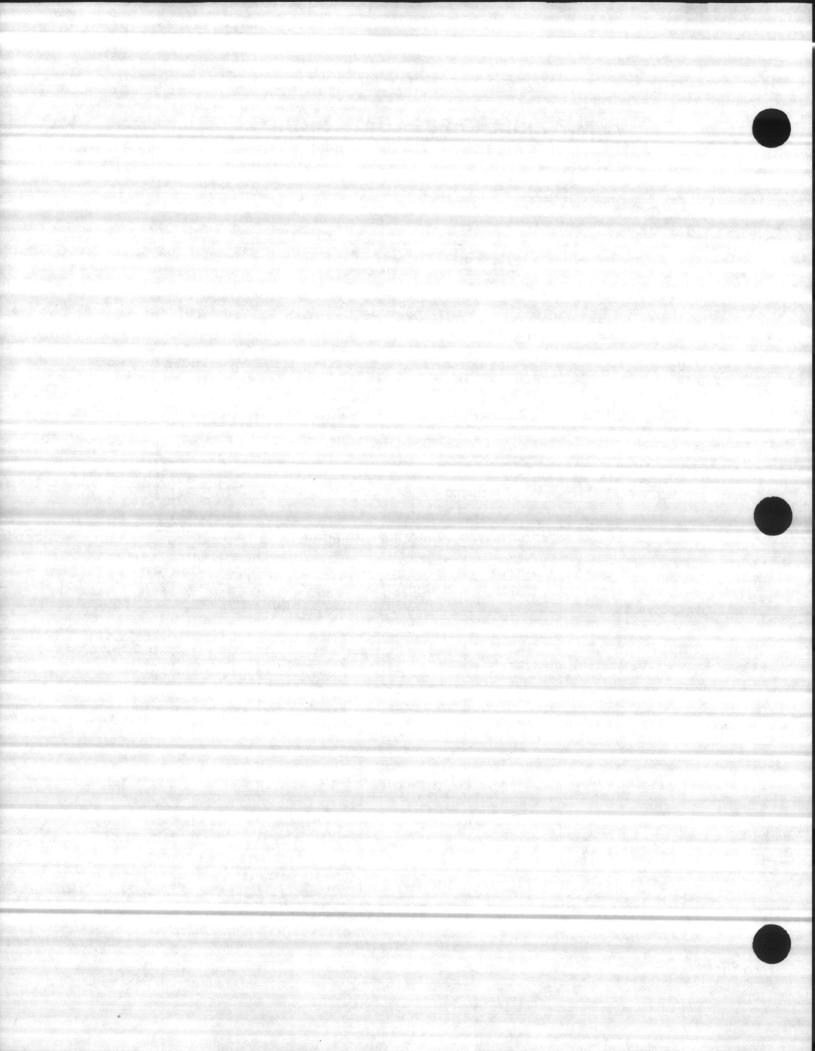
National Stock No.	Color/Color No.	Manufacturers ID	
8010-00-721-9744	Yellow 13538	14B130 (G/O)	
8010-00-721-9744 8010-00-290-6983	White 17875	14B170 (G/O)	
8010-00-721-9753	Blue 25184	14B253 (G/O)	

SECTION II - HAZARDOUS INGREDIENTS							
Ingredient (NIOSH Number)	Percent By Weight TLV		LEL	Vapor Pressure			
Paint Concentrate	30.00	ppm	mg/m ³	%	mm Hg at 20°C		
oluene (XS 5250000)	5	100	State and a state of the	1.2	28.00		
ylene (ZE 2100000)	<5	100		1.0	10.00		
VM & P Naphtha (DE 3030000)	5	300	and the second second	.9	30.00		
Calcium Carbonate (EV9580000)	<5		10	NA	NA		
Aromatic 150	<5	100		.9	1.00		
Titanium Dioxide (XR 2275000)	<5		10	a presidente de la comparte	and the state		
Solvents Acetone (AL 3150000)	15.00	750		2.6	180.00		
Toluene (XS 5250000)	25.00	100	and the second s	1.2	28.00		
Propellent Blend (by vol)	30.00	ngen Rechtsterer von die en die	and the second se	1.8	80 psig @ 70 F		
Propane 64%	a garage grant and	1000		allen allen			
Isobutane 14%		800					
N-Butane 22%		800					

AEROSOL - CONTENTS UNDER PRESSURE

SECTION III - PHYSICAL DATA **Evaporation Rate** * Faster **Boiling Range** PROPELLANT BELOW 0 F Slower than Ether *PROPELLANTS X Heavier **Vapor Density** _ Lighter than Air 206°F Critical Temp. Weight Per Autoignition Temp. 874 F Percent Volatile Gallon N/A 85 **Critical Pressure** 617 psia By Volume





SECTION	IV - FIRE AND	EXPLOSION	HAZARD DATA

DOT CATEGORY: Consumer Commodity ORM - D

FLASH POINT

L ...

 EXTINGUISHING MEDIA:
 Carbon Dioxide, Dry Chemical or Foam
 Propellant Below - 20°C, T.O.C.
 0.9

 UNUSUAL FIRE AND EXPLOSION HAZARDS:
 DO NOT SPRAY NEAR OPEN FLAME.
 KEEP AT ROOM TEMPERATURE AS EXPOSURE TO DIRECT SUNLIGHT OR OTHER HEAT MAY CAUSE BURSTING.

 SPECIAL FIRE FIGHTING PROCEDURES:
 WATER MAY BE INEFFECTIVE.
 WATER MAY BE USED TO KEEP FIRE EXPOSICONTAINERS COOL

 EXPOSURE FOR OVEREXPOSURE:
 WATER MAY BE INEFFECTIVE.

 MATER MAY BE INEFFECTIVE.

 WATER MAY BE INEFFECTIVE.

 WATER MAY BE USED TO KEEP FIRE EXPOSICONTAINERS COOL

 EEFECTS OF OVEREXPOSURE:

 IN A CONFINED AREA, VAPORS IN HIGH CONCENTRATION ARE ANESTHETIC.

 IRRITATION TO SKIN AND RESPIRATORY TRACT. OVEREXPOSURE MAY RESULT IN LIGHT-HEADEDNESS, STAGGERING GAIT, GIDDINESS AND POSSIBLE NAUSEA. HARMFUL OR FATAL IF SWALLOWED.

 MOTORY LAVE ASSOCIATED REPORT AND PROLONICE OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH

NOTICE: REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

EMERGENCY FIRST AID PROCEDURES :

APPLICABLE REGULATIONS

INHALATION: MOVE PERSON TO WELL VENTILATED AREA. RESTORE BREATHING. GET MEDICAL ATTENTION. SKIN CONTACT: WIPE WITH CLEAN CLOTH, WASH THOROUGHLY WITH SOAP AND WATER. EYE CONTACT: FLUSH THOROUGHLY WITH WATER, GET MEDICAL ATTENTION. INGESTION: GET MEDICAL ATTENTION IMMEDIATELY. DO NOT INDUCE VOMITING.

SECTION VI - REACTIVITY DATA

X Stable	Conditions to Avoid	
CARBON MONOXIDE, CARBO	N DIOXIDE AND POSSIBLE HYDROGEN CHLORID	E
May Occur	X Will Not Occur	
	CARBON MONOXIDE, CARBO	CARBON MONOXIDE, CARBON DIOXIDE AND POSSIBLE HYDROGEN CHLORID

SECTION VII - SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released Or Spilled: REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. MOP SPILLS WITH INERT ABSORBENT. AVOID BREATHING VAPORS.

Waste Disposal Method : DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: AVOID BREATHING OF VAPOR OR SPRAY MIST. IF NECESSARY, USE NIOSH/MSHATC-23c OR EQUIVALENT. Ventilation: PROVIDE LOCAL EXHAUST VENTILATION (EXPLOSION PROOF) IN VOLUME AND PATTERN TO KEEP TLV OF MOST HAZARDOUS INGREDIENTS IN SECTION II BELOW ACCEPTABLE LIMIT. AND LEL IN SECTION IV BELOW STATED LIMIT. Protection Gloves: RECOMMENDED FOR PROLONGED OR REPEATED CONTACT.

Eye Protection : FOR PROLONGED USE IN CLOSE QUARTERS, RECOMMEND SAFETY GLASSES WITH UNPERFORATED SIDESHIELDS.

Other Protection Equipment: EXPLOSION PROOF LIGHTING AND VENTILATING EQUIPMENT.

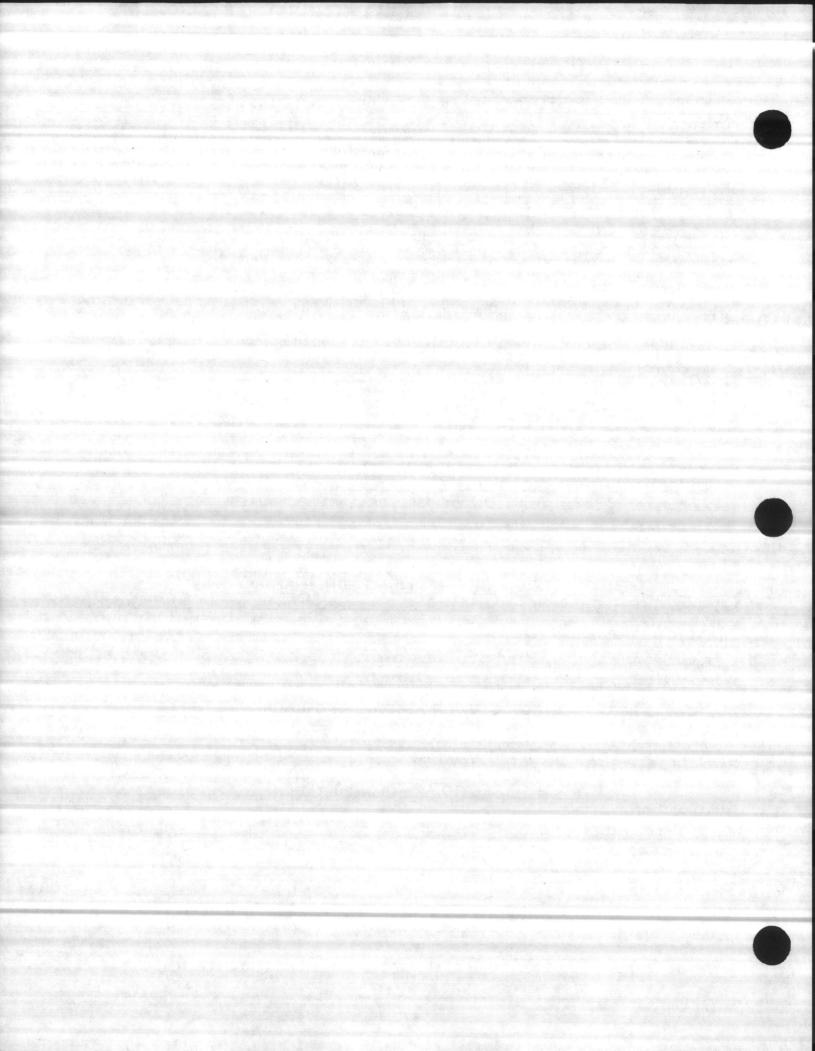
SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing: STORE BELOW 120 DEGREES F. KEEP CONTAINERS CLOSED AND AWAY FROM HEAT AND OPEN FLAME OR STORAGE IN DIRECT SUNLIGHT.

Other Precautions: DO NOT PUNCTURE OR INCINERATE CONTAINERS. AVOID PROLONGED BREATHING OF VAPORS OR SPRAY MIST. DO NOT SPRAY NEAR OPEN FLAME OR FIRE. KEEP AWAY FROM CHILDREN.

SECTION X - TRANSPORTATION

X 49 CFR IMC0	D TARIFF6D	IAT	A MII	ITARY AIR (ARF 71-4
Shipping Name CONSUMER COMMODIT	Y	ID Number Report QT NONE NO		
Hazard Class ORM - D	Labels		alam ang si shi kan si aki kang nanan na salam ng Kanatan paga 19	
Unit Container PINT	DOT SPSC Container NONE	DOT E	xempt / DOD CCN NONE	Limited QTY YES
AEROSOL PROPELLANT (S) PROPANE / BUTANES			NET EXPL WT 3.4 oz.	



For Coatings, Resins, and Related Materials (Approved by US Department of Labor Essentially Similar to Form OSHA 20)

JANUARY 26, 1987 our Cop Date of: Original Revised SECTION I **GSA** Contract No. Manufacturer's Name GS-10F-50946 LHB INDUSTRIES

Address

8833 Fleischer Place Berkeley, MO 63134

Emergency Phone No. 314-522-3141

Product Class (Spray Paint (Aerosol)

Trade Name So - Sure

Manufacturers Code Identification 64-390-P

Specification No. TT-E-527C

National Stock No. 8010-00-616-9143

Color / Color No. **BLACK 37038**

> Person to Contact Steve Wenger Edward Lanser

en de la companya de				INGREDIENTS	1912 313	The second second second second
INGREDIENT		PERCENT BY WEIGHT	TLV	PEL	LEL	VAPOR PRESSUR
Paint Concentrate	a and the	24.44	and the second	and the second second	1.	
Mineral Spirits Xylene		7.33 1.22	100 ppm 100 ppm	2950 mg /m ³ 435 mg /m ³		
Silica, Crystalline - Cristobalite Silica, Amorphous Barium Sulfate Talc Propylene Glycol Methyl Ether Acetate		1.22 1.22 • 2.44 3.67 1.22	.05 mg /m ³ 10 mg /m ³ .50 mg /m ³ 2 mg /m ³ NONE E	15 mg /m ³ STABLISHED		
			· ·			
Solvents	and the second	Ser Service				
Methylene Chloride		32.48	100		13	
Acetone		5.20	750		2.6	
Toluene		12.38	100		1.2	
Propellent Blend	(by vol)	25.50			1.8	To many our many and
Propane	64%		1000			and a later to be
Isobutane	14%		800	States and a state	Section of	
N-Butane	22%	and the second second second	800	Card and the state of the second second	and announcements	

AEROSOL - CONTENTS UNDER PRESSURE

SECTION III - PHYSICAL DATA

Boiling Range

Evaporation Rate

PROPELLANT BELOW 0°F

* Faster

Vapor Density

X Heavier

Lighter than Air

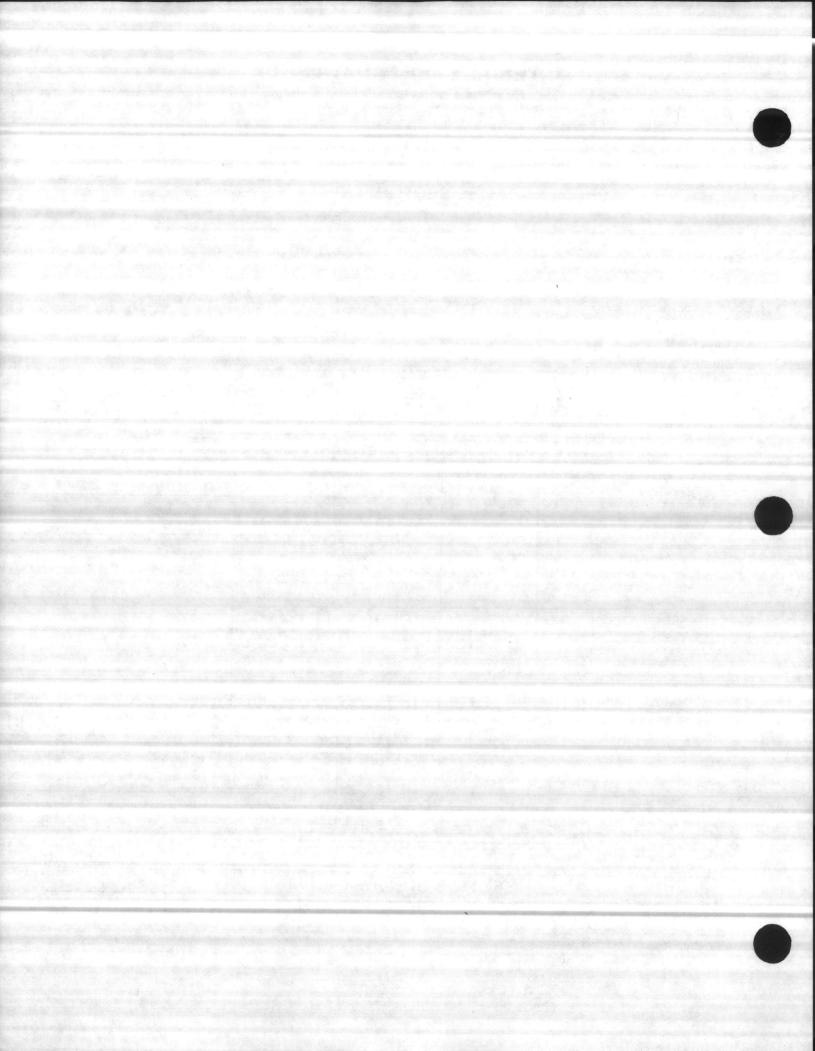
85

Percent Volatile By Volume

Weight Per Gallon

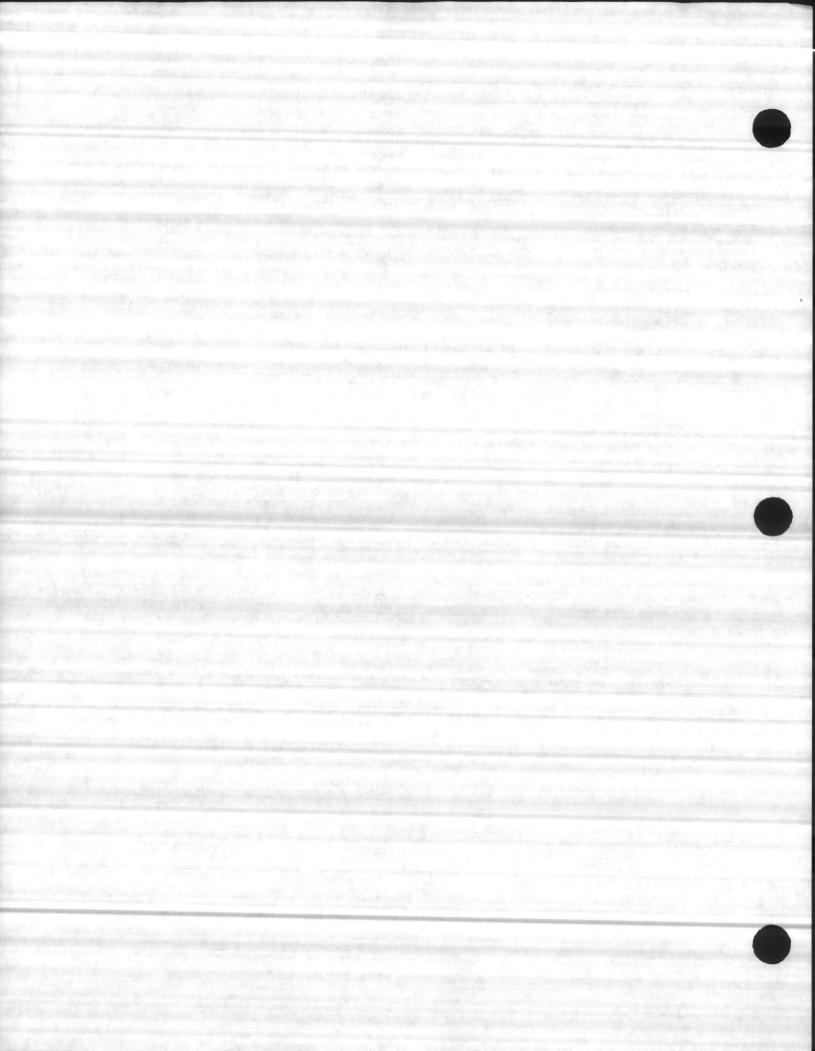
N/A

Slower than Ether *PROPELLANTS

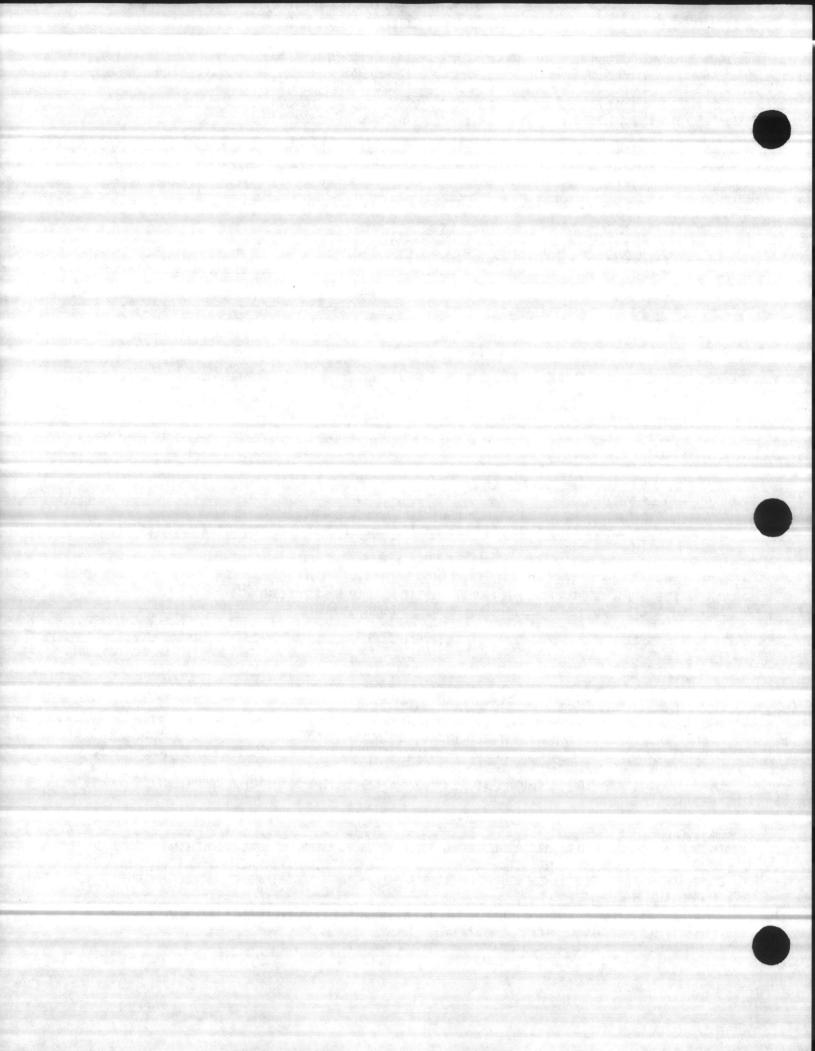


S	ECTION IV - FIRE AND EXP	LOSION HAZA	RD DATA	
EXPOSURE TO DIRECT SUN	ommodity ORM - D oon Dioxide, Dry Chemical or Foam DN HAZARDS : DO NOT SPRAY LIGHT OR OTHER HEAT MAY CAUS CEDURES : WATER MAY BE INEF	Propellant NEAR OPEN FLAI SE BURSTING.	ME. KEEP AT ROOM	
	SECTION V - HEALTI	HAZARD DAT	4	
IRRITATION TO SKIN AND R GAIT, GIDDINESS AND POSS NOTICE: REPORTS HAVE ASSO PERMANENT BRAIN AND NE INHALING THE CONTENTS M EMERGENCY FIRST AID PROCE INHALATION: MOVE PERS SKIN CONTACT: WIPE WIT EYE CONTACT: FLÜSH TH	IN A CONFINED AREA, VAPORS ESPIRATORY TRACT. OVEREXPOS BIBLE NAUSEA. HARMFUL OR FAT OCIATED REPEATED AND PROLON RVOUS SYSTEM DAMAGE. INTEN MAY BE HARMFUL OR FATAL.	URE MAY RESULT AL IF SWALLOWED GED OCCUPATION FIONAL MISUSE B RESTORE BREATI GHLY WITH SOAP DICAL ATTENTION	IN LIGHT-HEADED D. IAL OVEREXPOSURI Y DELIBERATELY CO HING. GET MEDICA AND WATER. N.	NESS, STAGGERING E TO SOLVENTS WITH DNCENTRATING AND
	SECTION VI - REA	CTIVITY DATA		
Stability : Unst Incompatability (Materials to ave Hazardous Decomposition Prod Hazardous Polymerization : Conditions to Avoid	The second se	BON DIOXIDE AN	ons to Avoid D POSSIBLE HYDRO I Not Occur	DGEN CHLORIDE
	SECTION VII - SPILL OR		JRES	
SPILLS WITH INERT ABSORE Waste Disposal Method: DISPO CONTAINERS.	rial Is Released Or Spilled: REM BENT. AVOID BREATHING VAPORS DSE IN ACCORDANCE WITH ALL AN CTION VIII - SPECIAL PRO	3. PPLICABLE REGUI	ATIONS. DO NOT II	
Respiratory Protection: AVOID BF Ventilation: PROVIDE LOCALES HAZARDOUS INGREDIENTS Protection Gloves: RECOMME Eye Protection: FOR PROLON SIDESHIELDS.	REATHING OF VAPOR OR SPRAY MIST KHAUST VENTILATION (EXPLOSION IN SECTION II BELOW ACCEPTAB NDED FOR PROLONGED OR REPE GED USE IN CLOSE QUARTERS, EXPLOSION PROOF LIGHTING ANI	I FNECESSARY, U PROOF) IN VOLU LE LIMIT, AND LE ATED CONTACT. RECOMMEND SA	SE NIOSH/ MSHATC ME AND PATTERN T IN SECTION IV BE AFETY GLASSES WI	O KEEP TLV OF MC LOW STATED LIMI1.
	SECTION IX - SPECIA	L PRECAUTION	S	
FROM HEAT AND OPEN FLAN Other Precautions : DO NOT PL	ling and Storing: STORE BELOW ME OR STORAGE IN DIRECT SUNI JNCTURE OR INCINERATE CONTA Y NEAR OPEN FLAME OR FIRE. KI	IGHT. INERS. AVOID PF	OLONGED BREATH	
	SECTION X - TRAN	SPORTATION	production of the second s	
APPLICABLE REGULATIONS				
X 49 CFR	IMCO TARIFF6D	IATA	MIL	ITARY AIR (ARF 71-4)
Shipping Name		ID Number	ing press and the log of the log	Report QTY
CONSUMER COMM	ODITY	NONE		NO
Hazard Class ORM - D		Labels	NONE	
Unit Container DOT SPSC Container DOT Exempt / DOD CCN Lin				Limited QTY
PINT	NONE	and a second	NONE	YES
PROPANE / BUTANE	S		NET EXPL WT 3.4 oz.	

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HANUFACTURER'S NAME STREET ADDRESS CITY, STATE & ZIP EMERGENCY PHONE # INFORMATION PHONE #	: 1809 BAYARD : BALTIMORE, M : (301) 727-38	STREET ID 21230 23 22		PRODUCT NUMBER PRODUCT NAME PRODUCT CLASS DATE REVISED DATE ISSUED	INDUST. ENAMEL De ALKYD GLOSS ENAME	lft Blue 🛺
			SECTION II	- HAZARDOUS ING		
		TLV V	APOR	CAS NUMBER	}	
INGREDIENT TITANIUM DIOXIDE MINERAL SPIRITS	Z WGHT P 28.65 . 38.27 100.	PM HG/N P 000 5.000 000 .000	RESS LEL .00 .00 .10 1.00	13463-67-7 8052-41-3		
EL expressed in pe	rcent; Vapor e	xpressed in a	nHg			
			SECTION	III - PHYSICAL I	ATA	
BOILING RANGE:	317.00 to 380	.00 deg. F.	X VOL GHTER THAN AI	ATILE VOLUME: 5 R	57.70%	
EVAPORATION RATE:	[] FASTER	[X] SL	OWER THAN ETH	ER	WT/GAL: 9.80 10	5+
		SEC	TION IV - FIR	E AND EXPLOSION	HAZARD DATA	
USE ANY CLASS	B APPROVED FIR	.;; WATER FOG E EXTINGUISHE				
JNUSUAL FIRE AND EX KEEP CONTAINER CLOSED CONTAIN SPECIAL PRECAU SPECIAL FIREFIGHTIN WATER SPRAY MA WATER MAY BE U	B APPROVED FIF PLOSION KAZARD S TIGHTLY CLOS ERS MAY EXPLOI TIONS. G PROCEDURES: Y BE INEFFECTI SED TO COOL CO	RE EXTINGUISHE SED. ISOLATE DE WHEN EXPOSE LVE. IF WATER DNTAINERS TO F	R FROM HEAT, EL D TO EXTREME IS USED, FOO PREVENT PRESSU	HEAT. APPLICAT NOZZLES ARE PR		REQUIRES
UNUSUAL FIRE AND EX KEEP CONTAINER CLOSED CONTAINE SPECIAL PRECAU SPECIAL FIREFIGHTIN WATER SPRAY MA WATER MAY BE U	B APPROVED FIF PLOSION KAZARD S TIGHTLY CLOS ERS MAY EXPLOI TIONS. G PROCEDURES: Y BE INEFFECTI SED TO COOL CO	RE EXTINGUISHE ED. ISOLATE DE WHEN EXPOSE EVE. IF WATER DATAINERS TO F AT INCLUDING S	R FROM HEAT, EL D TO EXTREME IS USED, FOO PREVENT PRESSI SELF CONTAINED	HEAT. APPLICAT NOZZLES ARE PR	ION TO HOT SURFACES EFERABLE, EXPLOSION, RATUS FOR PROTECTIO	REQUIRES
UNUSUAL FIRE AND EX KEEP CONTAINER CLOSED CONTAINER SPECIAL PRECAU SPECIAL FIREFIGHTIN WATER SPRAY MA WATER MAY BE U USE FULL PROTE EFFECTS OF OVER EXF INHALATION: J STEPS; HEADACU SKIN OR EYE CO HEALTH STUDIES PERSON TO PER: MEDICAL CONDITIONS INHALATION BY PRIMARY ROUTE(S) O [] DERM EMERGENCY AND FIRS INHALATION: SPLASH (EYES) SPLASH (SKIN) IF IRRITATION	B APPROVED FIF PLOSION KAZARD S TIGHTLY CLOS ERS MAY EXPLOI TIONS. G PROCEDURES: Y BE INEFFECTI SED TO COOL CO CTIVE EQUIPMEN COSURE: (RRITATION OF HE, DIZZINESS, DNTACT: PRIMAR G HAVE SHOWN T GON. AS A PRE PRONE TO AGGR PERSONS WITH F ENTRY: AL CXJ INHALA T AID PROCEDUR REMOVE TO FRES : FLUSH INHEI : WASH AFFECTE PERSISTS.	RE EXTINGUISHE SED. ISOLATE SED. ISOLATE DE WHEN EXPOSE EVE. IF WATER DITAINERS TO F AT INCLUDING S THE RESPIRATO STAGGERING,C Y IRRITATION HAT MANY PETR CAUTION, EXPO AVATION: RESPIRATORY P TION [] ING ES: H AIR. RESTO DIATELY WITH L D AREAS WITH	R FROM HEAT, EL D TO EXTREME ID TO EXTREME IS USED, FOO PREVENT PRESSI SELF CONTAINED SECTION RY TRACT OR AN ONFUSION, OR O ONFUSION, OR O SURE TO LIQUI ROBLEMS COULD ESTION RE BREATHING, ARGE AMOUNT O SOAP AND WATE	HEAT. APPLICAT NOZZLES ARE PR IRE BUILD-UP AND D BREATHING APPA N V - HEALTH HAZ CUTE NERVOUS SYS COMA. RBONS POSE POTEN DS AND VAPORS OF HAVE THE CONDIT TREAT SYMPPTOM F WATER FOR AT N R. REMOVE CONT/	EFERABLE, EXPLOSION, RATUS FOR PROTECTIO ARDS TEM DEPRESSION CHAR ITIAL HEALTH RISKS N PETROLEUM PRODUCTS TON ADDITIONALLY AC NTICALLY, CONSULT I EAST 15 MINUTES, MINATED CLOTHING,	REQUIRES N. NACTERIZED BY FOLLOWING S SHOULD BE MINIMIZED. GGRAVATED. PHYSICIAN. CONSULT PHYSICIAN.
UNUSUAL FIRE AND EX KEEP CONTAINER CLOSED CONTAINER SPECIAL PRECAU SPECIAL FIREFIGHTIN WATER SPRAY MA WATER MAY BE U USE FULL PROTE USE FULL PROTE EFFECTS OF OVER EXF INHALATION: J STEPS; HEADACU SKIN OR EYE CO HEALTH STUDIES PERSON TO PER: MEDICAL CONDITIONS INHALATION BY PRIMARY ROUTE(S) O [] DERM EMERGENCY AND FIRS INHALATION: SPLASH (EYES) SPLASH (SKIN) IF IRRITATION	B APPROVED FIF PLOSION KAZARD S TIGHTLY CLOS ERS MAY EXPLOI TIONS. G PROCEDURES: Y BE INEFFECTI SED TO COOL CO CTIVE EQUIPMEN COSURE: (RRITATION OF HE, DIZZINESS, DATACT: PRIMAR D HAVE SHOWN T SON. AS A PRE PRONE TO AGGR PERSONS WITH F ENTRY: AL CXJ INHALA T AID PROCEDUR REMOVE TO FRES : FLUSH INHEI WASH AFFECTE PERSISTS. RINK 1 OR 2 GL	RE EXTINGUISHE C: SED. ISOLATE DE WHEN EXPOSE EVE. IF WATER DITAINERS TO F AT INCLUDING S THE RESPIRATO STAGGERING,C Y IRRITATION HAT MANY PETR CAUTION, EXPO AVATION: RESPIRATORY P TION [] ING ES: H AIR. RESTO DIATELY WITH L D AREAS WITH ASSES OF WATE TREAT SYMPTO	R FROM HEAT, EL D TO EXTREME ID TO EXTREME IS USED, FOO PREVENT PRESSU SELF CONTAINED SECTION RY TRACT OR A ONFUSION, OR I OR SENSITIZER OLEUM HYDROCA SURE TO LIQUI ROBLEMS COULD ESTION RE BREATHING, ARGE AMOUNT O SOAP AND WATE R TO DILUTE.	HEAT. APPLICAT NOZZLES ARE PRI IRE BUILD-UP AND D BREATHING APPA N V - HEALTH HAZ CUTE NERVOUS SYS COMA. RBONS POSE POTEN DS AND VAPORS OF HAVE THE CONDIT TREAT SYMPPTOMA F WATER FOR AT N R. REMOVE CONTA DO NOT INDUCE V	EFERABLE, EXPLOSION, RATUS FOR PROTECTIO ARDS TEM DEPRESSION CHAR ITIAL HEALTH RISKS N PETROLEUM PRODUCTS TON ADDITIONALLY AC NTICALLY, CONSULT I EAST 15 MINUTES, MINATED CLOTHING,	REQUIRES N. RACTERIZED DY FOLLOWING WHICH MAY VARY FROM S SHOULD BE MINIMIZED. GGRAVATED. PHYSICIAN. CONSULT PHYSICIAN. CONSULT PHYSICIAN



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FOR COATINGS, RESINS AND RELATED MATERIALS

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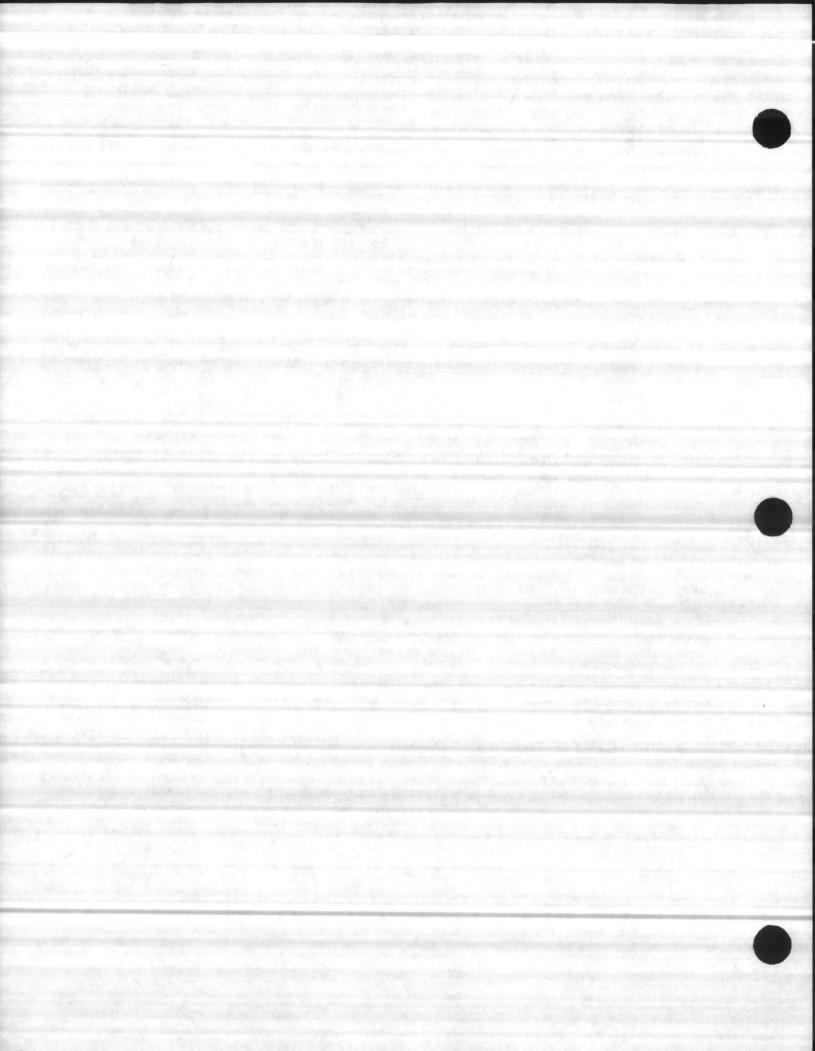
SECTION	VI -	REACTIVITY	DATA

STABILITY C J UNSTABLE EX MAZARDOUS POLYMERIZATIÓN	CI STADLE CI HAY OCCUR [X] WILL NOT OCCUR
AZARDOUS DECOMPOSITION PRO	DUCTS:
	HER ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.
CONDITIONS TO AVOID: HEAT AND OPEN FLAME,	
INCOMPATIBILITY (MATERIALS OXIDIZING AGENTS.	TO AVOID):
	SECTION VII - SPILL OR LEAK PROCEDURES
	MATERIAL IS RELEASED OR SPILLED:
REMOVE SOURCES OF IGNI AVOID BREATHING VAPOR DISPOSAL.	TION AND PROVIDE VENTILATION. USE SCOOP ON LARGE SPILLS AND ABSORBENT MATERIAL ON SHALL SPILLS. AND USE RESPIRATORY PROTECTION. FLUSH AREA WITH WATER. HOLD CLEAN-UP MATERIALS FOR PROPER
WASTE DISPOSAL METHOD:	
HAZARD CAUTION INFORMA	NE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. BEFORE ATTEMPTING CLEAN-UP, REFER T ITION IN OTHER SECTIONS OF THIS SHEET.
	SECTION VIII - SAFE HANDLING AND USE INFORMATION
RESPIRATORY PROTECTION:	
	ON: MECHANICAL FILTER TO REMOVE SOLID PARTICALS.
	I: USE CHENICAL/HECHANICAL FILTER TO REMOVE BOTH VAPOR AND SOLIDS.
VENTILATION: USE A	IR LINE TYPE RESPIRATOR.
DESIGNED AND MAINTAINE	TO TO PROVIDE VOLUME AND PATTERN TO PREVENT CONCENTRATION IN EXCESS OF TLV. REMOVE DECOMPOSITION IG OR BURNING OF THIS PRODUCT.
PROTECTIVE GLOVES:	
EYE PROTECTION:	INPERVIOUS TYPE GLOVES.
USE GOGGLES OR SIDE SH	ITELD SPECTACLES.
OTHER PROTECTIVE EQUIPMENT:	
HAVE EYE WASH STATION	AND SAFETY SHOWERS AVAILABLE
HYGIENIC PRACTICES:	
	ING OR USING WASHROOM, SMOKE IN DESIGNATED AREAS ONLY.
	SECTION IX - SPECIAL PRECAUTIONS
PRECAUTIONS FOR HANDLING AN	
STORE AWAY FROM HEAT,	SPARKS, AND OPEN FLAME IN WELL VENTILATED AREA. DO NOT STORE ABOVE 100 DEG. F. KEEP CLOSURE RIGHT TO PREVENT LEAKAGE. DO NOT PUNCTURE, DRAG, OR SLIDE CONTAINERS.
DTHER PRECAUTIONS:	

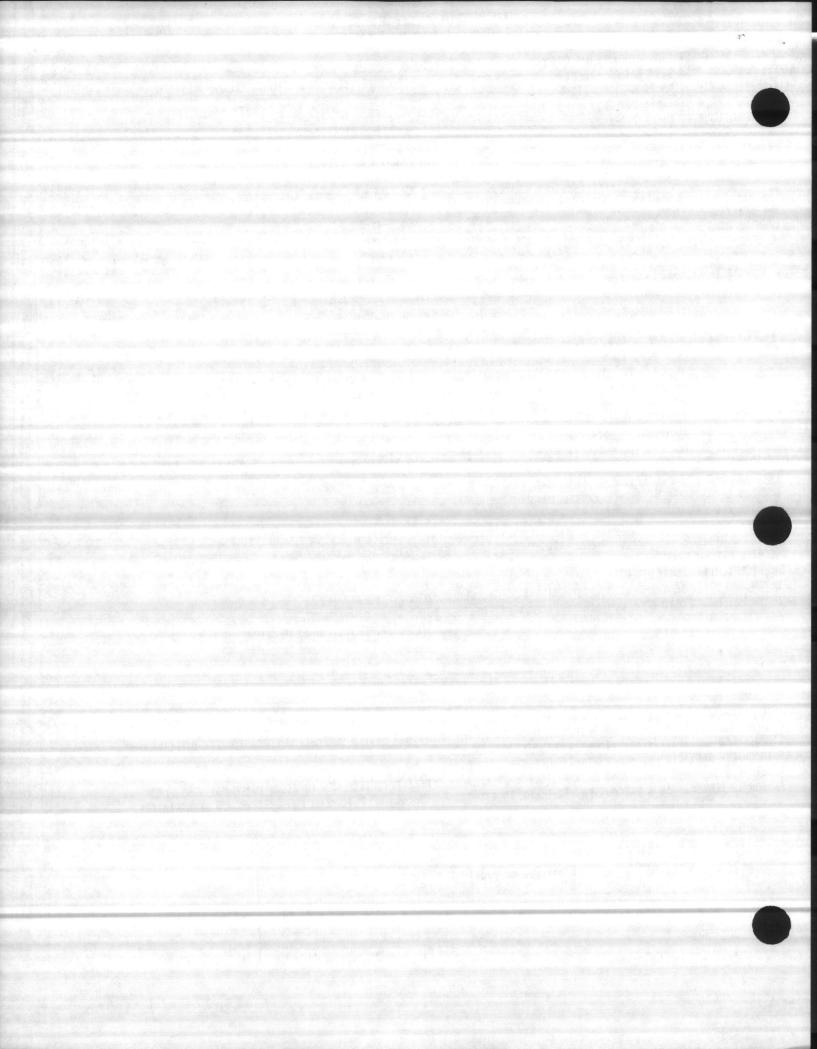
DO NOT GET IN EYES. AVOID SKIN CONTACT. PREVENT PROLONGED OR REPEATED BREATHING OF VAPOR OR SPRAY MIST. DRUMS SHOULD BE GROUNDED WHEN POURING. RESTRICT FREE-FALL OF LIQUID TO A FEW INCHES TO AVOID GENERATION OF STATIC CHARGE.

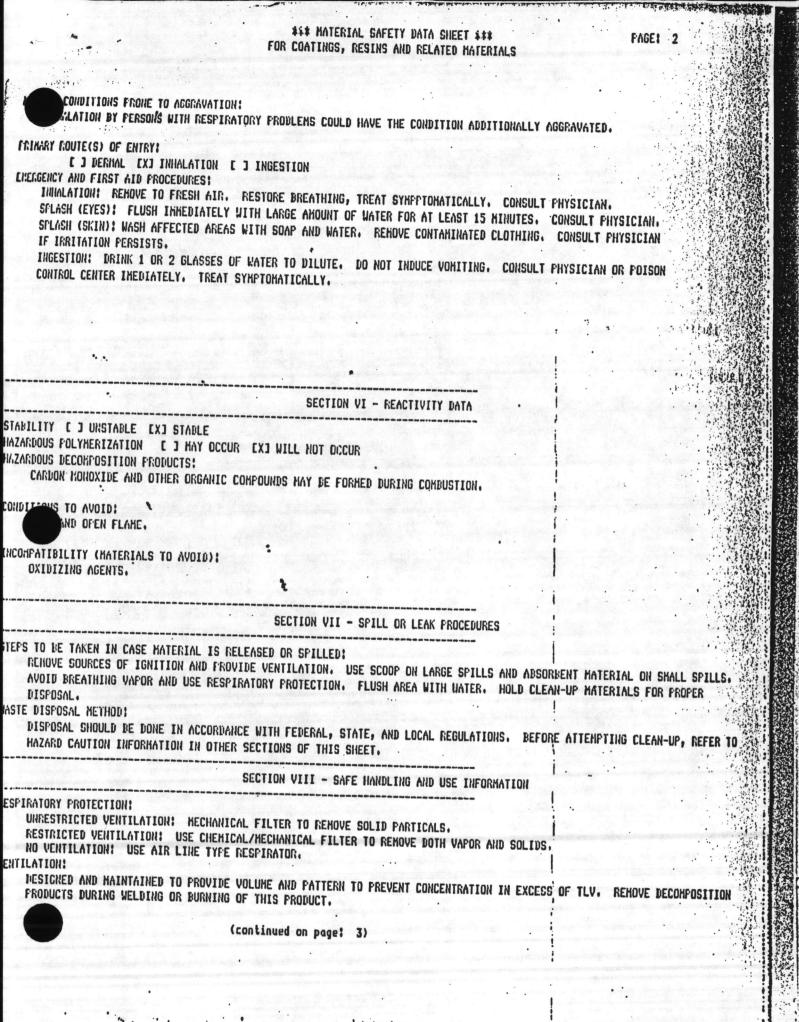


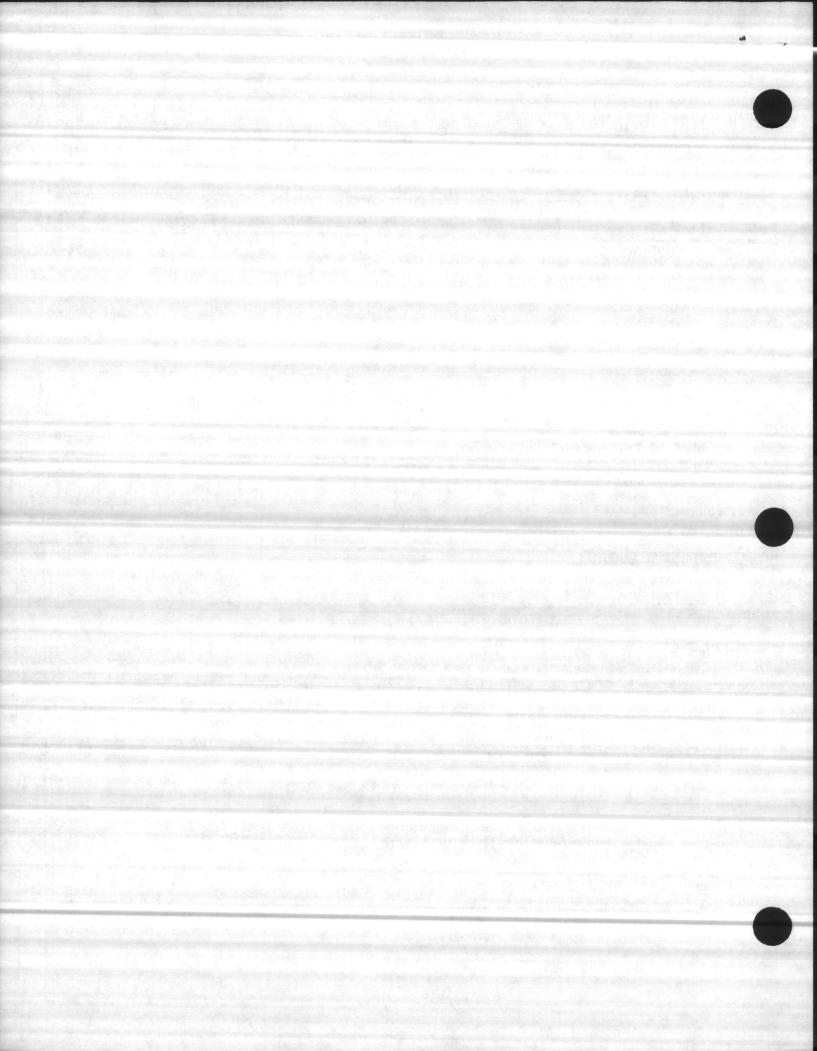
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ref: FBH71	*** MATERIAL SAFETY DATA SHEET *** FOR COATINGS, RESINS AND RELATED MATERIALS	FAGE: 1
HARUFACTURER'S HAME: C.H. ATHEY FAINT CO STREET ADDRESS : 1809 BAYARD STREET CITY, STATE & ZIP : BALTINORE, MD 21230 EVENTY FHONE # : (301) 727-3823 IN FHOME #: (301) 727-3822	THE WOT HUMEN IF DELLT	k #17038
	SECTION II - HAZARDOUS INGREDIENTS	
MINERAL SPIRITS 49.69 100.000 HI-FLASH NAFHTHA 3.88 25.000 CARBON BLACK 3.41 .000 3 LEL expressed in percent; Vapor expressed	WAPDR CAS NUMBER MG/M FRESS LEL 000 .000 .10 1.00 B052-41-3 .000 10.30* 1.00 64742-95-6 .500 .00 .000 1333-86-4	
	SECTION III - PHYSICAL DATA	
FOILING RANGE: 317.00 to 388.00 deg. VAFOR DENSITY: [X] HEAVIER EVAFORATION RATE: [] FASTER	F. Z VOLATILE VOLUME: 60.50Z I J LIGHTER THAN AIR IXJ SLOWER THAN ETHER WT/GAL: 7.63 1bs.	
	SECTION TU - FIRE AND EVELOPTON MARTIN	
SPECIAL FRECAUTIONS, SPECIAL FIREFIGHTING PROCEDURES; WATER SPRAY MAY BE INEFFECTIVE, IF & WATER MAY BE USED TO COOL CONTAINED	R FOG,; UISHER LATE FRUM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLA XFOSED TO EXTREME HEAT, APPLICATION TO HOT SURFACES REQUI 2 WATER IS USED, FOG NOZZLES ARE PREFERABLE, TO PREVENT PRESSURE BUILD-UP AND EXPLOSION, ING SELF CONTAINED DREATHING APPARATUS FOR PROTECTION.	ME. RES
HEALTH STUDIES HAVE SHOWN THAT MANY OF	SECTION V - HEALTH HAZARDS ATORY TRACT OR ACUTE NERVOUS SYSTEM DEPRESSION CHARACTERIZ G,CONFUSION, OR COMA. ON OR SENSITIZER. ETROLEUM HYDROCARBONS POSE FOTENTIAL HEALTH RISKS WHICH HA XPOSURE TO LIQUIDS AND VAPORS OF PETROLEUM PRODUCTS SHOULD	
		DE MINIMIZED.
(cor	ntinued on page: 2)	
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****1** MATERIAL SAFETY DATA SHEET ******* FOR COATINGS, RESINS AND RELATED MATERIALS

PAGE

FROTECTIVE CLOVES!

USE NEOFRENE OR OTHER INPERVIOUS TYPE GLOVES.

TROTECTION: " USE GOGGLES OR SIDE SHIELD SPECTACLES.

OTHER PROTECTIVE EQUIPHENT:

HAVE EYE WASH STATION AND SAFETY SHOWERS AVAILABLE

HYGIENIC PRACTICES:

WASH HANDS BEFORE EATING OR USING WASHROOM. SMOKE IN DESIGNATED AREAS ONLY.

SECTION IX - SPECIAL PRECAUTIONS

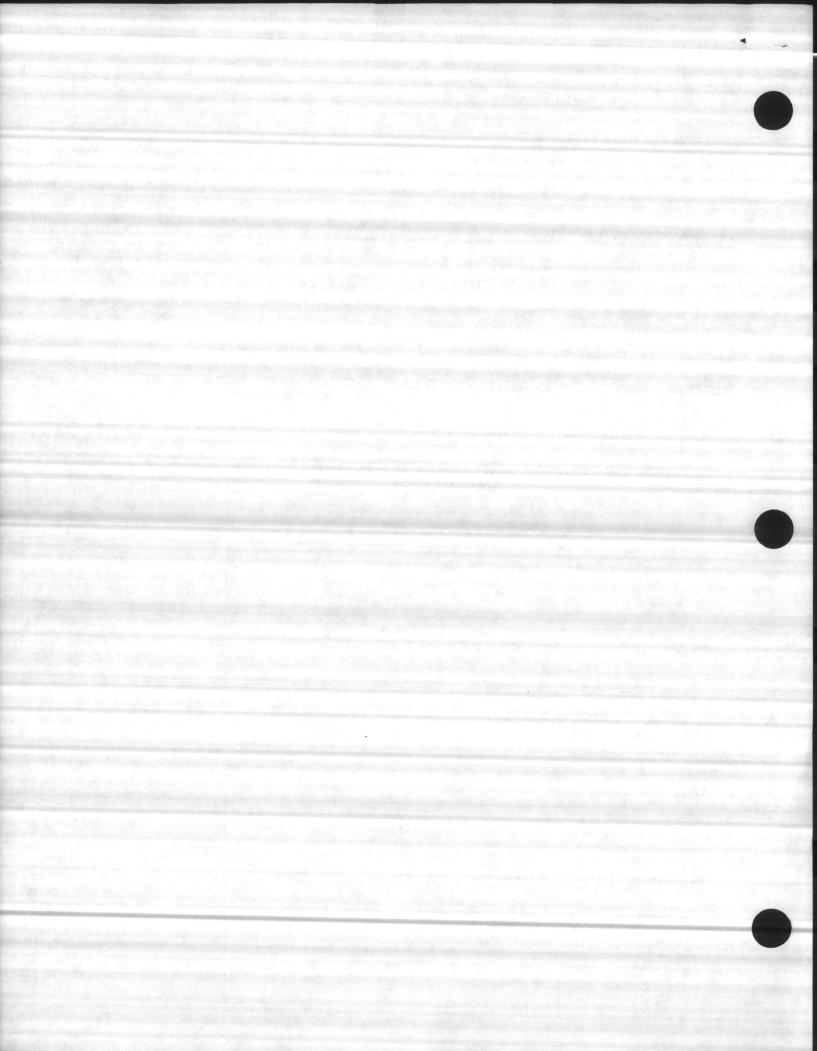
FRECAUTIONS FOR HANDLING AND STORAGE!

STURE AWAY FRON HEAT, SPARKS, AND OPEN FLAME IN WELL VENTILATED AREA. DO NOT STORE ADOVE 100 DEG. F. KEEP CLASSE TIGHT AND CONTAINER UPRIGHT TO PREVENT LEAKAGE. DO NOT PUNCTURE, DRAG, OR SLIDE CONTAINERS. OTHER FRECAUTIONS;

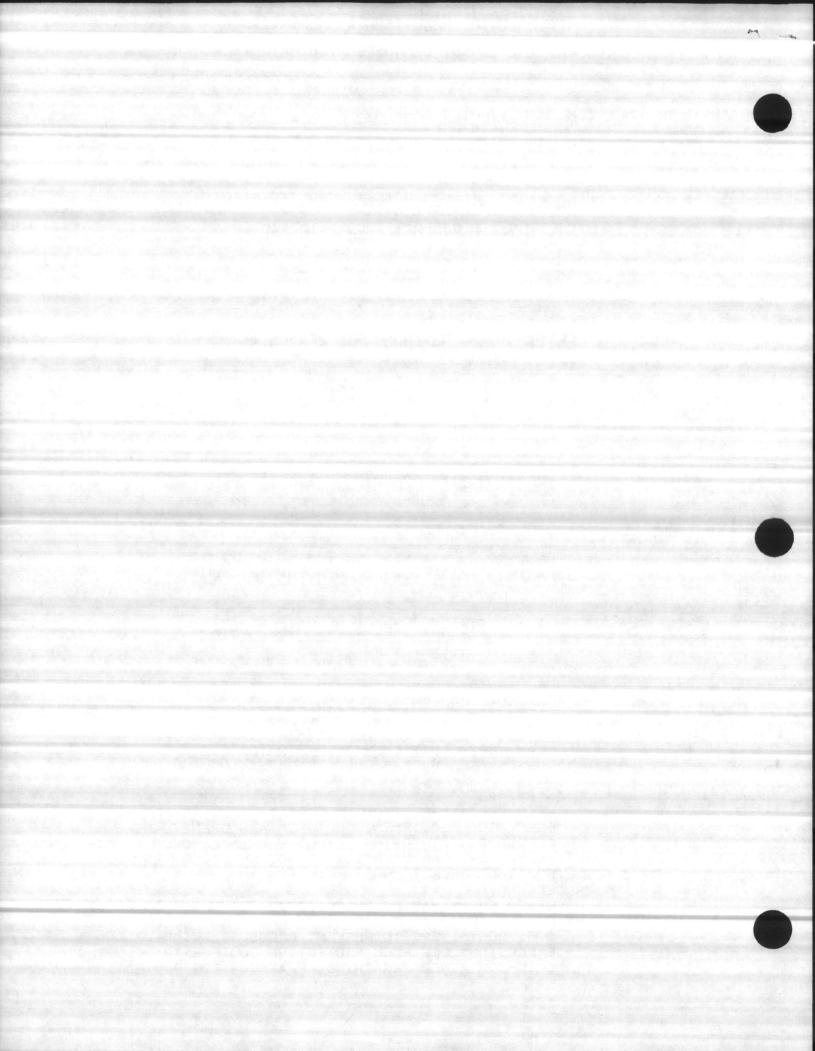
NO NUT GET IN EYES. AVOID SKIN CONTACT. FREVENT PROLONGED OR REPEATED BREATHING OF VAPOR OR SPRAY HIST. # DRIES SOLL BE GROUNDED WHEN FOURING. REGTRICT FREE-FALL OF LIQUID TO A FEW INCHES TO AVOID GENERATION OF STATIC CHARGE.







	*** MATERIAL SAFETY DATA SHEET *** PAGE: 1	
	FOR COATINGS, RESINS AND RELATED MATERIALS	
- SE: FB03766		
STATE & 71 GENCY PHONE	AME: C. M. ATHEY PAINT COMPANY 7 : 1807 BAYARD STREET 7 P : BALTIMORE, MD 21230 7 # : (301) 727-3823 7 # : (301) 727-3822 7 # : (301) 727-3822 0 # : (301) 727-3822 0 # : (301) 727-3822 0 # : (301) 727-3822 0	
	SECTION 1 - PRODUCT IDENTIFICATION	
RODUCT NUMBER RODUCT NAME RODUCT CLASS	FBJ3766 INDUST. ENM. SAFETY RED #11105 ALKYD GLOSS	
	SECTION II - HAZARDOUS INGREDIENTS	
HOREDIENT	TLV VAPOR % WGHT PPM MG/M PRESS LEL 48.45 100.000 .000 .10 1.00	
"FL expressed in	percent; Vapor expressed in mmHg	
	SECTION III - PHYSICAL DATA	
ING RANGE:	17.00 to 388.00 deg. F. % VOLATILE VOLUME: 60.5	6%
	[X] HEAVIER[] LIGHTER THAN AIR[] FASTER[X] SLOWER THAN ETHERWI/GAL:7.76 lbs.	
:	SECTION IV - FIRE AND EXPLOSION HAZARD DATA	.
LAMMABILITY CL DSHA	SSIFICATION: COMBUSTIBLE LIQUID -CLASS II FLASH POINT: 104.00 deg. F. DOT: COMBUSTIBLE LIQUID	
*XTINGUISHING M		
A Participation	FDAM CO2 DRY CHEMICAL WATER FOG USE ANY CLASS B APPROVED FIRE EXTINGUISHER	
UNUSUAL FIRE AND	EXPLOSION HAZARD:	
	KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT. ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAME. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EX- TREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS.	
SPECIAL FIREFIG	TING PROCEDURES:	
	WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CONTAINERS TO PREVENT PRESSURE BUILD-UP AND EXPLOSION. USE FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS FOR PROTECTION.	



*** MATERIAL SAFETY DATA SHEET *** PAGE:

FBJ3766

FOR COATINGS, RESINS AND RELATED MATERIALS

SECTION V - HEALTH HAZARDS FECTS OF OVEL EXPOSURE: INHALATION: IRRITATION OF THE RESPIRATORY TRACT OR ACUTE NERVOUS SYSTEM DEPRESSION CHARACTERIZED BY FOLLOWING STEPS; HEADACHE, DIZZINESS, STAGGERING, CONFUSION OR COMA. SKIN OR EYE CONTACT: PRIMARY IRRITATION OR SENSITIZER. HEALTH STUDIES HAVE SHOWN THAT MANY PETROLEUM HY-DROCARBONS POSE POTENTIAL HUMAN HEALTH RISKS WHICH MAY VARY FROM PERSON TO PERSON. AS A PRECAUTION, EXPOSURE TO LIQUIDS AND VAPORS OF PETROLEUM PRO-DUCTS SHOULD BE MINIMIZED. HEDICAL CONDITIONS PRONE TO AGGRAVATION: INHALATION BY PERSONS WITH RESPIRATORY PROBLEMS COULD HAVE THE CONDITION ADDITIONALLY AGGRAVATED. RIMARY ROUTE (S) OF ENTRY: [] D RMAL EXJ INHALATION [] INCESTION HERGENCY AND FIRST AID PROCEDURES: INHALATION: REMOVE TO FRESH AIR. RESTORE BREATH-ING. TREAT SYMPTOMATICALLY. CONSULT PHYSICIAN. SPLASH (EYES): FLUSH IMMEDIATELY WITH LARGE AMOUNT OF WATER FOR AT LEAST 15 MINUTES. CONSULT PHYSI-CIAN. SPLASH (SKIN): WASH AFFECTED AREAS WITH SDAP AND WATER. REMOVE CONTAMINATED CLOTHING. CONSULT PHYSICIAN IF IRRITATION PERSISTS. INGESTION: DRINK 1 OR 2 GLASSES OF WATER TO DILUTE. DO NOT INDUCE VOMITING. CONSULT PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY. SECTION VI - REACTIVITY DATA TABILITY E J 'HSTABLE EXJ STABLE WZARDOUS POLYMERIZATION E J MAY OCCUR EX3 WILL NOT OCCUR WZARDOUS DECOMPOSITION PRODUCTS:

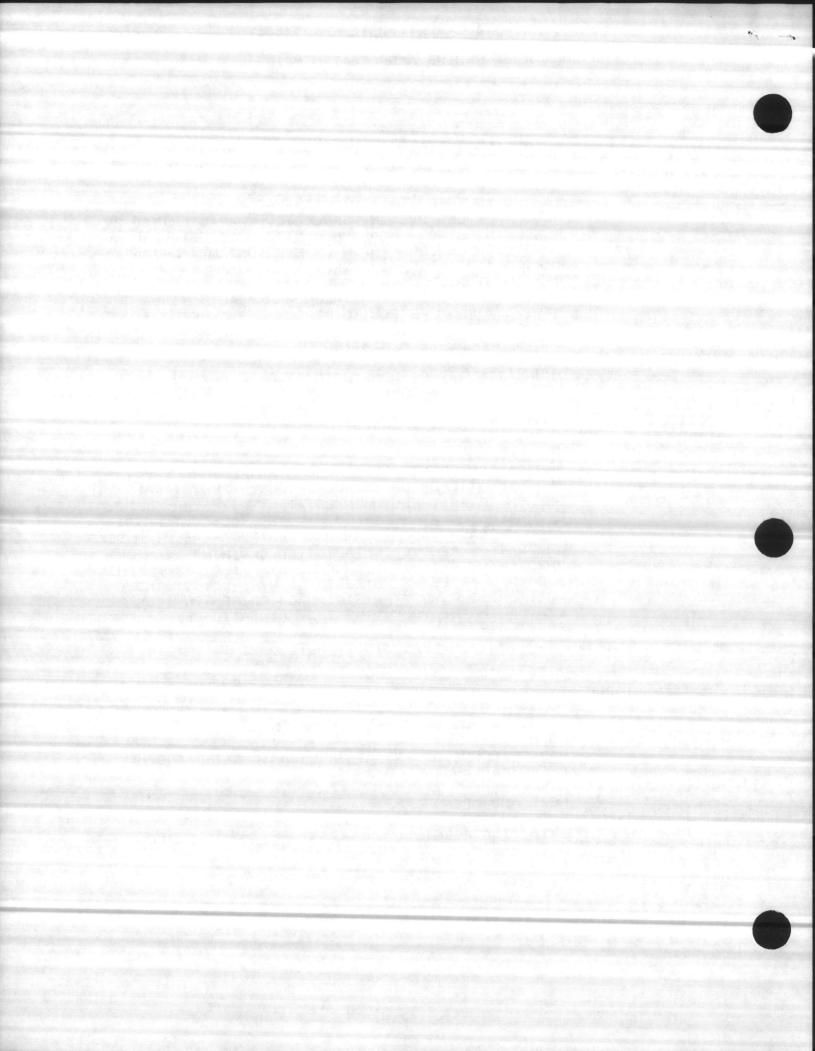
> CARBON MONOXIDE AND OTHER ORGANIC MATERIALS MAY BE FORMED DURING COMBUSTION.

UNDITIONS TO A" DID:

HEAT AND OPEN FLAME. NCOMPATIBILITY (MATERIALS TO AVOID): OXIDIZING AGENTS.



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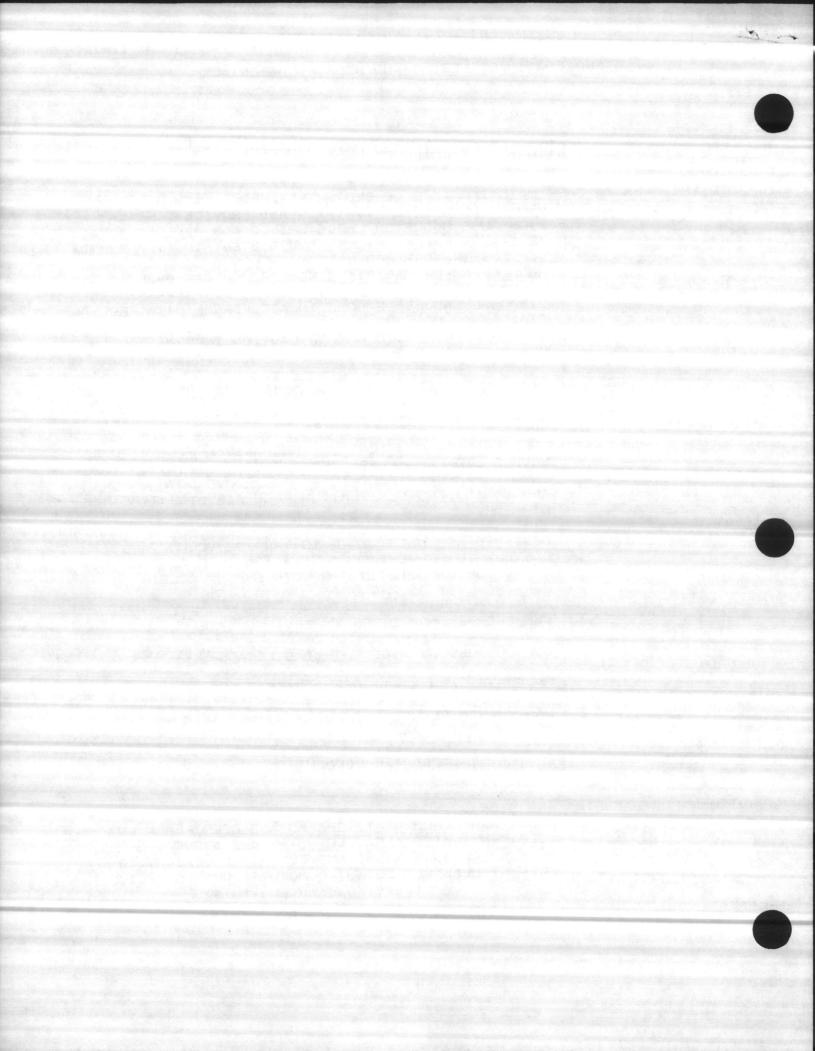
*** MATERIAL SAFETY DATA SHEET ***

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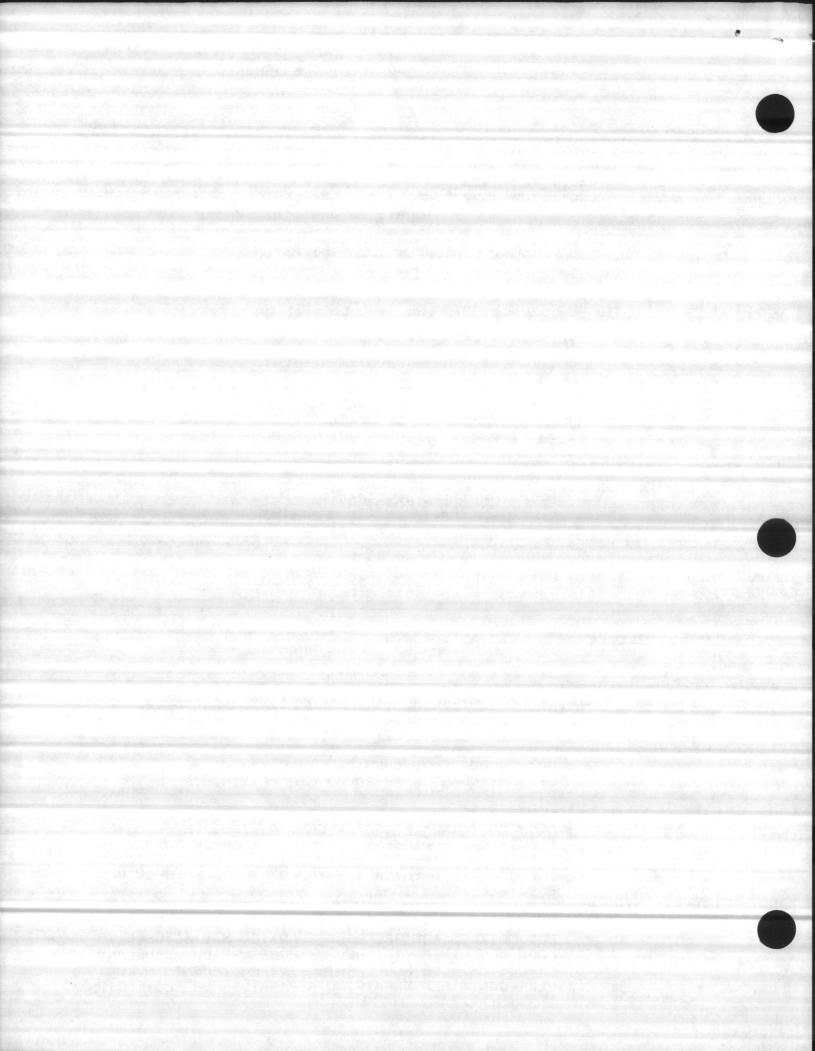
FOR COATINGS, RESINS AND RELATED MATERIALS

PAGE: 3

SE	CTION VII - SPILL OR LEAK PROCEDURES
STEPS TO BE TALEN IN CA	SE MATERIAL IS RELEASED OR SPILLED: REMOVE SOURCES OF IGNITION AND PROVIDE VENTILA- TION. USE SCOOP ON LARGE SPILLS AND ABSORBENT MA- TERIAL ON SMALL SPILLS. AVOID BREATHING VAPUR AND USE RESPIRATORY PROTECTION. FLUSH AREA WITH WATER. HOLD CLEAN-UP MATERIALS FOR PROPER DISPOSAL. DISPOSAL SHOULD BE DONE IN ACCORDANCE WITH FEDERAL STATE AND LOCAL REGULATIONS. BEFORE ATTEMPTING CLEAN-UP, REFER TO HAZARD CAUTION INFORMATION IN
SECTION	VIII - SAFE HANDLING AND USE INFORMATION
RESPIRATORY PUTTECTION:	
UNUILATION:	UNRESTRICTED VENTILATION: MECHANICAL FILTER TO RE- MOVE SOLID PARTICLES. RESTRICTED VENTILATION: USE CHEMICAL/MECHANICAL FILTER TO REMOVE BOTH VAPOR, AND SOLIDS. NO VENTILATION: USE AIR LINE TYPE RES- PIRATOR.
PROTECTIVE OLU ES:	DESIGNED AND MAINTAINED TO PROVIDE VOLUME AND PAITERN TO PREVENT CONCENTRATION IN EXCESS OF TLV. REMOVE DECOMPOSITION PRODUCTS DURING WELDING OR BURNING OF THIS PRODUCT.
EYE PROTECTION	USE NEOPRENE OR OTHER IMPERVIOUS TYPE GLOVES.
OTHER PROTECTIVE EQUIPME	USE GOGGLES OR SIDE SHIELD SPECTACLES.
TYGIENIC PRACT (CES)	HAVE EYE WASH STATION AND SAFETY SHOWERS AVAILABLE
	WASH HANDS BEFORE EATING OR USING WASHROOM. SMOKE IN DESIGNATED AREAS ONLY.
	SECTION IX - SPECIAL PRECAUTIONS
RECAUTIONS FOR HANDLING	AND STORAGE: STORE AWAY FROM HEAT, SPARKS AND OPEN FLAME IN WELL VENTILATED AREA. DO NOT STORE ABOVE 100 DEG. F. KEEP CLOSURE TIGHT AND CONTAINER UPRIGHT TO PREVENT LEAKAGE. DO NOT PUNCTURE, DRAG OK SLIDE (continued on page: 4)



	*** MATERIAL SAFETY DATA SHEET ***	PAGE: 1
FO	R COATINGS, RESINS AND RELATED MATERIALS	
ref: FZZ6361		
		12
S SET ADDRESS :	C.M. ATHEY PAINT COMPANY 1809 BAYARD STREET	(1)
CITY, STATE & ZIP :		 March 1, South 1, Strand Bridge Strand Bridge Strand Bridge
EMERGENCY PHONE # :		
INFORMATION PHONE #: DATE WRITTEN: 11/06/8		
	SECTION I - PRODUCT IDENTIFICATION	
	SECTION I - FRODUCT IDENTIFICATION	
PRODUCT NUMBER : FZZ		
	E-487 Oil Base High Gloss Med. Gray #16187 YD GLOSS	
and the second	SECTION II - HAZARDOUS INGREDIENTS	an an Balandar an taon an Anna an Air
INGREDIENT %		
	31.83 100.000 .000 .10 1.00	
LEL expressed in perc	ent; Vapor expressed in mmHg	
	SECTION III - PHYSICAL DATA	
ING RANGE: 317.00	to 388.00 deg. F. % VOLATILE	VDLUME: 51.37%
VAPOR DENSITY:	EXI HEAVIER E I LIGHTER THAN AIR	
EVAPORATION RATE:	C] FASTER [X] SLOWER THAN ETHER	
	WT/GAL:	9.36 lbs.
SEC	TION IV - FIRE AND EXPLOSION HAZARD DATA	
FLAMMABILITY CLASSIFI	CATION:	
OSHA: COMBU	STIBLE LIQUID -CLASS II FLASH POINT: 104.0 DOT: COMBUSTIBLE LIQUID	Ódeg. F.
EXTINGUISHING MEDIA:		
	FDAM CO2 DRY CHEMICAL WATER FOG USE ANY CLASS B APPROVED FIRE EXTINGUIS	HER
UNUSUAL FIRE AND EXPL	DSION HAZARD:	
	KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE	
· · · · · ·	ELECTRICAL EQUIPMENT, SPARKS, AND DPEN CLOSED CONTAINERS MAY EXPLODE WHEN EXPO	
	TREME HEAT. APPLICATION TO HOT SURFACES	
SPECIAL FIREFIGHTING	SPECIAL PRECAUTIONS.	
SPECIAL FIREFIGHTING	WATER SPRAY MAY BE INEFFECTIVE. IF WATE	R IS USED,
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(COOL CONTAINERS TO PREVENT PRESSURE BUI	
	EXPLOSION. USE FULL PROTECTIVE EQUIPMEN SELF-CONTAINED BREATHING APPARATUS FOR	
	SELF-CONTRINED BREATHING AFFARATUS FUR	TRUTEGITUN.

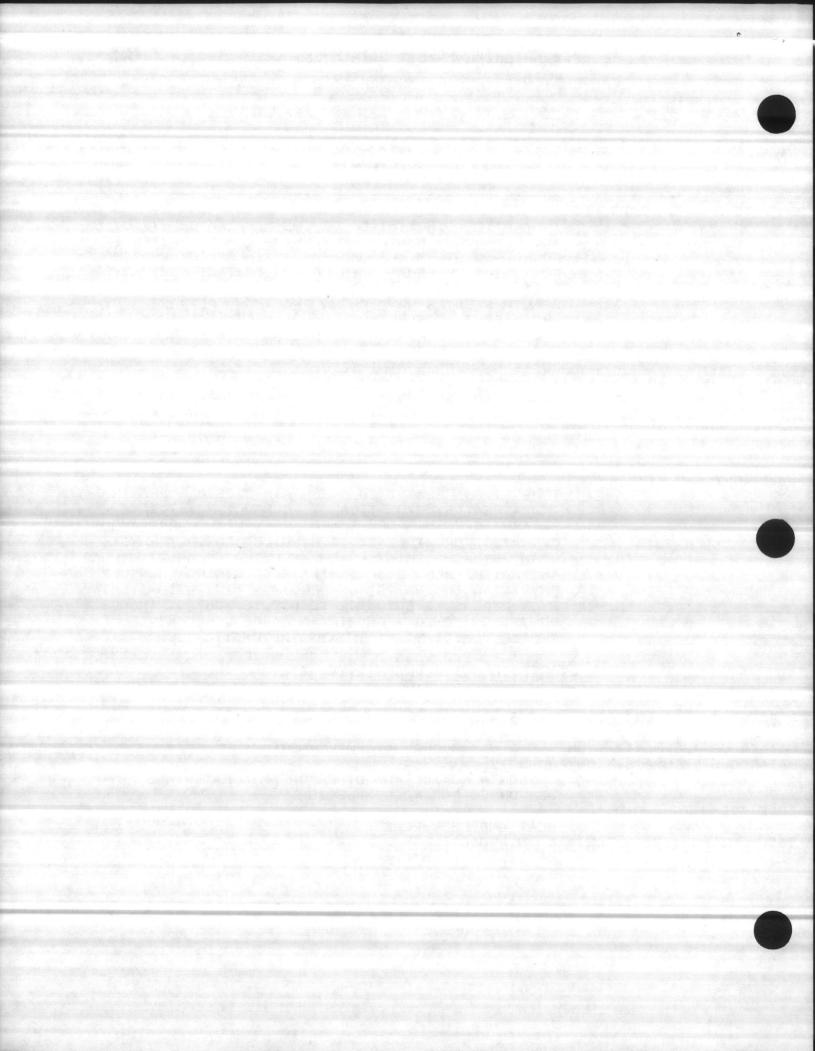


*** MATERIAL SAFETY DATA SHEET ***

PAGE: 2

FOR COATINGS, RESINS AND RELATED MATERIALS

FZZ6361 SECTION V - HEALTH HAZARDS EFFECTS OF OVER EXPOSURE INHALATION: IRRITATION OF THE RESPIRATORY TRACT OR ACUTE NERVOUS SYSTEM DEPRESSION CHARACTERIZED BY FOLLOWING STEPS; HEADACHE, DIZZINESS, STAGGERING, CONFUSION OR COMA. SKIN OR EYE CONTACT: PRIMARY IRRITATION OR SENSITIZER. HEALTH STUDIES HAVE SHOWN THAT MANY PETROLEUM HY-DROCARBONS POSE POTENTIAL HUMAN HEALTH RISKS WHICH MAY VARY FROM PERSON TO PERSON. AS A PRECAUTION, EXPOSURE TO LIQUIDS AND VAPORS OF PETROLEUM PRO-DUCTS SHOULD BE MINIMIZED. MEDICAL CONDITIONS PRONE TO AGGRAVATION: INHALATION BY PERSONS WITH RESPIRATORY PROBLEMS COULD HAVE THE CONDITION ADDITIONALLY AGGRAVATED. PRIMARY ROUTE(S) OF ENTRY: [] DERMAL. [X] INHALATION [] INGESTION EMERGENCY AND FIRST AID PROCEDURES: INHALATION: REMOVE TO FRESH AIR. RESTORE BREATH-INC. TREAT SYMPTOMATICALLY. CONSULT PHYSICIAN. SPLASH (EYES): FLUSH IMMEDIATELY WITH LARGE AMOUNT OF WATER FOR AT LEAST 15 MINUTES. CONSULT PHYSI-CIAN. SPLASH (SKIN): WASH AFFECTED AREAS WITH SDAP AND WATER. REMOVE CONTAMINATED CLOTHING. CONSULT PHYSICIAN IF IRRITATION PERSISTS. INGESTION: DRINK 1 OR 2 GLASSES OF WATER TO DILUTE. DO NOT INDUCE VOMITING. CONSULT PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. TREAT SYMPTOMATICALLY. SECTION VI - REACTIVITY DATA STABILITY [] UNSTABLE [X] STABLE HAZARDOUS POLYMERIZATION [] MAY OCCUR [X] WILL NOT OCCUR HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE AND OTHER ORGANIC MATERIALS MAY BE FORMED DURING COMBUSTION. CONDITIONS TO AVOID: HEAT AND OPEN FLAME. INCOMPATIBILITY (MATERIALS TO AVOID): OXIDIZING AGENTS.



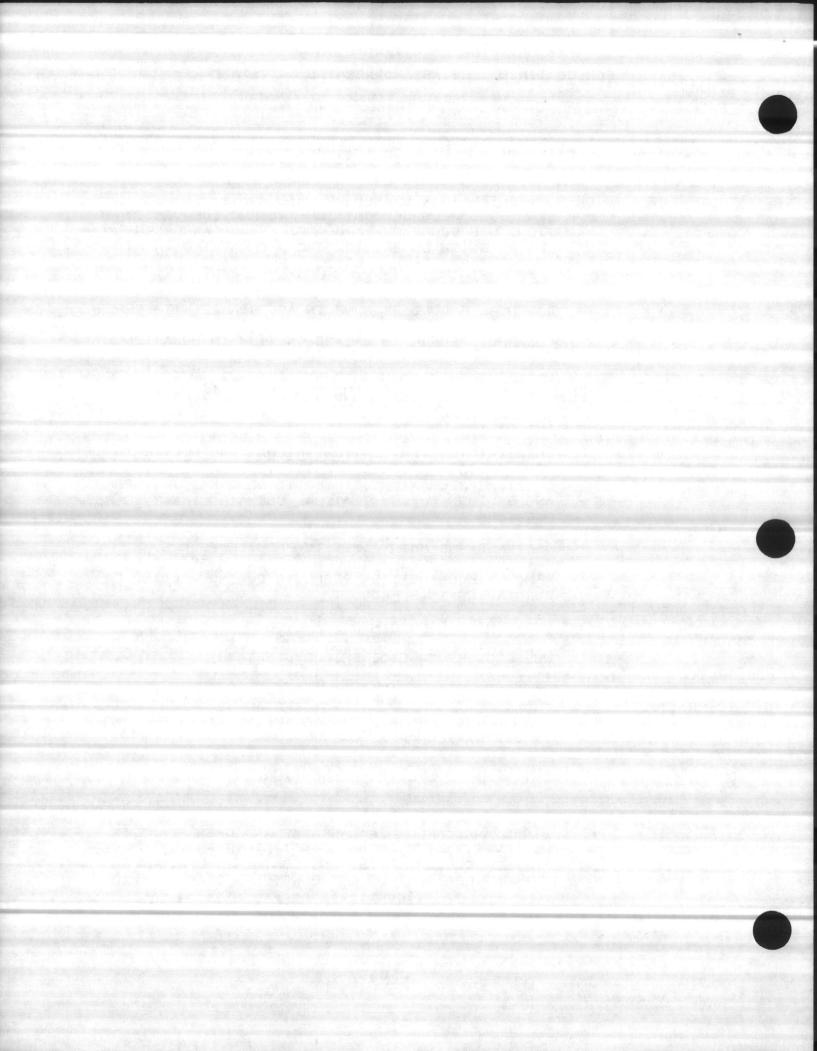
*** MATERIAL SAFETY DATA SHEET ***

PAGE: 3

FOR COATINGS, RESINS AND RELATED MATERIALS

FZZ6361

SEC.	TION VII - SPILL OR LEAK PROCEDURES
	E MATERIAL IS RELEASED OR SPILLED: REMOVE SOURCES OF IGNITION AND PROVIDE VENTILA- TION. USE SCOOP ON LARGE SPILLS AND ABSORBENT MA- TERIAL ON SMALL SPILLS. AVOID BREATHING VAPOR AND USE RESPIRATORY PROTECTION. FLUSH AREA WITH WATER. HOLD CLEAN-UP MATERIALS FOR PROPER DISPOSAL.
WASTE DISPOSAL METHOD:	DISPOSAL SHOULD BE DONE IN ACCORDANCE WITH FEDERAL STATE AND LOCAL REGULATIONS. BEFORE ATTEMPTING CLEAN-UP, REFER TO HAZARD CAUTION INFORMATION IN OTHER SECTIONS OF THE SHEET.
SECTION	VIII - SAFE HANDLING AND USE INFORMATION
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PROTECTIVE GLOVES: EYE PROTECTION:	USE NEOPRENE OR OTHER IMPERVIOUS TYPE GLOVES.
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*** MATERIAL SAFETY DATA SHEET ***

PAGE: 4

FOR COATINGS, RESINS AND RELATED MATERIALS

FZZ6361

SECTION IX - SPECIAL PRECAUTIONS continued

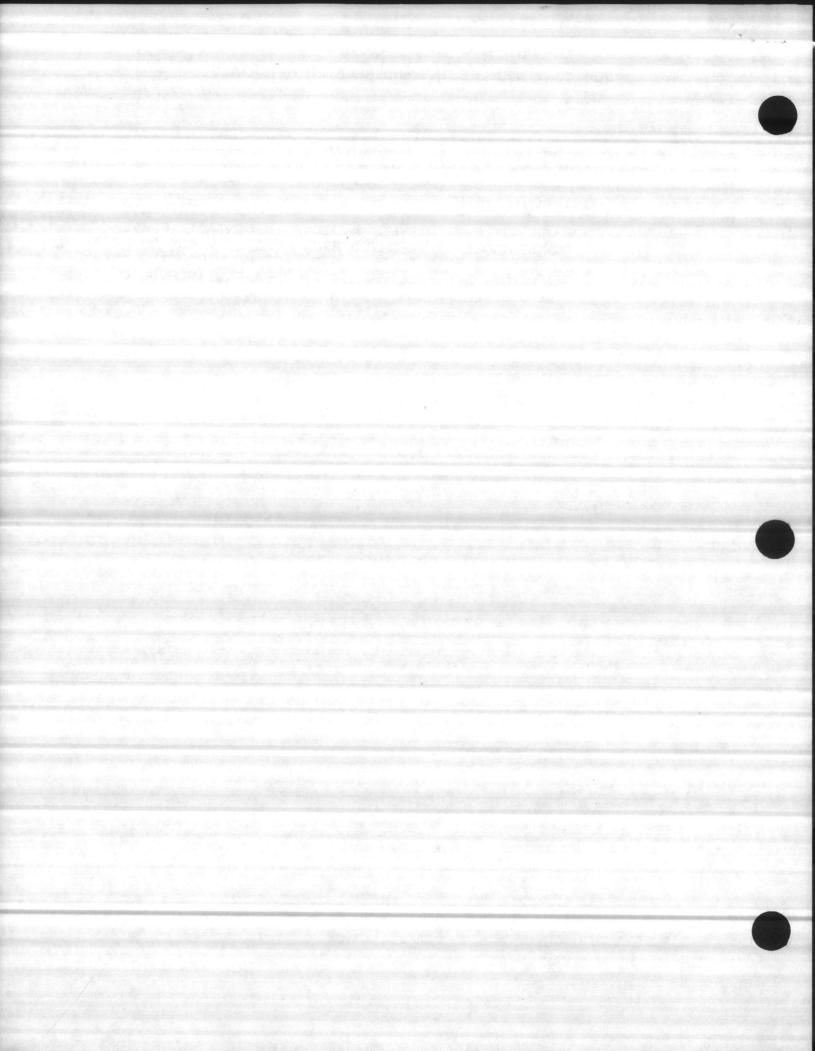
OTHER PRECAUTIONS:

CONTAINERS.

DO NOT GET IN EYES. AVOID SKIN CONTACT. PREVENT PROLONGED OR REPEATED BREATHING OF VAPOR OR SPRAY MIST. DRUMS SHOULD BE GROUNDED WHEN POURING. RE-STRICT FREE FALL OF LIQUID TO A FEW INCHES TO AVOID GENERATION OF STATIC CHARGE.

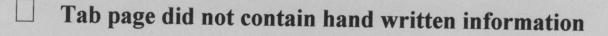






DESCRIPTION:

Sodium Azide



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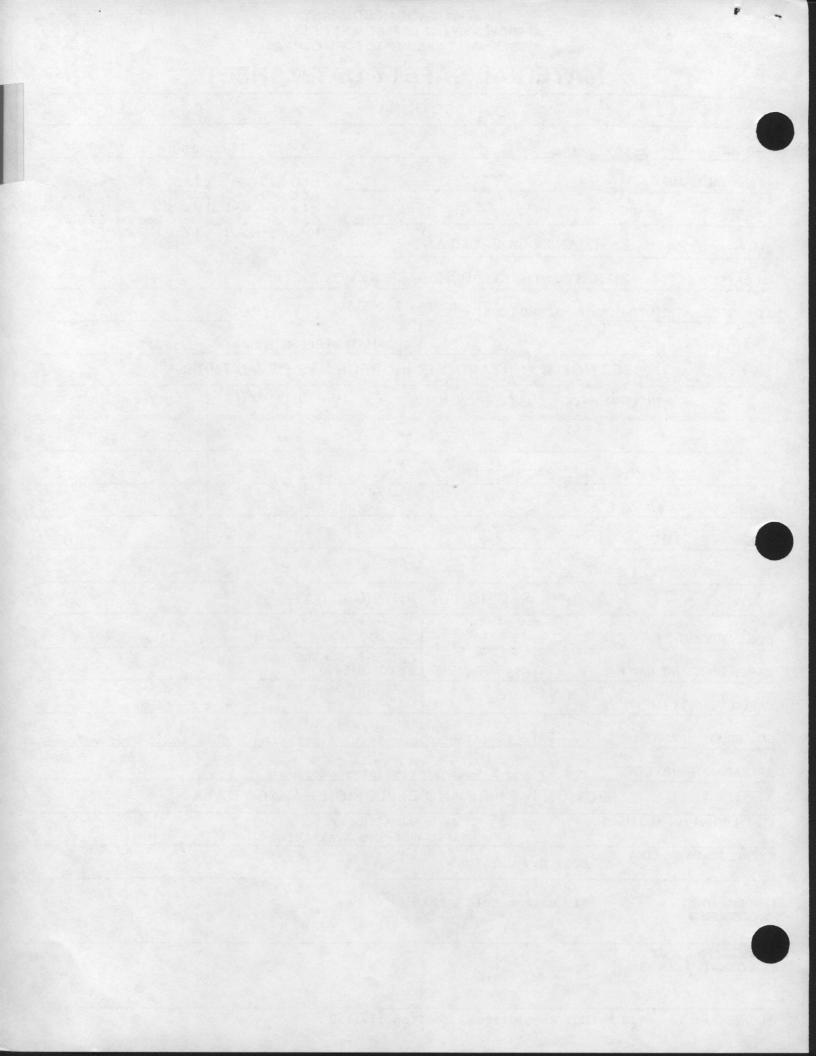


EASTMAN KODAK COMPANY APPROVED BY U.S. DEPARTMENT OF LABOR

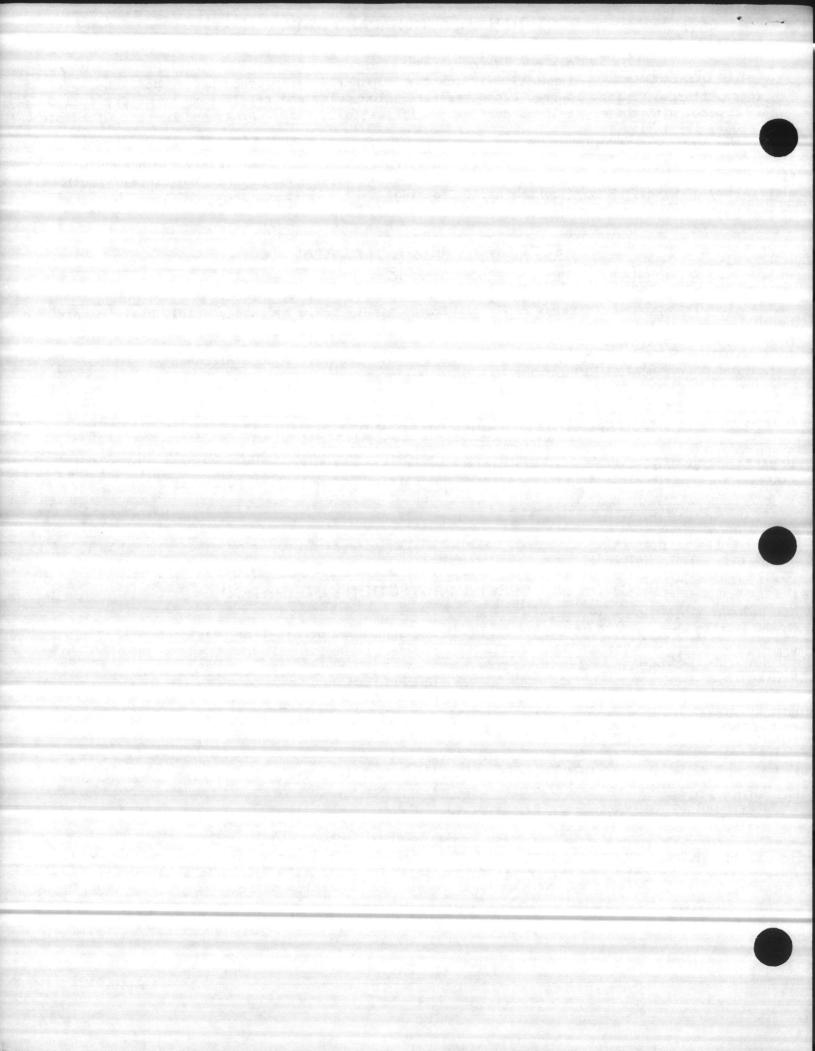
6

APPROVED BY U.S	KODAK COMPAN S. DEPARTMENT OF MILAR" TO FORM (FLABOR	Kodak	
2352 MATERIAL SA	FETY DAT	A SHEET	*	
	TION I	<u></u>		
PRODUCT NAME Sodium Aside		SIZE	100 g & 500 g	
CHEMICAL NAME Sodium Anide			2352	
FORMULA NaN3			9.900	
MANUFACTURER EASTMAN KODAK COMPA	NY	PHONE NU .:	(716) 722-5151	
ADDRESS 343 STATE STREET, ROCHE	ESTER, NEW YO	RK 14650		
FOR INFORMATION ON HEALTH HAZARDS CALL (7	16) 722-5151			
	INFORMATION	EFFECTIVE AS OF	5/23/79	
		%	TLV (Units)	
PRINCIPAL HAZARDOUS COMPONENT	(3)	70		
and the second s			<u> </u>	
 Carlos and a second s Second second se Second second second Second second sec				
			·	
SECTION II	I PHYSICAL I	DATA		
BOILING POINT (°F) Decomposes		/ITY (H2O=1) 1.8	Maria al contentando po	
VAPOR PRESSURE (mm Hg) Negligible	PERCENT VOLA			
VAPOR DENSITY (AIR=1) 2.2		EVAPORATION RATE (=1) Not Applicable		
			and the second	
			ly toxic hydrazoic aci	
APPEARANCE AND ODOR Colorless, hexagona SECTION IV FIRE AN			ΓΔ	
	FLAMMABLE			
	LIMITS Not Ava:	ilable Let	Uel	
SPECIAL FIRE-FIGHTING Air mask should be PROCEDURES	worn	· · ·		
EXPLOSION HAZARDS None				
	·	1		

*Nonflammable solid by DOT Regulations, Section 173.150



		000000000000000000000000000000000000000	SECTION	V HEALTH HAZ	ARD DATA	
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SOF	and the second se	POSURE		(ACGIH, 1978)		
iness,	blurre	d vision,	lowered bl	ood pressure, slo	w pulse and resp:	ce severe headache, iratory tract irritation blonged contact with moi
cause	<u>s irrit</u>	ation. ST-AID PROC	and the second second			
INHALATION	: Remo	ve to fresh	hjair. Ge	t medical attenti	on. EYES: Immed	liately flush eyes with
plenty of with plenty	water for y of wa	or at least	t 15 minut ve contamin	es and get medica nated clothing.	l attention. SK	IN: Immediately flush
			SECTIO	N VI REACTIVIT	Y DATA	
STABILITY	· Speckar	UNSTABLE	x	CONDITIONS TO AN	/OID	
		STABLE		High temperatu	res, strong impac	t ·
INCOMPATIB (Materials to a	ILITY S	trong oxidi	zers, acid	<pre>ds (liberates hig , mercury, etc.),</pre>	hly toxic hudrans	bic acid), heavy metals
HAZAHDOUS	15 to 1.15	A	****			
DECOMPOSIT	FION PRC	DUCTS	ermal deco	omposition or bur	ning may produce	nitrogen and sodium
TIAZANDOUS	Will No	ot Occur	JULIIONS I	O AVOID		
	<u>x</u>			SPILL OR LEAK		
STEDS TO DE	TAVENC		******	***************************************	***************************************	Parties of the states of a series of the states of the sta
STE DISPO	DSAL MET	THOD	clothing,	make up small pag		r other flammable maters
Merate.	State	and local	laws take	precedence.		•
RESPIRATORY				CIAL PROTECTI	ON INFORMATIC	ON
(Specify Type)	+ An'an	fea bevord	F-containe	d breathing appar	atus or air-line	Montinaton
VENTIL ATION	LO LO	CAL EXHAUS	TANGANY	es "	SPECIAL THE NO	respirator
	ME	CHANICAL (general) · Y	es	OTHER NO	a and a second
PROTECTIVE			• • • • •	EYE PROT		
		Yes		Ye		
	inte i Airde	and an and a support of the second seco	and the second sec	event skin contac	s en etc i chiquineare e co I t	n in standing of the standard department
		SI		SPECIAL PRE	CAUTIONS	
PRECAUTIONS TAKEN IN HAN AND STORING	DLING	Do not	t store ne	ar acids or in me	tal containers.	2
THER PRECA	UTIONS	Wash tho:	coughly af	ter handling. Do	not inhale hvdr.	azoic acid vapors.
		Effects o	of overexpo	osure are similar	to sodium azide	C.
	alente de la composition de la composit Composition de la composition de la comp					
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and the second state of the second					-	
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DESCRIPTION:

Potassium Sodium



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POTASSIUM SODIUM TARTRATE

Material Safety Data Sheet

Mallinckrodt, Inc. Emergency Telephone No. Science Products Division 314-982-5000 P. O. Box M Paris, Kentucky 40361

Effective Date: February 25, 1985

Product Identification:

Synonyma:

Rochelle Salt; Sodium Potassium Tartrate

CAS Number: 304-59-6 (Anhydrous) Molecular Weight: 282.23

Chemical Formula: KNaC4H406.4H20

Evaporation Rate: No information found.

Hazardous Ingredients: Not Applicable

PRECAUTIONARY INFORMATION

As part of good industrial and personal hygiene and safety procedures, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing. See Section 5.

DOT Hazard Class: Not Regulated.

Physical Data

SECTION 1

Appearance: Colorless, transparent crystals or white powder

Odor: Odorless

Solubility: Soluble in water.

Boiling Point: Begins to decompose Vapor Density: No information found. 8 220°C (428°F)

Melting Point: 70-80°C (158-176°F) Vapor Pressure: No information found.

Relative Density: 1.77

Fire and Explosion Information

Fire:

Explosion:

Fire Extinguishing Media:

Special Information:

Reactivity Data

Stability:

Hazardous Decomposition Products:

Hazardous Polymerization:

Incompatibilities:

Leak/Spill Disposal Information SECTION 4

- Ventilate area of leak or spill. . Cleanup personnel may require Spills: respiratory protection from dust. Sweep up material and containerize for reclamation or disposal. Wash residue to sever with water.
- Disposal: Whatever cannot be saved for reclamation may be disposed as dry water soluble waste in an approved waste disposal facility. Alternatively, waste may be sewered if dissolved in sufficient amounts of water to meet any existing water quality criteria.

Ensure compliance with local, state and federal regulations.



SECTION 2

As with most organic solids fire is possible at elevated temperatures or by contact with an ignition source.

Finely divided particles dispersed with air in sufficient concentrations may generate an explosive mixture if an ignition source is present.

Water spray, dry powder, Carbon Dioxide, alcohol foam.

Wear full protective clothing and NIOSH approved self-contained breathing apparatus, full facepiece operated in the pressure demand or other positive pressure mode.

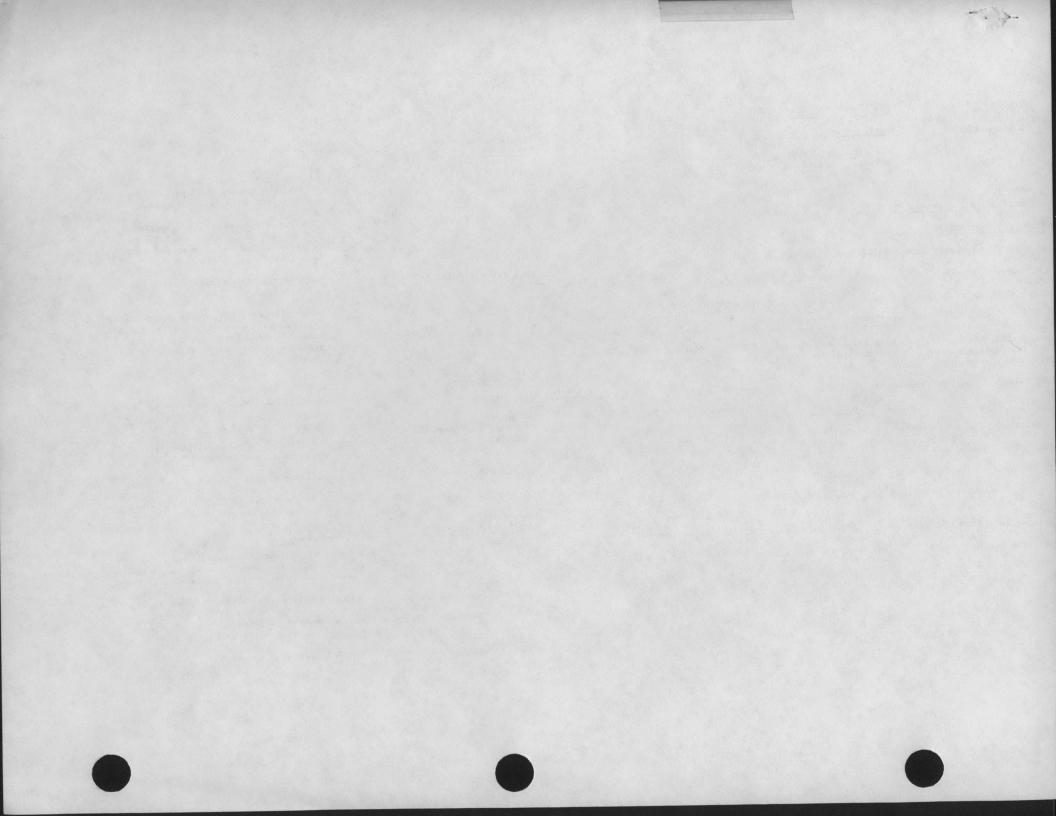
SECTION 3

Stable under normal condition of storage and use.

When heated to decomposition, it emits acrid smoke and fumes.

Will not occur.

Acids, Calcium or Lead Salts, Silver Nitrate, Magnesium Sulfate.



Ith Hazard Information. Exposure/Health Effects

Inhalation:

Ingestion:

Skin Contact:

Eye Contact:

Chronic Exposure:

Aggravation of Pre-existing Conditions:

FIRST AID Inhalation:

Ingestion:

Skin Exposure:

Eye Exposure:

Toxicity Data: (RTECS, 1982)

No information found.

-3-SECTION 5

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Sore throat, coughing, shortness of breath are symptoms of over-exposure. The substance may irritate the respiratory LEACE.

May cause sore throat, abdominal pain. Relatively large doses (2-4 gm in adults) can have cathartic effects.

May cause minor skin irritation with pain and discoloration.

May cause eye irritation with redness, pain.

No information found.

Persons with pre-existing skin disorders, eye problems, or impaired respiratory function may be more susceptible to the effects of this substance.

Remove to fresh air. Get medical help for any breathing difficulty.

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Wash exposed area with soap and water. Get medical advice if irritation develops.

Wash thoroughly with running water. Get medical advice if irritation develops.

Occupational Control Measures SECTION 6 Airborne Exposure Limit: None established.

Ventilation System:

-4-

In general, dilution ventilation is a satisfactory health hazard control for Potassium Sodium Tartrate. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

For conditions of use where exposure to Potassium Sodium Tartrate dust is apparent, a dust respirator may be worn. For emergencies, a self-contained breathing apparatus may be necessary.

Skin Protection:

Personal Respirators:

(NIOSH Approved)

Eye Protection:

Use chemical safety goggles. Contact lenses should not be worn when working with this material.

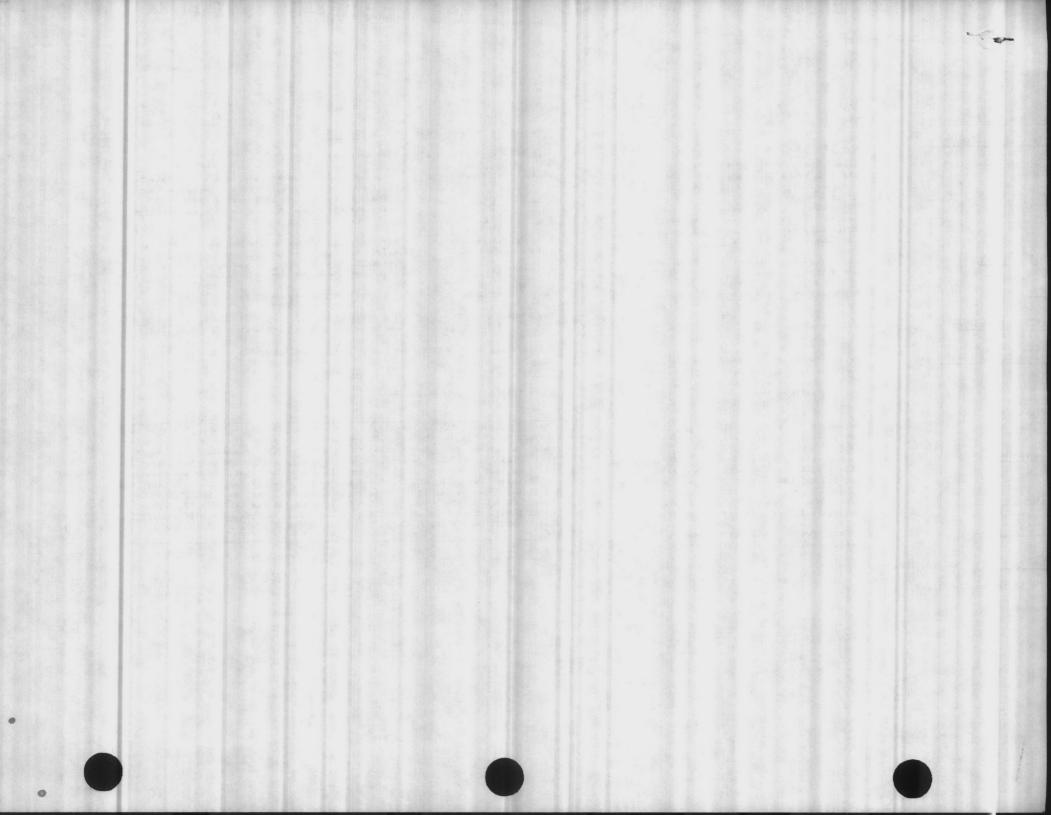
Gloves, lab coat, apron or coveralls.

Maintain eye wash fountain and quick drench facilities in work area.

Storage Information SECTION 7

Store in a cool, dry place.

The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, Mallinckrodt, Inc. makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose. Accordingly, Hallinckrodt, Inc. will not be responsible for damages of any kind resulting from the use of or reliance upon such information. NO REPRESENTA-TIONS, OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR TO THE PRODUCT TO WHICH THE INFORMATION REFERS.



DESCRIPTION:

Nickel Lubricant

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MATERIAL SAFETY DATA SHEET

Emergency Tel. Number (203) 278-1280

I. PRODUCT IDENTIFICATION

Product Name: Nickel Anti-Seize Lubricant

Item No.: 80755

Product Type: Lubricant

Part No.: 80755

II. COMPOSITION

Ingredients	% by Wt.	Hazard TLV = 5 mg/m_3^3 (mist)
Mineral Oil	50-55	$TLV = 5 mg/m_2^3$ (mist)
Nickel*	15-20	$TTV = 1 m \sigma/m^2$
Graphite**	10-15	$TLV = 10 \text{ mg/m}_{2}^{3} \text{ (dust)}$
Silicon Dioxide, amorphous***	5-10	$TLV = 10 \text{ mg/m}^3 \text{ (dust)}$
Petroleum Distillates	5-10	2
Aluminum	1-3	$TLV = 10 \text{ mg/m}_2^3$
Aluminum Oxide****	1-3	$TLV = 10 \text{ mg/m}^3$
Silicon Dioxide, amorphous*** Petroleum Distillates Aluminum	5-10 5-10 1-3	$TLV = 10 \text{ mg/m}^3 \text{ (dust)}$ $TLV = 10 \text{ mg/m}^3 \text{ (dust)}$ $TLV = 10 \text{ mg/m}^3 \text{ (dust)}$ $TLV = 10 \text{ mg/m}^3$ $TLV = 10 \text{ mg/m}^3$

*<u>Nickel</u> has been shown to cause tumors in experimental animals on administration by a number of different routes. It is also reported to produce adverse reproductive effects on high dose ingestion.

**Graphite has been shown to cause adverse reproductive effects in experimental animals when injected beneath the skin.

***<u>Silicon dioxide</u> dust amorphous has been shown to cause adverse pulmonary effects on inhalation.

****<u>Aluminum Oxide</u> has been shown to cause tumors in experimental animals when implanted beneath the skin.

It is our best technical judgment that, with proper precautions, normal use of this product poses no such hazards. These statements are present only to comply with OSHA regulations.

III. CHEMICAL AND PHYSICAL PROPERTIES

Vapor Pressure: < 5 mm @ 70°F	Specific Gravity: 1.2
Vapor Density: Unknown	Boiling Point: >300 ^O F
Solubility in Water: Nil	pH: DNA
Appearance: Grey Paste	Odor: None

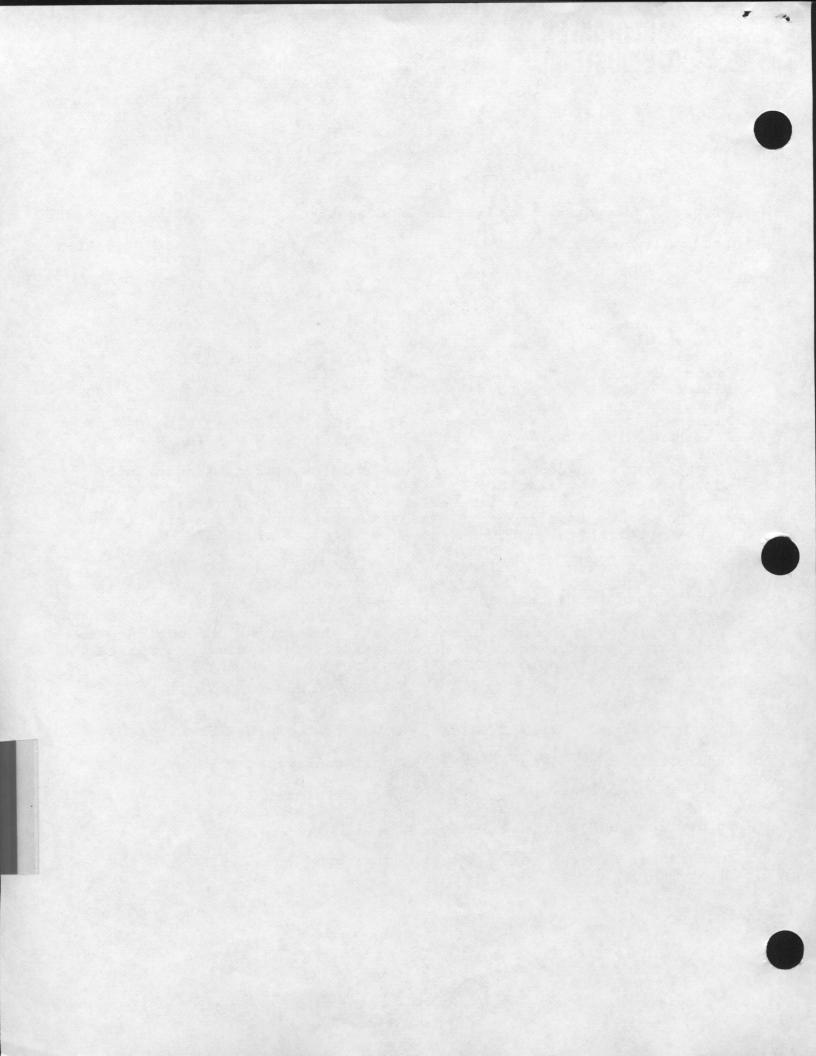
Page 1 of 3



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PERMATEX INDUSTRIAL CORPORATION • 30 Tower Lane • Avon Park South • Avon, CT 06001 • (203) 677-7727 • FAX (203) 674-8552

A Subsidiary of Loctite Corporation



NICKEL ANTI-SEIZE LUBRICANT

IV. TOXICITY AND HEALTH HAZARD DATA

Toxicity TLV: See Section II Est. Oral LD₅₀ >5000 mg/kg; Est. Dermal LD₅₀ >2000 mg/kg

Symptoms of Overexposure Overexposure to petroleum distillate can cause headache, nausea, dizziness.

EMERGENCY TREATMENT PROCEDURES Ingestion Induce vomiting. Obtain medical attention.

Inhalation Remove to fresh air. If symptoms persist, obtain medical attention.

Skin Contact Flush with water.

Eye Contact Flush with water. Obtain medical attention.

PERSONAL PROTECTION Eyes Safety glasses recommended

Skin None required

Ventilation May be desired for prolonged use in a confined area.

V. FLAMMABILITY AND EXPLOSIVE PROPERTIES

Flash Point: <200°F

Method: TCC

Explosive Limits (% by volume in air) Lower:DNA % Upper:DNA%

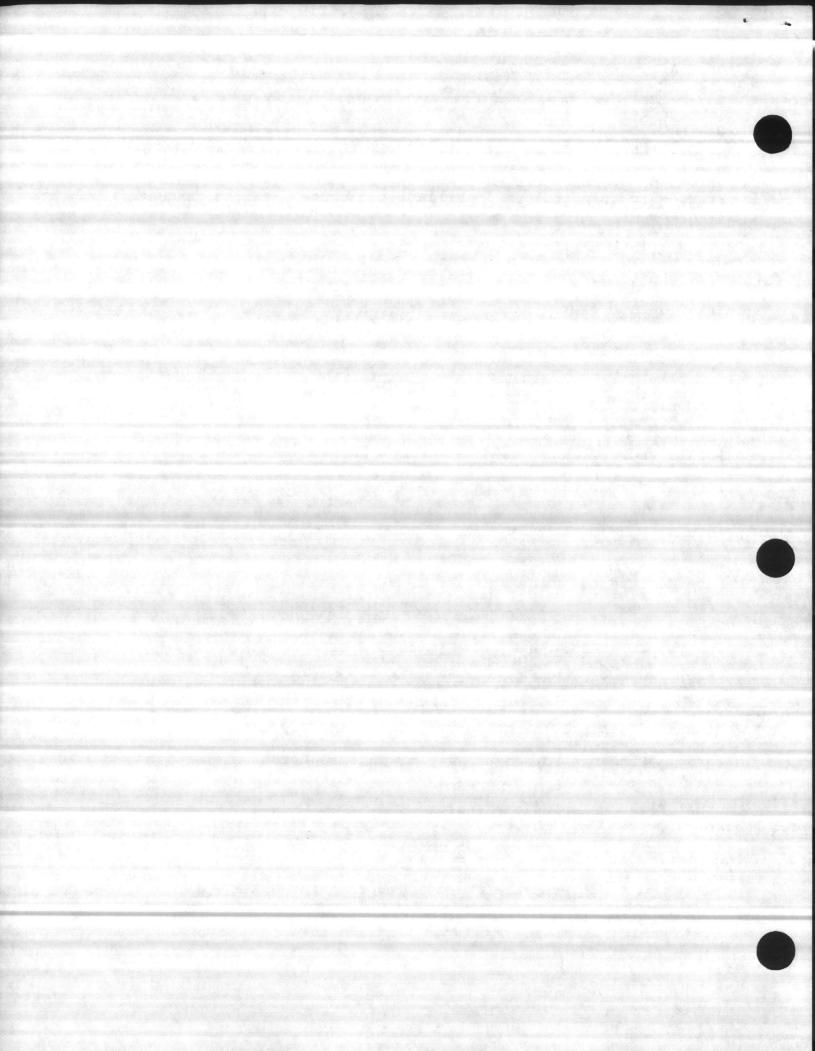
Recommended Extinguishing Agents: CO2, Foam, Dry Chemical

Hazardous Products Formed by Fire or Thermal Decomposition Metal vapors

Unusual Fire or Explosion Hazards None

Compressed Gases Name: None

Pressure at Room Temperature: DNA



NICKEL ANTI-SEIZE LUBRICANT

Page 3 of 3

VI. REACTIVITY DATA

 Stability
 X_Stable
 Unstable

 Hazardous Polymerization
 May Occur
 X Will Not Occur

 Hazardous Decomposition Products (non-thermal)
 None

 Incompatibility
 Incompatibility

None

VII. SPILL OR LEAK AND DISPOSAL PROCEDURES Steps to be taken in case of spill or leak: Soak up with an inert absorbent. Recommended methods of disposal: Landfill or incinerate following EPA and local regulations.

VIII. STORAGE AND HANDLING PROCEDURES

Storage: No special precautions.

Handling: No special precautions.

IX. SHIPPING REGULATIONS

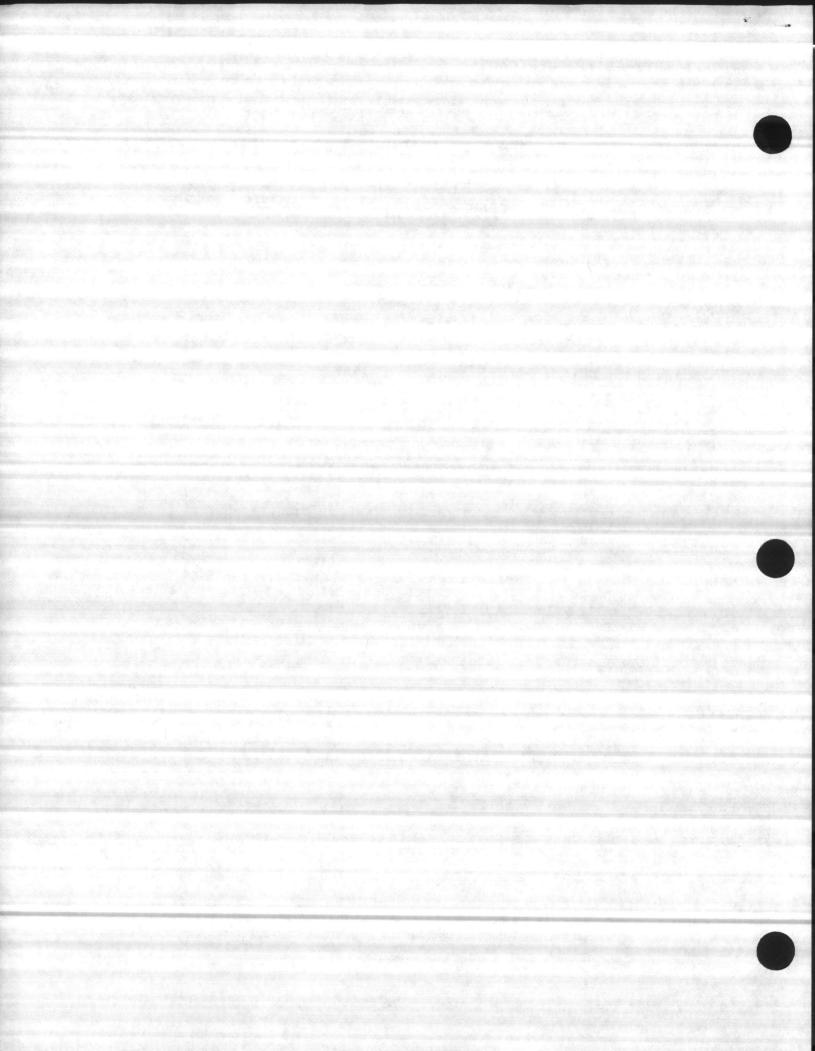
Type or Class DOT: Unrestricted; ORM-E[> 61b]

IATA: Unrestricted; ORM-E [> 61b] in US only

Proper Shipping Name DOT: ORM-E, liquid, n.o.s (Nickel mixture) [>6 lb]

IATA: ORM-E, liquid, n.o.s. (Nickel mixture[>61b]) in US only Prepared By Stephen Repetto Title: Reseach Chemist/Environmental Health & Safety

Date March 1, 1989





SARA TITLE III

NICKEL ANTI-SEIZE LUBRICANT

80755

The ingredients listed below are listed in Section 313 of Title III of the Superfund Amendments and Reauthorization Act.

INGREDIENT	CAS NUMBER	AMOUNT
Nickel	* 7440-02-0	15-20
Aluminum	7429-90-5	1-3
Aluminum Oxide	1344-28-1	1-3



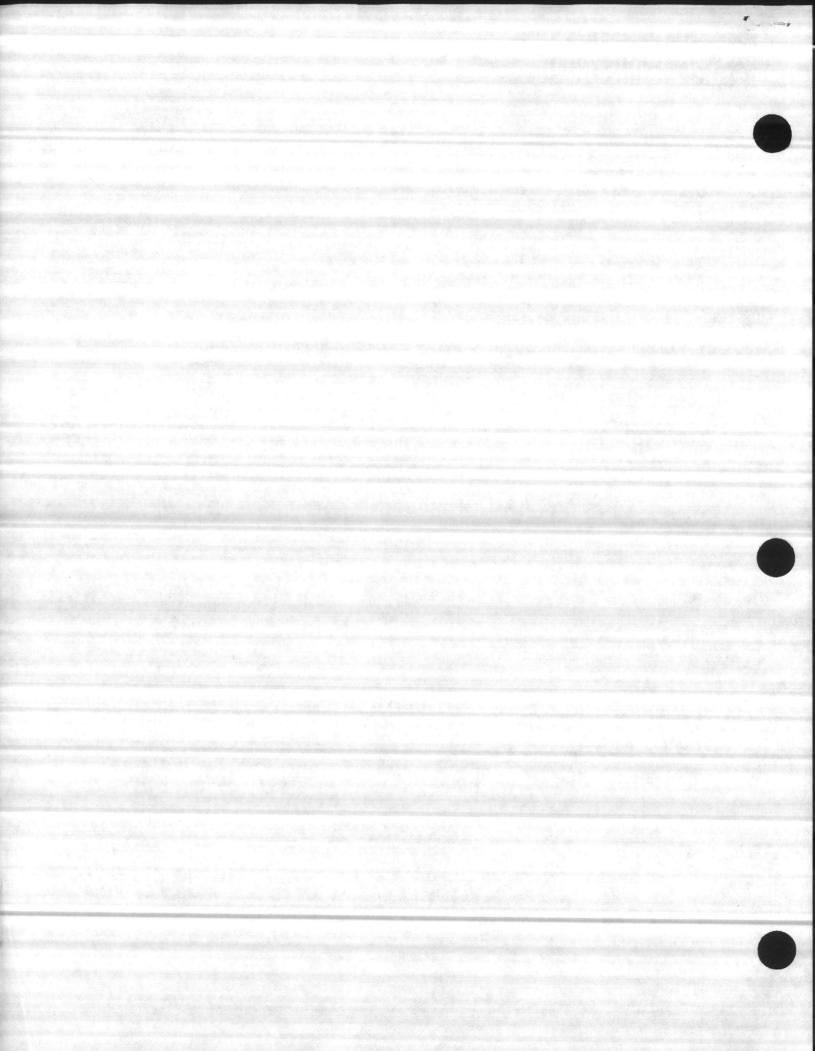
March 3, 1989

Steph Repett

Stephen Repetto Research Chemist, Environmental Health & Safety

SR/isc

142 PERMATEX INDUSTRIAL CORPORATION • 30 Tower Lane • Avon Park South • Avon, CT 06001 • (203) 677-7727 • FAX (203) 674-8552 A Subsidiary of Loctite Corporation



DESCRIPTION:

Bidgid Cutting Gil

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Form Approved Budget Bureau No. 44-R1387

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WORKPLACE STANDARDS ADMINISTRATION

Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET

2016-6143

APPEARANCE AND ODOR

SECTION I MANULA / TRADE SECRET SECTION I MANULA / TRADE SECRET RIDGE TOOL COMPANY ADDRESS (Number, Street, Car, Steer, end ZIP Code) DENTITY RIDGID DARK THREAD CUTTING OIL DATE PREPARED 11/24/85 CHEMICAL FAMILY PETROLEUM HYDROCARBON SIGNATURE OF PREPARED SECTION II HAZARDOUS INGREDIENTS HAZARDOUS COMPONENTS: OSHA PEL ACCIH TLV. Z MINERAL OIL CAS #64742-53-6 5mg/M ³ 5mg/M ³ Image/M ³ </th
RIDGE TOOL COMPANY 216/323-5581 ADDARISS (Number, Surret, Curr, Surret, Surret, Curr, Surret, Curr, Surret, Curr, Surret, Curr, Surret, Surret, Surret, Surret, Surret, Curr, Surret, Surret
ADDRESS (Number, Street, City, Store, and Zifp Code) 400 CLARK STREET, ELYRIA, OHIO 44035 IDENTITY RIDGID DARK THREAD CUTTING OIL DATE PREPARED 11/24/85 CHEMICAL FAMILY PETROLEUM HYDROCARBON SIGNATURE OF PREPARED SECTION II HAZARDOUS INGREDIENTS HAZARDOUS COMPONENTS: OSHA PEL ACGIH TLV. Z MINERAL OIL CAS #64742-53-6 5mg/M ³ 5mg/M ³
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• • •
SECTION III PHYSICAL DATA
· · · · · · · · · · · · · · · · · · ·
BOILING POINT (F.) 545°F SPECIFIC GRAVITY (H20=1) 0.9
VAPOR PRESSURE (THE HO.) <0.01 @20°C BY VOLUME (%) Negligible
VAPOR DENSITY (AIR=1) > 11 EVAPORATION RATE
SOLUBILITY IN WATER Negligible pH Neutral

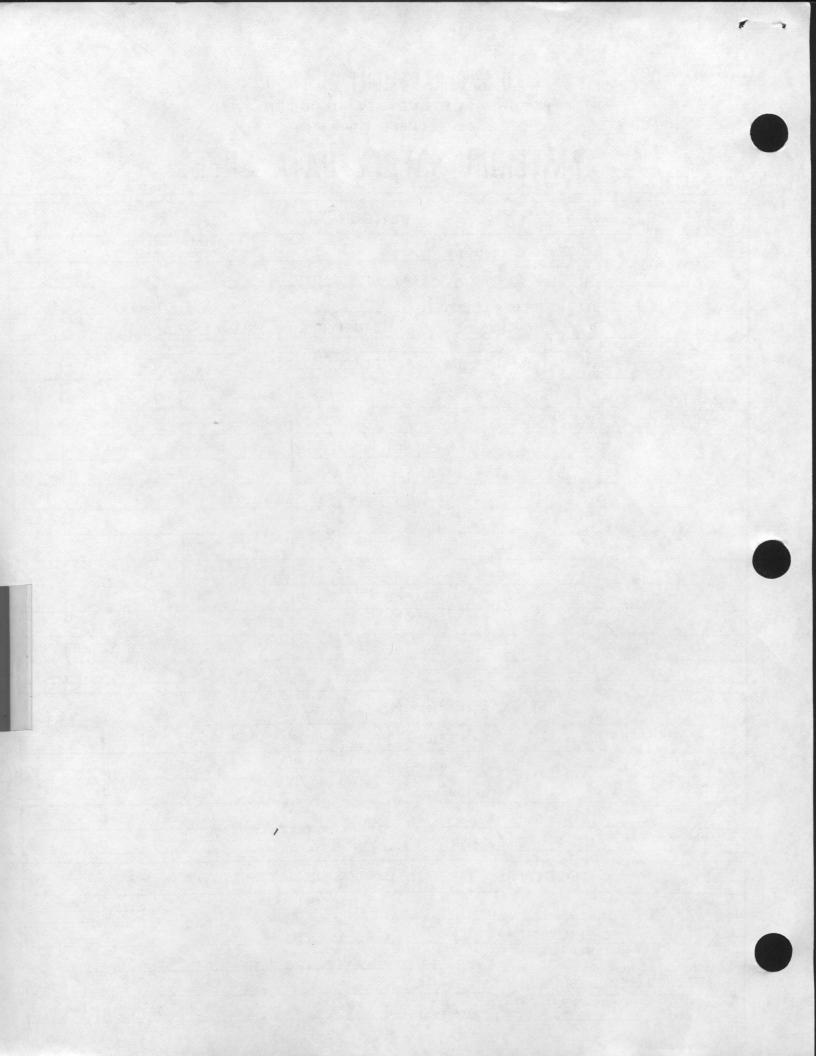
DARK LIQUID WITH FAINT SULFUR ODOR.

 SECTION IV
 FIRE AND EXPLOSION HAZARD DATA

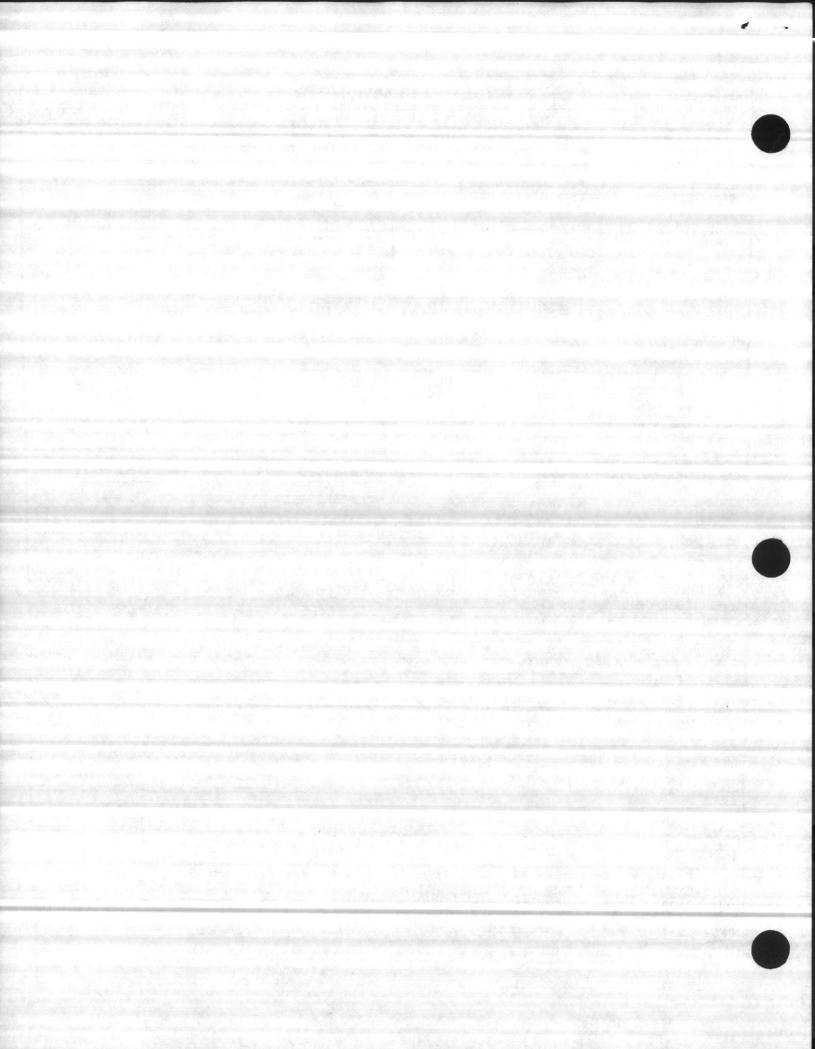
 FLASH FOINT IMPROVISED
 FLAMMABLE LIMITS

 330°F COC USED
 Isi

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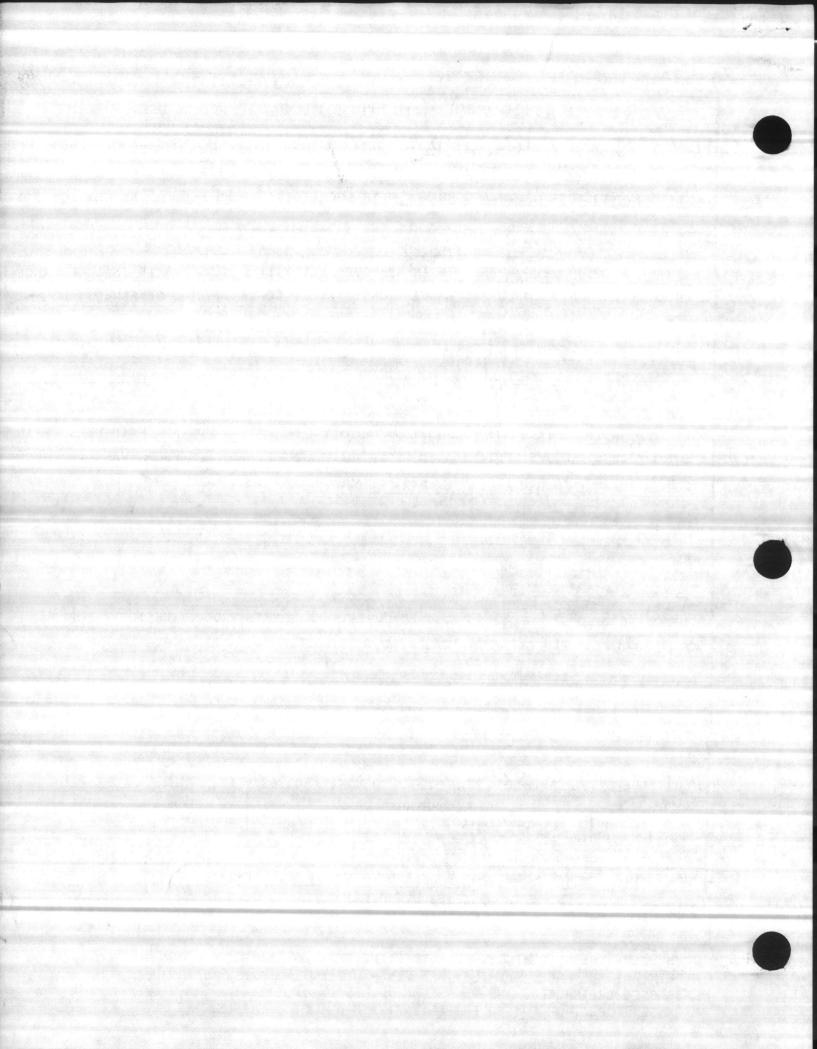


· · · · <u>-</u>		SECTION	V. REACTIVITY DATA	
TABILITY	UNSTABLE		CONDITIONS TO AVOID AVOID EXCESSIVE HEAT	OPEN
	STABLE	x	FLAMES AND OXIDIZING MATERIAL.	
NCOMPATABILITY	(Materials to avoid)	STRON	NG OXIDIZING AGENTS	
UPON COMBUS	TION: CO2			
AZARDOUS	MAY OCCUR		CONDITIONS TO AVOID	
OLYMERIZATION	WILL NOT O	CCUR	. X	
alla especial a construction Sector en especial a construction		de en la construir a de la const en la construir a de la construir a de la construir de la construir de la construir de la construir de la const en la construir de la construir		
	SEC	TION VI	HEALTH HAZARD DATA	
OUTE(s) OF	ENTRY: INH	LATION?	SRIN? INGE	STION?
Carlos California		x		and a start of the
HEALTH HAZAR	DS (ACUTE & CH	RONIC):	CAUSES IRRITATION: MAY BE SKIN DEFAT	TER IIDON
The second second	R REPEATED CON	Sector States		
CARCINOGENIC	TTY: NTP	, ,	IARC MONOGRAPHS? OSHA R	EGULATED
LARCINOGESIC	100 C	LISTED		LISTED
			NOT BIOTED NOT	JUSTED ,
an a		a de la como		
				and service here.
TONC I CULI	TOMS OF EXPOSI		DIL MIST INHALATION MAY CAUSE DIZZINESS.	NAUSEA,
	LTY BREATHING.			
	LTY BREATHING.			
	LTY BREATHING.			
AND DIFFICU		ha sh		
AND DIFFICU		LLY AGGR	RAVATED BY EXPOSURE: SENSITIVE DRY SKIN	1
AND DIFFICU		LLY AGGR	RAVATED BY EXPOSURE: SENSITIVE DRY SKIN	1
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AND DIFFICU		LLY AGGR	RAVATED BY EXPOSURE: SENSITIVE DRY SKIN	1
AND DIFFICU	DITIONS GENERAL		ES: IN CASE OF CONTACT, IMMEDIATELY FI	
AND DIFFICU MEDICAL CONT	DITIONS GENERAL	ROCEDURE		USH EYFS
AND DIFFICU MEDICAL CONT EMERGENCY AI WITH PLENTY	ND FIRST AID P OF WATER FOR	ROCEDURE AT LEAST	ES: IN CASE OF CONTACT, IMMEDIATELY FI	USH EVES



SECTION VII PRECAUTIONS FOR SAFE HANDLING USE STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: IN CASE OF SPILL, DO NOT USE WATER: SOAK UP WITH SAND, EARTH OR OTHER INERT MATERIAL. PUT IN A SUITAB CONTAINER. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. WASTE DISPOSAL METHOD: BURY IN AN APPROVED LANDFILL OR INCINERATE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. AVOID CONTAMINATION OF SEWERS AND WATERWAYS. 1 . . . PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: AVOID CONTACT WITH EYES, SKIN AND CLOTHING. REMOVE CONTAMINATED CLOTHING, LAUNDER BEFORE REUSE. WASH THOROUGH AFTER HANDLING. AVOID BREATHING MIST OR VAPORS. OTHER PRECAUTIONS: SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUE, FOLLOW LABEL WARNINGS EVEN AFTER CONTAINER IS EMPTIED. . . SECTION VIII CONTROL MEASURES RESPIRATORY PROTECTION (Specify 170) NIOSH APPROVED RESPIRATOR IF EXPOSED TO HOT VAPOR OR MIST SPECIAL LOCAL EXHAUST VENTILATION RECOMMENDED N/A OTHER MECHANICAL (General) N/A EYE PROTECTION PROTECTIVE GLOVES NEOPRENE OIL IMPERVIOUS SAFETY GLASSES OR GOGGLES OTHER PROTECTIVE EQUIPMENT USE AS REQUIRED TO AVOID SKIN CONTACT. WASH AFTER HANDLING. HYGENIC PRACTICES: WE BELIEVE THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED

WE BELIEVE THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE, BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KINI EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE, OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.



DESCRIPTION:

Wescodyne



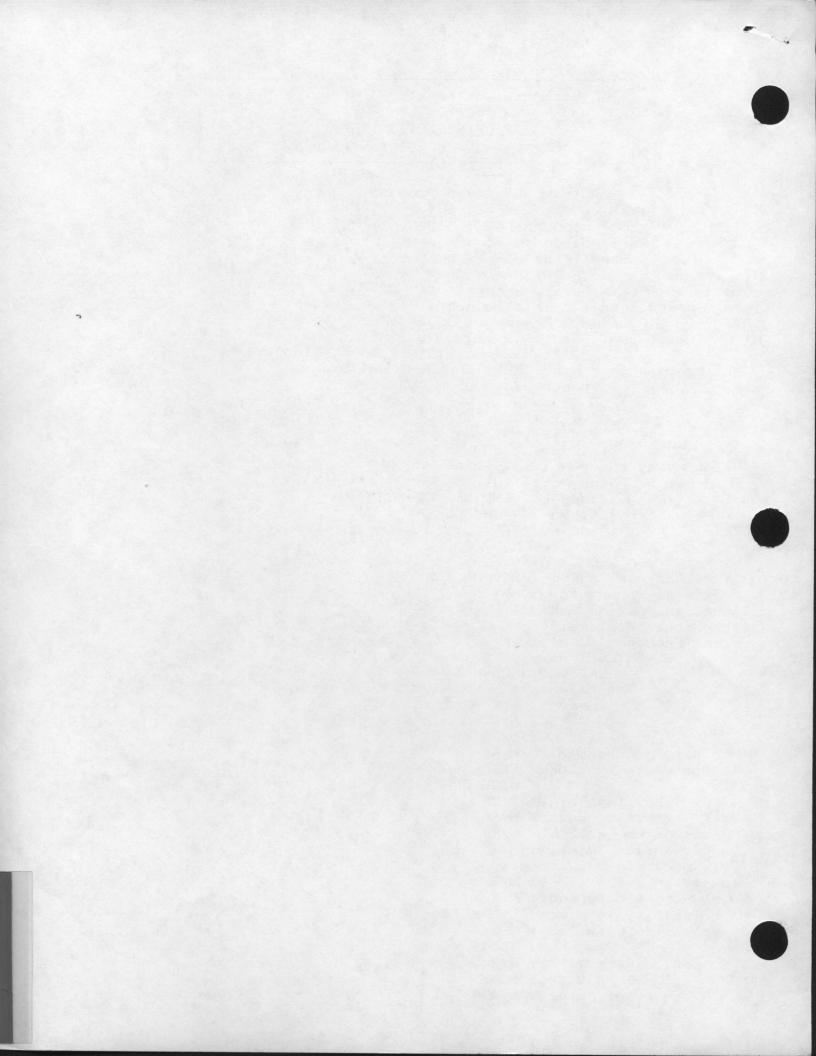
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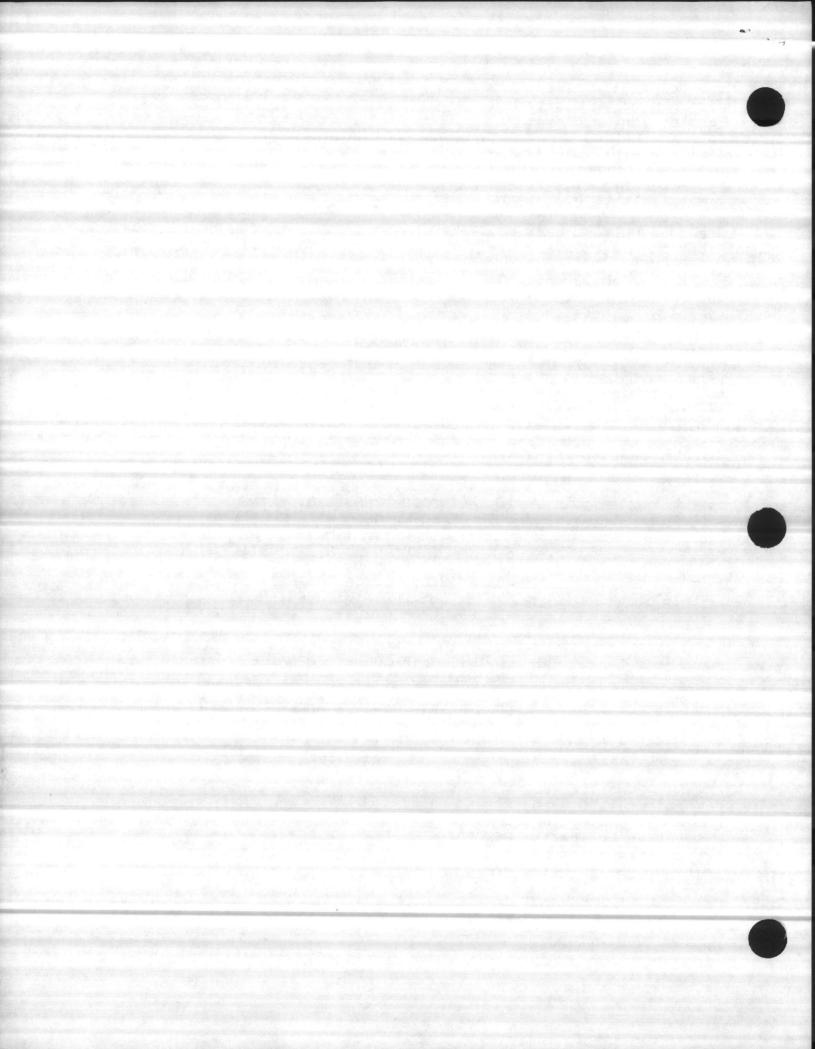
DoD Hazardous Materials Information System DoD 6050.5-LR AS OF SEPT 11, 1989 For U.S. Government Use Only

Stock Number: 00F008385 FSC: 6840 Manufacturers CAGE: 56883 Part No. Indicator: A Part Number/Trade Name: WESCODYNE Safety Focal Point: F Record No. for this Safety Entry: 001 Total Safety Entries, This No.: 001 Date MSDS Prepared: 03JAN86 Safety Data Review Date: 21JUN89 Item Name: DISINFECTANT, LIQUID Manufacturer Name: PENETONE CORPORATION Street: 74 HUDSON AVENUE P.O. Box: N/K City: TENAFLY State: NJ Zip Code: 07670 Emergency Phone No.: (201) 567-3000 Information Phone No.: (201) 567-3000 Company: PENETONE CORPORATION Street or P.O. Box: 74 HUDSON AVENUE City: TENAFLY State: NJ Zip Code: 07670 MSDS Serial Number: BGVFD Proprietary: NO Ingredient Action Code: A Ingredient Focal Point: F Ingredient Sequence Number: 01 NIOSH (RTECS) No.: 1000314NH CAS NO .: NON-HAZ Ingredient: NON-HAZARDOUS FOR INGREDIENTS Percent: N/K OSHA PEL: N/R ACGIH TLV: N/R Other Recommended Limit: N/R Appearance and Odor: BLACK BROWN FREE FLOWING LIQUID; MILD ODOR Boiling Point: 212F Melting Point: N/R Vapor Pressure(MM Hg/70 F): N/R Vapor Density (Air=1): N/R Specific Gravity: 1.030 Decomposition Temperature: N/R Evap. Rate & Reference: N/K Solubility in Water: COMPLETE % Volatiles by Volume: NEG. pH: 1.7% Corrosion Rate (IPY): N/R Flash Point: NONE Flash Point Method: N/R



Lower Explosive Limit:	
Upper Explosive Limit:	
Extinguishing Media:	
Special Fire Fgting Proc:	
Unusual Fire & Expl. Hzrds:	
Stability:	
Cond. to Avoid(Stability): Materials to Avoid:	N/R
Hazardous Decomp. Products:	
Hazardous Poly. Occur:	
Conditions to Avoid(Poly):	
LD50-LC50 - Mixture:	
Route of Entry-Inhalation:	
Route of Entry - Skin:	
Route of Entry - Ingestion:	NO
Health Hzrds-Acute&Chronic:	SKIN: DRYNESS TO MILD IRRITATION. EYES: IRRITANT.
Carcinogenity - NTP:	
Carcinogenity - IARC:	
Carcinogenity - OSHA:	
Expl. of Carcinogenity:	NONE
Sgns and Sym of Oexposure:	SKIN: DRYNESS TO IRRITATION. EYES: IRRITANT.
Med. Conds. Aggr. by Exp:	
Emerg. and FirstAid Procs:	EYES: FLUSH WITH WATER FOR SEVERAL MINUTES. SEEK PHYSICIAN IF IRRITATION PERSISTS. SKIN:
	WASH AFFECTED AREA WITH SDAP &
	WATER. INHALATION: MOVE TO A
	WELL VENTILATED AREA. INGESTION:
and the second sec	GIVE COPIOUS AMOUNTS OF MILK OR
	WATER. SEEK MEDICAL ATTENTION.
if Matl. Relsd or Soed:	FLUSH DOWN DRAIN WITH WATER OR
	USE ABSORBENTS.
Neutralizing Agent:	
Waste Disposal Method:	TO SEWER OR WASTE TREATMENT
	FACILITY (IF LOCAL ORDINANCES
	ARE RESTRICTIVE).
Handg and Strg Precautions:	
	DOES FREEZE, THAW & ROLL
	CONTAINER. PRODUCT WILL REVERT
	TO NORMAL CONSISTENCY.
Other Precautions:	
Respiratory Protection:	
	NONE REQUIRED
Protective Gloves:	
Eye Protection:	
Other Protective Equipment:	
Work Hygienic Practices:	
Sup. Safe and Health Data:	N/R





TAB PLACEMENT HERE

DESCRIPTION:

Cationic Polymer



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Confidential Records Management, Inc. New Bern, NC 1-888-622-4425 9/08



PRODUCT DATA

Mechanical & Environmental Control, Inc.

108 Cedar Street Dudley, N. C. 28333

(919) 734-1073 (919) 942-3237

MEC FLOC 189K

Cationic Polymer

Municipal and Industrial Wastewater Treatment

MEC FLOC 189K is a highly cationic high molecular weight, liquid polyquaternary amine. It is effective as a dewatering aid for industrial and municipal waste sludges. It is also used for filtration, flotation, emulsion breaking and clarification processes. This product is approved for use in paper which comes in contact with food, according to guidelines set forth by the Food & Drug Administration under 21 CFR 176170. The product is approved by EPA for potable water at dosages up to 20 ppm.

Recommended Solution Preparation and Feeding

MEC FLOC 189K should be fed using a corrosion resistant, positive displacement pump and should be prepared at solution concentration of 0.5% or less. Feed the diluted product at a point that insures complete mixing. In some cases the product can be fed neat.

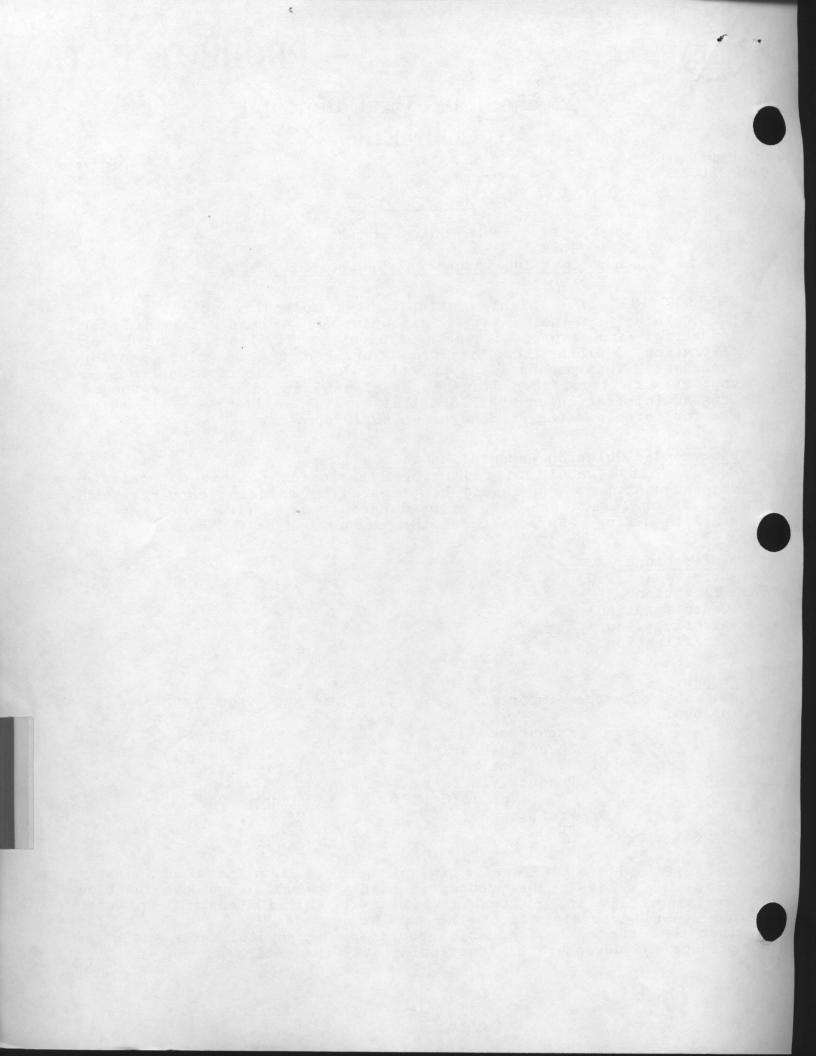
Applications: -Gravity settling -Filtration -Centrifugation -Air Flotation -Clarification

Properties:

A table of some important properties of MEC FLOC 189K are as follows:

Appearance Specific Gravity	Amber liquid
at 25°C Product Viscosity	1.13 - 1.16
at 25°C (CP)	5000 - 9000
Freezing Point	0° F
PH	4-0
Flash Point	200°F

MEC FLOC 189K is effective in producing a fast settling, easily filtering sludge. The product is highly versatile and can function satisfactorily in low turbidity water. Chlorinated make-up water does not adversely affect the performance of MEC FLOC 189K. The fact that the cationic charge groups are non hydrolyzable gives the product the advantage of functioning over the entire pH range.



andling and Storage:

Storage in glass, stainless steel, plastic or epoxy lined vessels is recommended. Do not use aluminum or iron in feed or storage systems. If freezing occurs, product may be used after being thawed and thoroughly mixed. CAUTION: Spilled product can be very slippery. Low temperatures can cause pumping problems due to increase in product viscosity.

Plant Operations:

There are many polymer addition alternatives from neat polymer addition to very sophisticated application sequences. Your representative can discuss individual requirements with you.

Packaging:

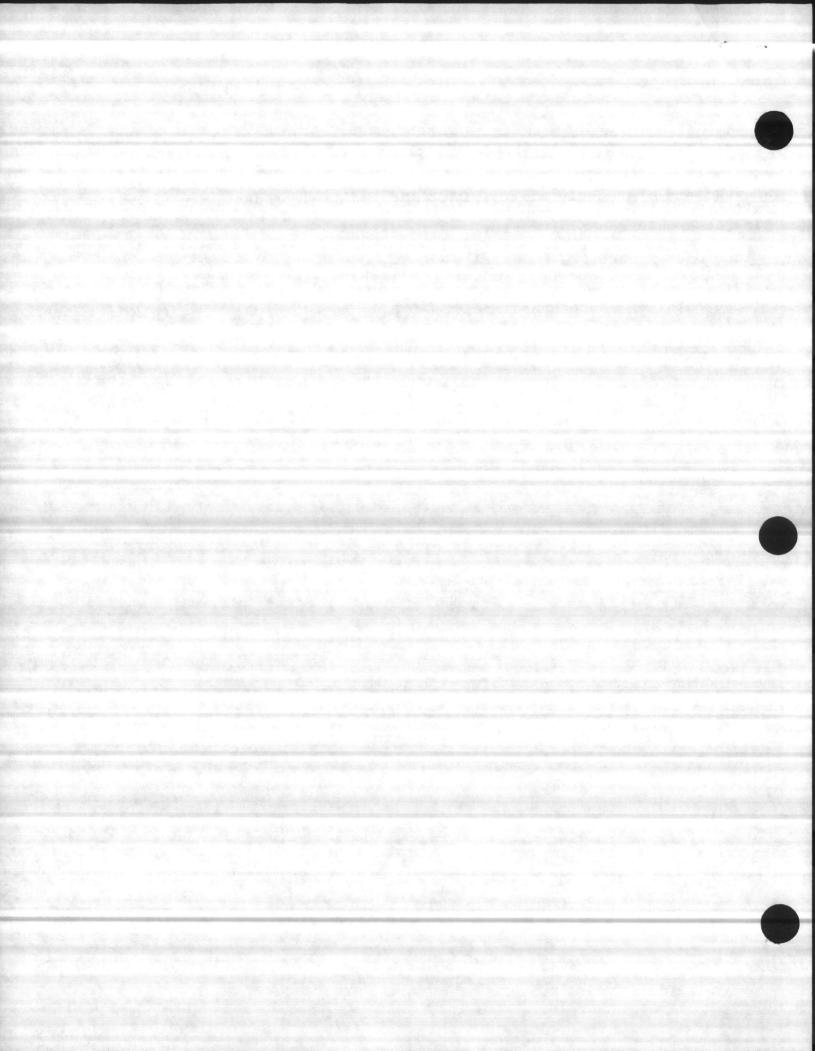
MEC FLOC 189K is packages in 55-gallon steel drums or is available in bulk.







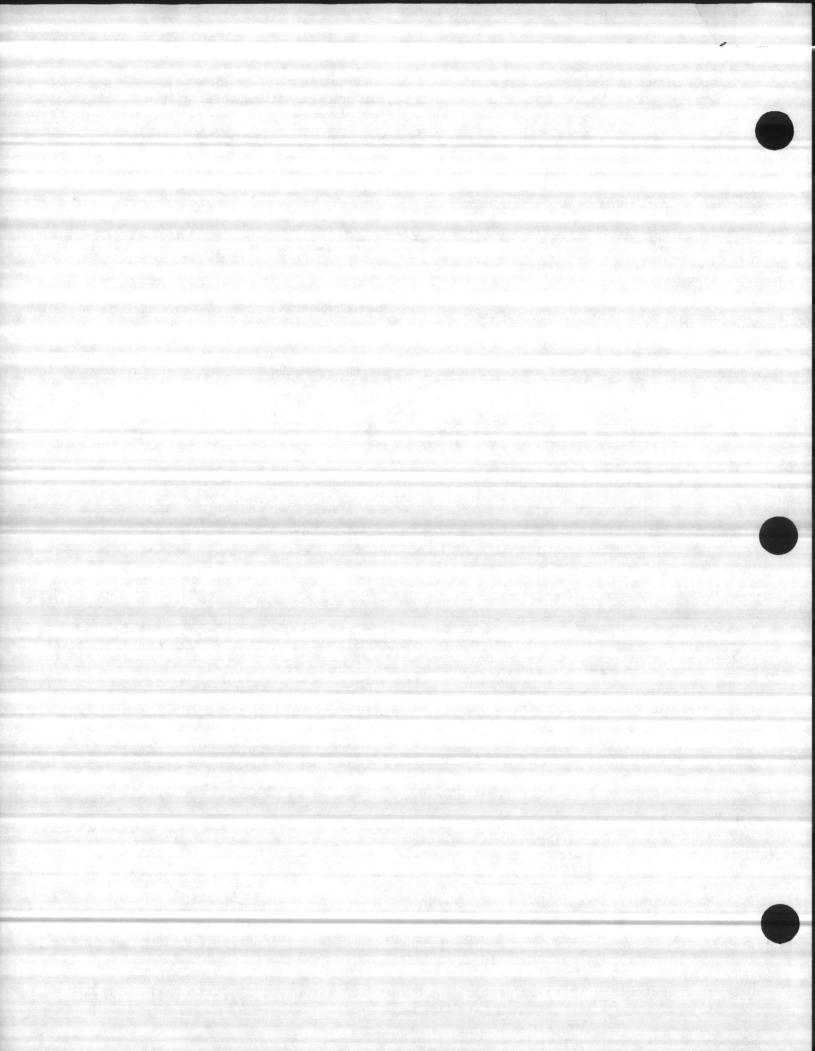




Material Safety Data Sheet May be used to comply with OSHA's Hazard Communication Standard, CFR 1910.1200. Standard must be insulted for specific requirements.	U.S. Department of Labor Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072				
IDENTITY (As Used on Label and Usi) MEC-FLOO	. 189к	Note: Blank spac	es are not permitte	nd. If any item is not bace must be marked	applicable, or no
Section I	<u>, 107K</u>	1			
Manulacturer's Name	· · ·	Emergency Telep	hone Number		
MECHANICAL & ENVIRONMENTAL	CONTROL,	INC.	(9	119) 378-9393	A state that
Address (Number, Street, City, State, and ZIP Code) 108 Cedar Street		Telephone Numb	er for Information (9	19) 378-9393	
Dudley, N. C. 28333		Date Prepared	and a strange of the		t Applicable
		September Signature of Prep - K aller 9	22, 1986 Darer (optional)		I Established
Section II - Hazardous Ingredients/Identif	ty Information		a state of the sta	An	e e de moto contrator Secondario de Secondario
Hazardous Components (Specific Chemical Identity; Con	mmon Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommende	
Polyquaternary Amine Polymer	a de cara de c	N/E	N/E	Irritan	+
(Trade Secret)	Sec. Process			(eye and sk	
		in the second			ng n
Section III — Physical/Chemical Characteri	stics	an Standillan		an an an an an an an a	and the second state
Boiling Point	ca. 212°F	Specific Gravity (H	120 = 1)		ca. 1.1
Vapor Pressure (mm Hg.)		Melting Point		aller as property for any	Ca. 1.1
Vapor Density (AIR - 1)	Nil			e and all the second	5°F
vapor Density (AIR = 1)	Nil	Evaporation Rate (Butyl Acetate = 1) Loca than		
Solubility in Water			· LESS LIIAN		
Completely soluble					
Clear, colorless liquid; odor o	of amine				
Section IV — Fire and Explosion Hazard D	ata				Roghe geologica conception
Flash Point (Method Used) Greater than 200°F SETA	al programs	Flammable Limits N/E	and the second	LEL N/E	UEL N/E
Extinguishing Media Water spray, water fog, dry che	emical, CO ₂		5		
eclal Fire Fighting Procedures A self contained breathing appa	aratus is t	o be worn by	y firefight	ing personne	1.
Spilled product creates very sl			and a second		
Unusual Fire and Explosion Hazards If water content is lost, under	high heat	the materia	al may relea	ase flammble	vapors.
	page 1	and the second second second	· Arrent - Arrent		

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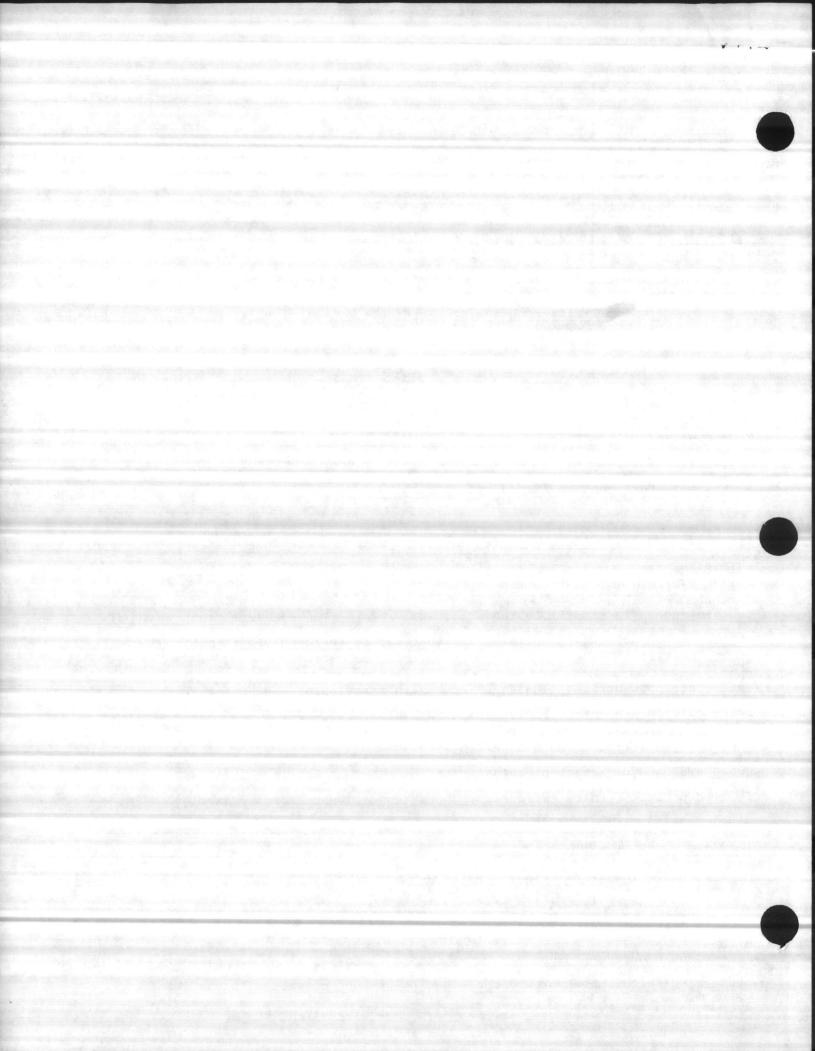


Section V -	Reactivity Data	a					
Stability	Unstable	T	Conditions to Avold				
	Stable			None Kno	own		
· · ·	1	X	Lange and the				
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olymerization	Way Occur	- 1995 	Conditions to Avoid	None Know	vn		
	Will Not Occur						
Section VI -	- Health Hazard					<u> </u>	
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	e Taken in Handling						
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A U.S.O.P.O .: 1986 - 491-529/45775



Ricmar Industries, Inc. 2525 American Lane Elk Grove Village, IL 60007 -595-9113

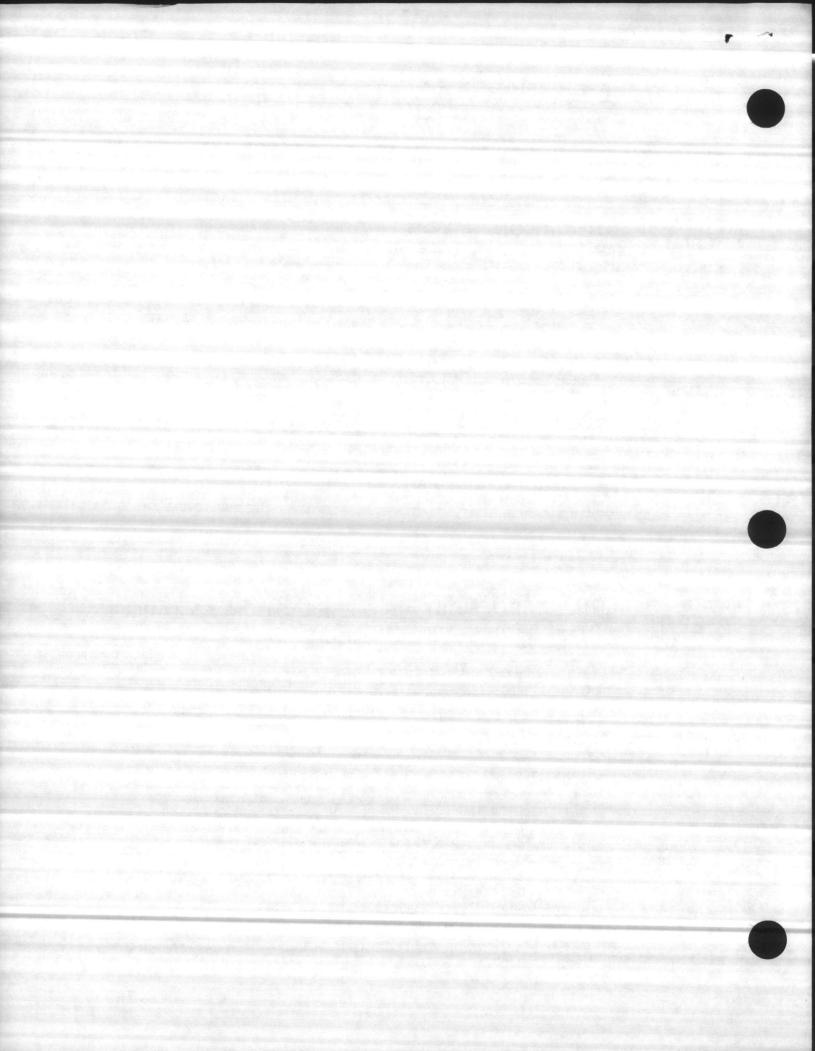
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1.	IDENTIFICATI	ON				19-1 de 1		
Α.	TRADE NAME	NITRA SV	VEET		1000			
8.	DESCRIPTIVE NAME			La complete		an a		
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2.	PHYSICAL DATA	and a second of the second	i general de la serie de la compañía		•
Α.	BOILING POINT (F)	M/A	SPECIFIC GRAVITY	1.01	
Β.	VAPOR PRESSURE (mm Hg)	N/A	% VOLATILE BY VOLUME	50	
C.	VAPOR DENSITY (air = 1)	N/A	EVAPORATION RATE	() = 1
D	SOLUBILITY IN WATER	EMULSIFY	pH RANGE	8	
Ε.	APPEARANCE & ODOR	STRAW-CITRUS			

	and the second
HAZARDOUS INGREDIENTS	%
SOPROPANOL	50.
	· · · · · · · · · · · · · · · · · · ·

4.	HEALIHE	AZARD, FIRST AID & PRECA	AUTIONARY LABELING			
Α.	FOR INDUSTRI	AL, COMMERCIAL, INSTITUTIONAL USE ONLY				
Β.	CAUTION DV		X KEEP OUT OF REACH OF CHILDREN			
C.	DO NOT BREATH	E VAPOR OR SPRAY. HARMFUL OR FATAL IF ST	WALLOWED.			
D.	AVOID SKIN CO	ONTACT WEAR EYE & HAND PROTECTION.				
E		PRESENCE OF UNPROTECTED FOODS. X				
F		OVE HAZARDOUS INGREDIENTS.				
G.			ATTACHED)			
н	FLAMABLE LIQUID (RED LABEL ATTACHED) D COMBUSTIBLE LIQUID					
1	IF SWALLOWED: D'BRINK LARGE AMOUNTS OF WATER OR MILK. SEE PHYSICIAN. DRINK VINEGAR SOLUTION OR LEMON JUICE. SEE PHYSICIAN. DRINK TEASPOONFUL MAGNESIA, CHALK, WHITING OR WALL PLASTER, OR SMALL PIECES OF SOAP SOFTENED IN MILK OR RAW EGG WHITES. SEE PHYSICIAN.					
J	IF ON SKIN:	ØWASH WITH WATER. □ FLOOD WITH WATER USING SOAP FREELY.	RINSE WITH VINEGAR. JRFACE WITH WATER USING SOAP FREELY, & THEN			
К.	IF IN EYES IMMEDIATELY FLOOD WITH LARGE AMOUNT OF FLOWING WATER. SEE PHYSICIAN. X					
L.	IF INHALED MOVE TO LOCATION WITH PLENTY OF FRESH AIR. IF BREATHING HAS STOPPED, APPLY ARTIFICIAL RESPIRATION. SEE PHYSICIAN. X					



5.	FIRE & EXPLOSION HAZARD
Α.	PRODUCT IS: D FLAMABLE XI COMBUSTIBLE D NON-COMBUSTIBLE
8	PRODUCT IS: XLIQUID DOWDER DOTHER
с.	PRODUCT IS: WATER BASED CXSOLVENT BASED
D.	FLASH POINT (F) 105 E. AUTOIGNITION TEMP. (F)
F.	EXTINGUISHING MEDIA: TO WATER TO DRY CHEMICAL TO FOAM
G.	FLAMMABLE LIMITS IN AIR (% VOLUME) LOWER UPPER
H.	UNUSUAL FIRE & EXPLOSION HAZARD
1.	HAZARDOUS THERMAL DECOMPOSITION PRODUCTS

6.	REACTIVITY DATA
A	CAS NORMALLY STABLE
В.	C YIELDS OXYGEN OR OTHER STRONG OXIDIZING GASES THAT MAY PROMOTE COMBUSTION IN OTHER MATERIALS
C.	C WILL VIGOROUSLY POLYMERIZE, DECOMPOSE OR CONDENSE
D.	E REACTS VIGOROUSLY WITH WATER
Ē.	C DUST MIXED WITH AIR IN PROPER PROPORTION CAN BE EXPLOSIVE
F	MATERIALS TO AVOID



R

7. SPILL OR LEAK PROCEDURES

A LEAKS SHOULD BE REPAIRED IMMEDIATELY. X

B , SPILLS SHOULD BE SWEPT, MOPPED, OR COLLECTED & SURFACE RINSED WITH WATER. X

C. DISPOSAL SHOULD COMPLY WITH FEDERAL, STATE & LOCAL REGULATIONS. X

8. SPECIAL PROTECTION INFORMATION

A RESPIRATORY: THE FOR DUST OR VAPOR AR SUPPLY TYPE OTHER

VENTILATION: LOCAL GENERAL MECHANICAL LOW LEVEL EXIT

C. EYE PROTECTION: D SAFETY GLASSES CHEMICAL GOGGLES FACE SHIELD

D. PROTECTIVE GLOVES: CRUBBER OR NEOPRENE OTHER

E. , PROTECTIVE EQUIPMENT: APRON SEVE BATH SAFETY SHOWER

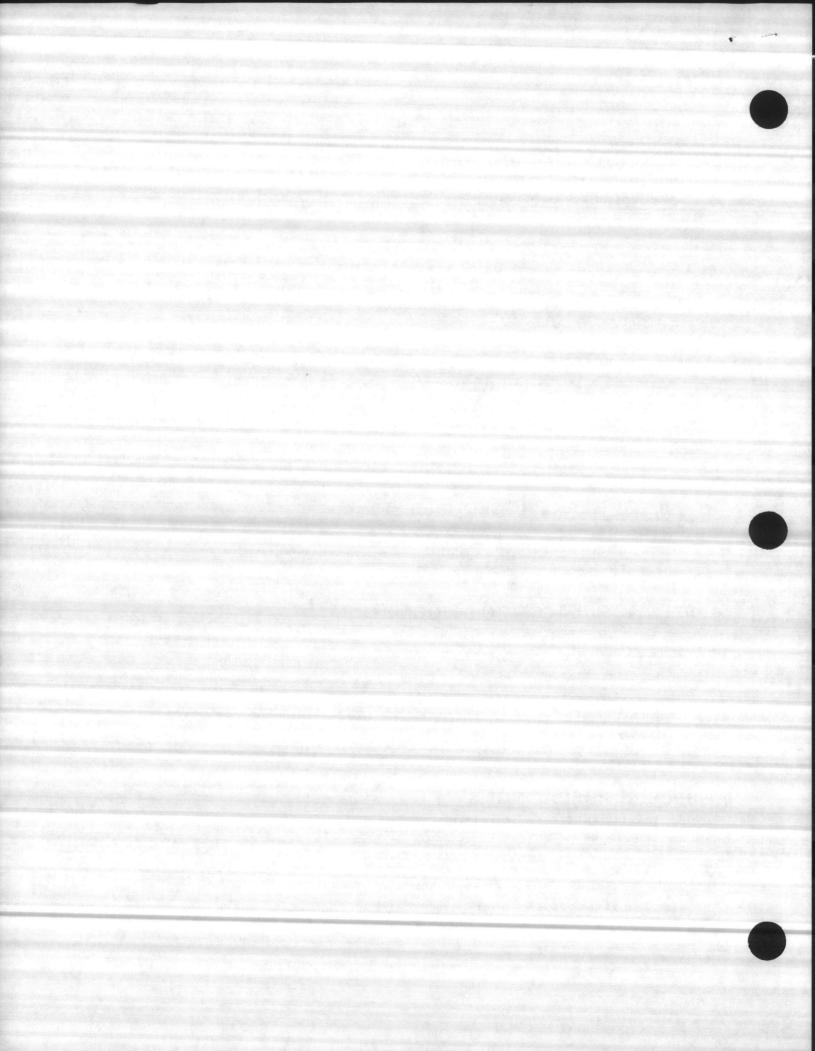
F. CONTAMINATED CLOTHING SHOULD BE REMOVED OTHER

9. SPECIAL PRECAUTIONS A FOR PRECAUTIONARY LABELING REFER TO SECTION 4. B SHIPPING COMMODITY: □ CLEANING COMPOUND, NOI. □ OTHER C OTHER HANDLING & STORAGE CONDITIONS KEEP AWAY FROM HEAT AND OPEN FLAME

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- PAGE 2 of 2 PAGES -



NITRA SWEET

AS DRAIN OPENER

POUR 10 OZ. OF NITRA SWEET, WAIT ONE HALF HOUR, FLUSH WITH HOT WATER. NITRA SWEET QUICKLY DISSOLVES GREASE AND SOAP SCUM BUILD-UP IN DRAINS, PIPES AND GREASE TRAPS. DO NOT USE IN PLASTIC PIPES.

AS CLEANER FOR FLOORS AND EQUIPMENT

MIX 4 OZ. OF NITRA SWEET PER GALLON OF WARM WATER. SPRAY OR MOP GENEROUSLY ON FLOORS OR EQUIPMENT. ALLOW NITRA SWEET TO WORK FOR 5 MINUTES. RINSE WITH CLEAR WATER. NOTE: BECAUSE NITRA SWEET IS POWERFUL, IT MAY HARM SOME PLASTIC OR PAINTED SURFACES. TEST SMALL AREA BEFORE USING. BECAUSE NITRA SWEET IS AN EXCELLENT GREASE SOLVENT, IT CAN REMOVE NATURAL SKIN OILS FROM THE HANDS. FOR THIS REASON, RUBBER GLOVES ARE REC-OMMENDED TO PREVENT CHAPPING.

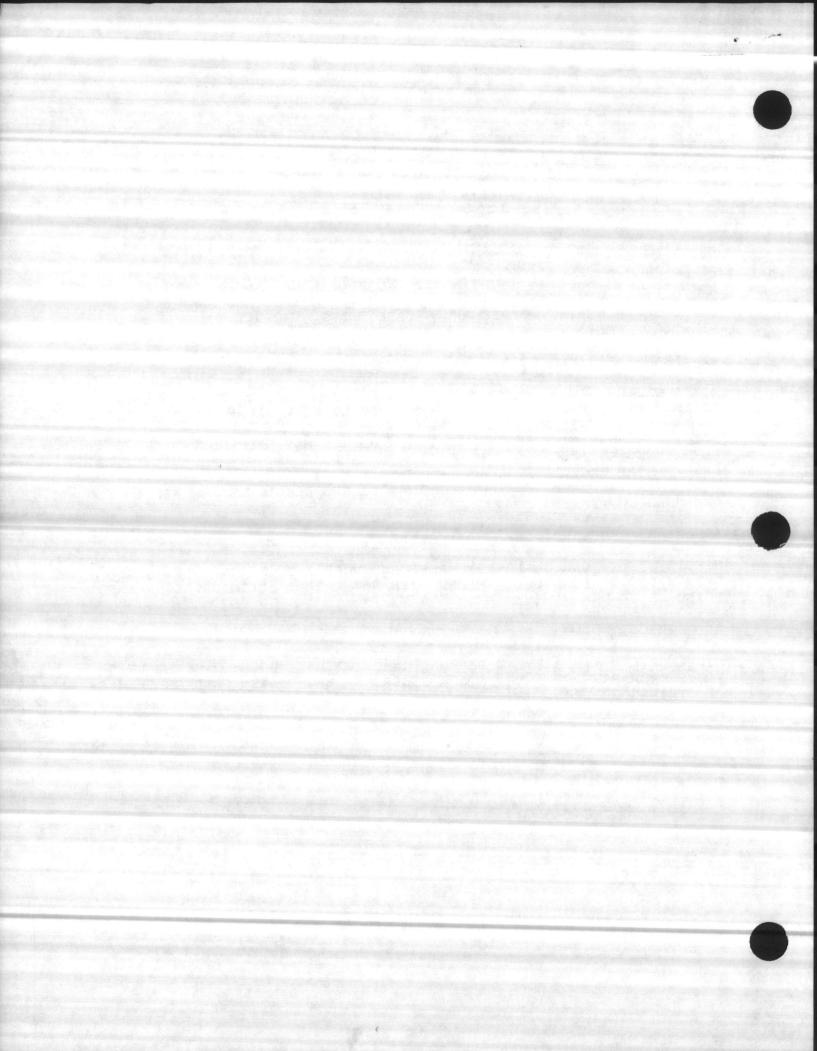
AS GREASE TRAP AND DRAIN MAINTAINER

MIX 10 OZ. IN ONE GALLON OF WATER AND POUR INTO DRAIN. LET STAND OVER NIGHT IF POSSIBLE. FLUSH WITH HOT WATER. ELIMINATES GREASE BUILD-UP IN DRAIN LINES.

AS ODOR CONTROLLER

MIX 4 OZ. OF NITRA SWEET PER GALLON OF WATER. POUR OR SPRAY WITH PRO-PUMPER TANK SPRAYER IN DUMPSTERS, GARBAGE CANS, GARBAGE TRUCKS OR OTHER ODOR PROBLEMS.





SUPPLIER NOTIFICATION REQUIREMENT

SARA Title III

This product contains a toxic chemical or chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Because Jones Chemicals is in Standard Industrial Classification codes 20 through 39, manufactures or processes this toxic chemical, and sells or otherwise distributes this mixture or trade name product containing a toxic chemical to you, we are required to give you this notification under SARA Title III.

This notification is required to be made each year with at least the first shipment of each mixture or trade name product to each recipient beginning January 1, 1989.

This notification must not be detached from this Material Safety Data Sheet (MSDS). Any copying and redistribution of this MSDS shall include copying and redistribution of this notification attached to copies of the MSDS subsequently redistributed.

This mixture or trade name product contains the following toxic chemicals:

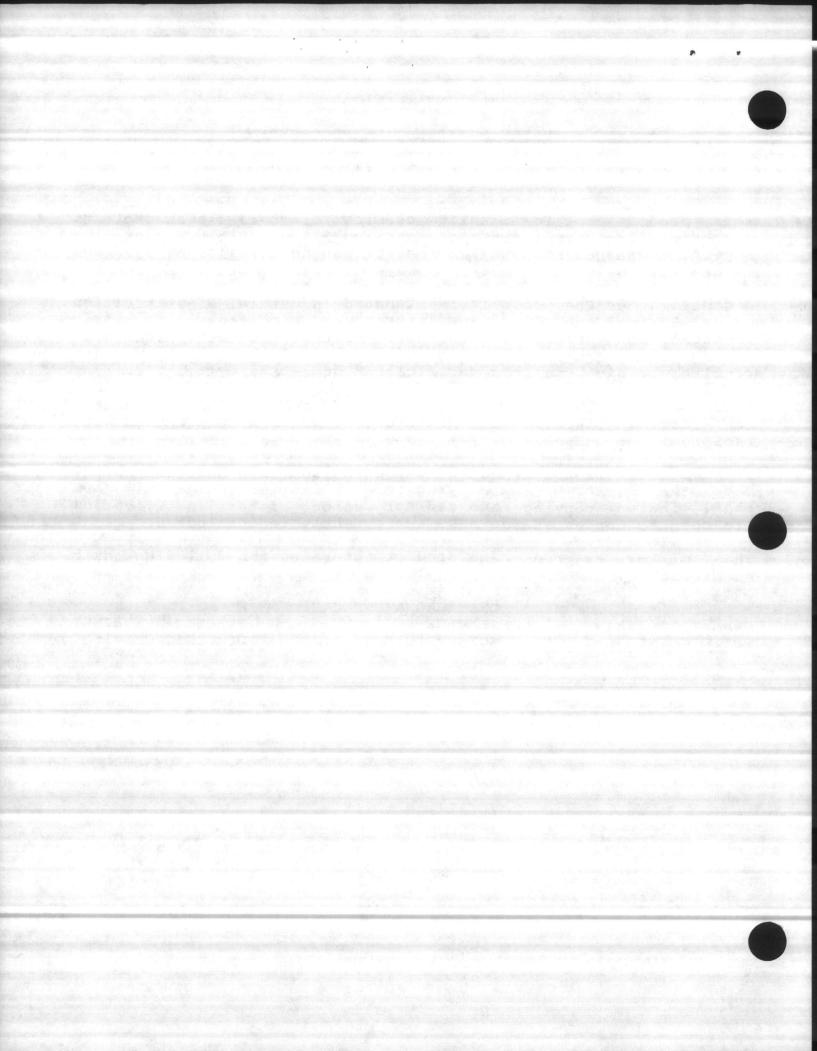
SARA TITLE III	SERVICE REGISTRY	PERCENT BY WEIGHT
TOXIC CHEMICAL	NUMBER (CAS #)	OF TOXIC CHEMICAL
	CHEMICAL ABSTRACTS	DEDCENT DY MEICHT

Chlorine

7782-50-5

99.5%





OCCIDENTAL CHEMICAL MATERIAL SAFETY DATA SHEET

MSDS NUMBER: M4734

MSDS DATE: 05-05-89

PRODUCT NAME : LIQUID CHLORINE

24 HOUR EMERGENCY PHONE: (716) 278-7021

I. PRODUCT IDENTIFICATION

HMIS HAZARD RATINGS

HEALTH HAZARD 3 FIRE HAZARD 0 REACTIVITY 0 Based on the National Paint & Coatings Association HMIS rating system.

SARA/TITLE III HAZARD CATEGORIES

Immediate (ACUTE) Health: YES Delayed (Chronic) Health: NO Fire Hazard: YES

Sudden Release of Pressure: YES

CAS NUMBER:

NO

7782-50-5

Reactive Hazard:

MANUFACTURER	'S:	Occidental Chemical Corporation	
NAME AND	:	Customer Service, Occidental Tower,	Telephone
ADDRESS	:	P O Box 809050, Dallas, Texas 75380	(1-800-752-5151)

CHEMICAL NAME: Chlorine

SYNONYMS/COMMON NAMES: Chlorine Gas

HEMICAL FORMULA: C12

DOT PROPER SHIPPING NAME: Chlorine

DOT HAZARD CLASS: Nonflammable gas

DOT I.D. NUMBER: UN1017

DOT HAZARDOUS SUBSTANCE: RQ 10#

II. HEALTH HAZARD INFORMATION

EMERGENCY AND FIRST AID PROCEDURES

EYES:

IMMEDIATELY flush eyes with plenty of water for at least 15 minutes holding lids apart to ensure flushing of entire eye surface. Washing eyes within several seconds is essential to achieve maximum effectiveness. SEEK MEDICAL ATTENTION IMMEDIATELY.

SKIN:

Treat for inhalation first. Remove contaminated clothing under safety shower. Flush exposed skin with water. Wash with soap and water. If irritation is present after washing, GET MEDICAL ATTENTION.

INHALATION:

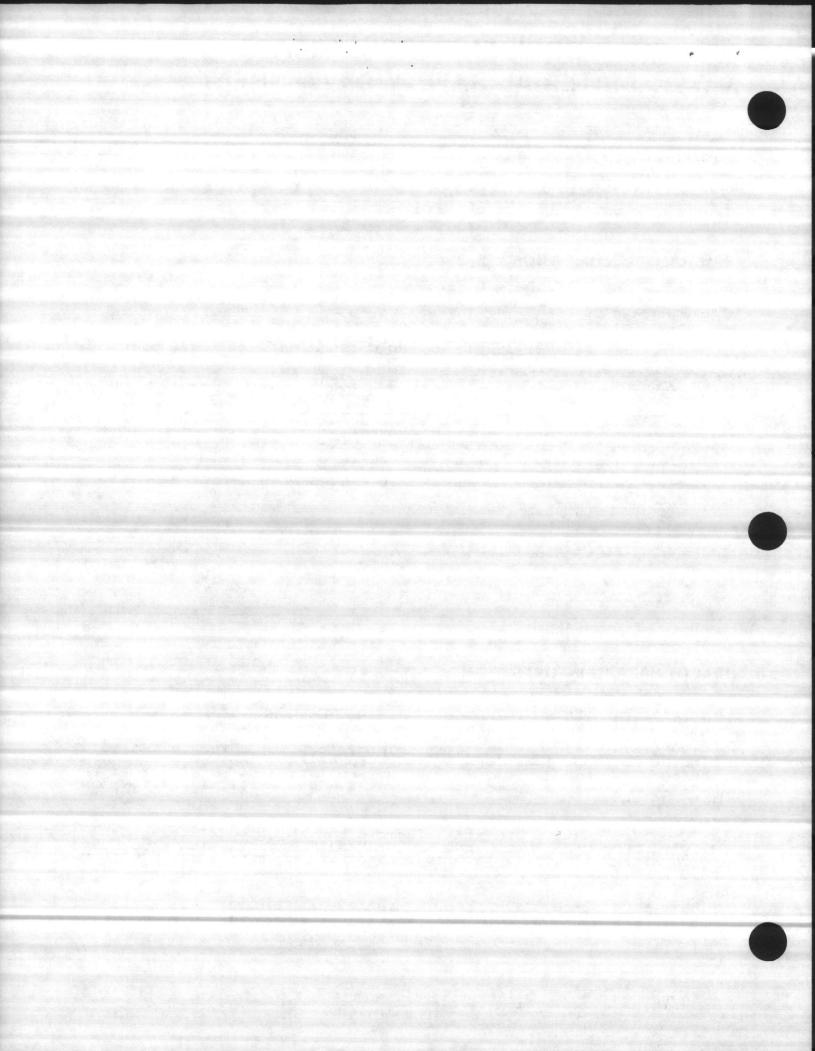


Remove to fresh air. Administer oxygen until victim breathes easily. Keep warm and at rest. In mild cases, give milk to relieve irritation. DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION AS SOON AS POSSIBLE.

- PEL = OSHA Permissible Exposure Limit
- ND = No relevant information found or not available CORP = Corporate Exposure Limit

TLV = ACGIH Threshold Limit Value. Current NA = Not applicable * = See Chronic Effects Information IMPORTANT The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY, OR GUARANTY EXPRESS OR IMPLIED IS MADE REGARDING PERFORMANCE, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling and storage. Other factors may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe

CAS = Chemical Abstract Service Number



OCCIDENTAL CHEMICAL MSDS NUMBER : M4734 LIQUID CHLORINE RODUCT NAME :

II. HEALTH HAZARD INFORMATION (Continued)

INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. (if available, give several glasses of milk). If vomiting occurs spontaneously, keep airway clear and give more water. SEEK MEDICAL ATTENTION IMMEDIATELY.

ROUTES OF EXPOSURE

INHALATION:

May cause severe irritation to respiratory tract followed by coughing, burning, chest pain, vomiting, headache, anxiety and feeling of suffocation. Severe exposure may cause pneumonitis and pulmonary edema. Repeated exposure to chlorine may result in reduced pulmonary capacity and dental erosion.

SKIN:

Contact with liquid chlorine may cause burns, blistering and tissue destruction.

EYE CONTACT:

Liquid and/or high concentrations of chlorine gas in contact with the eyes will cause extreme irritation and/or burns.

INGESTION:

Unlikely to occur.

EFFECTS OF OVEREXPOSURE



ACUTE : Liquid contact with skin or eyes may cause burns. Vapors may cause severe irritation to skin, eyes and respiratory tract. Inhalation of large concentrations may cause pneumonitis and pulmonary edema.

CHRONIC:

There are no known chronic effects from exposure to chlorine vapors at or below the accepted occupational limits for exposure. Repeated exposure to chlorine above the TLV may result in reduced pulmonary capacity and dental erosion.

TOXICOLOGY DATA:

Chlorine gas is a primary irritant of the respiratory tract.

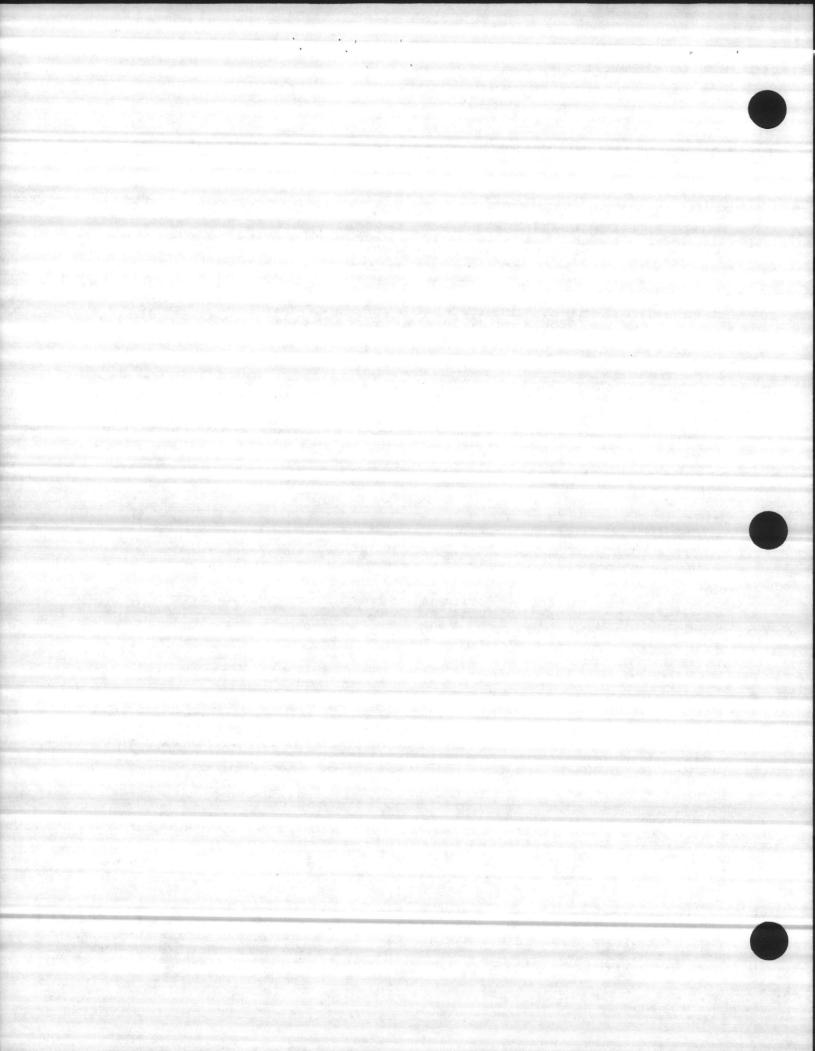
Severe exposure to vapor can be fatal. Exposure to liquid can cause burns on contact. Prompt treatment is important to minimize effects.

The hazard at different concentrations is reported to be as follows: 0.2-0.5 ppm = No toxic, long term effect

	opm = om =	 Definite odor; irritation of eyes and nose Throat, eye, and mucous membrane irritation Intense coughing fits Lethal in 1 to 1.5 hours exposure Exposure for 30-60 minutes without effective respiration may cause bronchitis, pulmonary edema or bronchopneumonia
100 p 430 p	= mqq	 May be lethal after 50 minutes of exposure (estimated) Lowest concentration known to cause lethality after 30 minutes of exposure.
1000	ppm =	= May be fatal with a few deep breaths

NOTES TO PHYSICIAN:

symptomatic. Because there is no known antidote Treatment is for chlorine gas inhalation, effective and immediate relief of symptoms is the primary goal. Steroid therapy, if given early, has been reported effective in preventing pulmonary edema.



III. IMPORTANT COMPONENTS

MATERIAL OR COMPONENT CAS NUMBER / NAME 7782505 Chlor ine

EXPOSURE LIMITS PERCENT PEL=0.5 ppm 1.5 mg/m3 TWA VOL STEL= 1 ppm; 3 mg/m3 TLV=1 ppm; 3 mg/m3,TWA STEL=3 ppm; 9 mg/m3 WT

100 100

Listed On(List Legend Below): 01 02 13 16 18

See Section II All components of this product that are required to be on the TSCA Inventory are listed on the inventory. Not listed as carcinogen - IARC, NTP, OSHA

LIST LEGEND

Common Names:

1 SARA EXTR HAZ SUB, SECTION 302 13 PA ENVIROMENTAL HAZ SUBSTANCE 18 NY HAZARDOUS SUBSTANCES 2 SARA TOXIC CHEM, SECTION 313 16 NJ WORKPLACE HAZ SUBSTANCE LST



FIRE AND EXPLOSION DATA

FLASH POINT: N/A

AUTOIGNITION TEMPERATURE: NA

FLAMMABLE LIMITS IN AIR, % BY VOLUME- UPPER: Nonflammable LOWER: Nonflammable

EXTINGUISHING MEDIA:

Use water to keep fire-exposed containers cool. If it is necessary to stop the flow of gas, use water spray to direct escaping gas away from persons effecting the shut-off. Wear full protective clothing. Use extinguishing media as appropriate for surrounding fire.

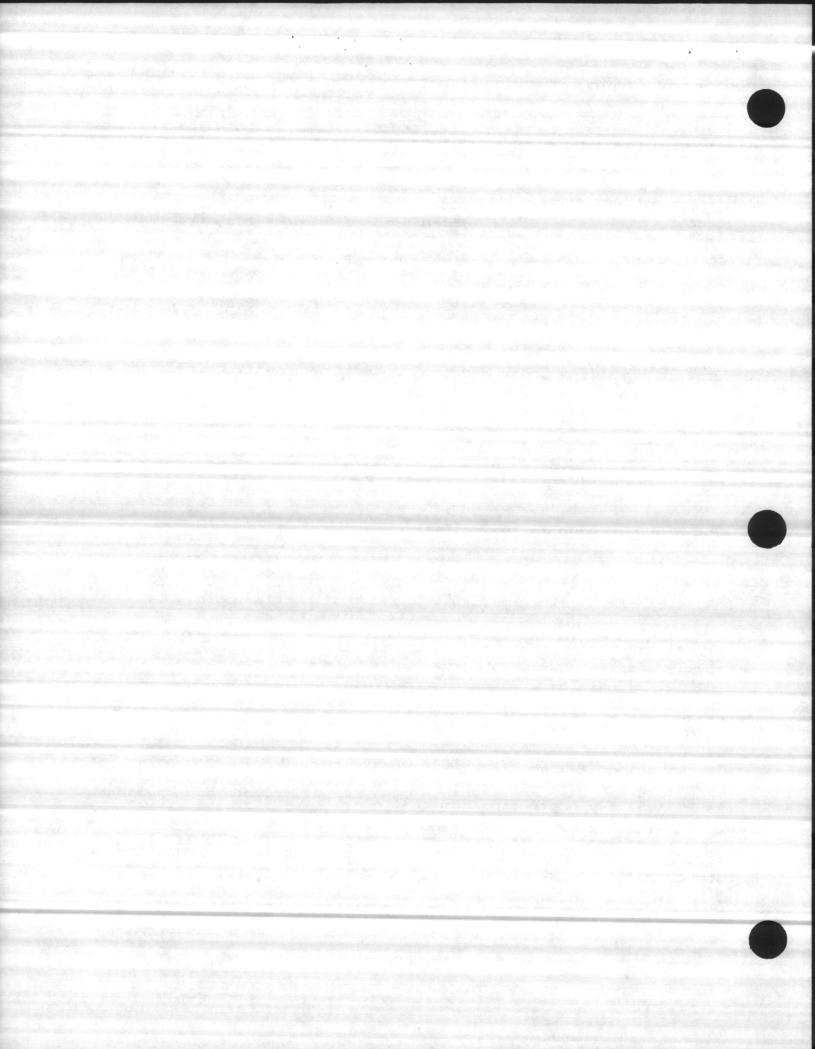
SPECIAL FIRE FIGHTING PROCEDURES:

In case of fire, chlorine containers should be removed from fire zone immediately. Tank cars or barges should be disconnected and pulled out of the danger area. If no chlorine is escaping, water should be applied to cool containers that cannot be moved. All unauthorized persons should be kept at a safe distance. Fire fighters must use self-contained breathing apparatus, eye protection and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARD:

Chlorine gas or liquid, is nonexplosive and nonflammable. However, like oxygen, it is capable of supporting combustion of certain substances. Reacts explosively, or forms explosive compounds, with many chemicals, such as acetylene, turpentine, ether, ammonia gas, hydrogen, and finely divided metals.





OCCIDENTAL CHEMICAL MSDS NUMBER : M4734 PRODUCT NAME: LIQUID CHLORINE

V. SPECIAL PROTECTION

VENTILATION REQUIREMENTS:

Provide general and local exhaust ventilation to meet OSHA limit of 1 ppm. Provide venting for low-lying Ceiling exposure areas. Use closed systems when possible.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY:

Use a NIOSH/MSHA approved respirator following manufacturer's recommendations where gas leaks may occur. Use supplied air respirator in positive pressure mode following ANSI Z117.1-1977 tank and confined space entry. for

EYE:

Face shield and chemical goggles should be worn.

GLOVES :

Impervious gloves should be worn. Natural rubber or latex have Contaminated gloves should be discarded. been used.

OTHER CLOTHING AND EQUIPMENT:

Standard work clothing. Wash contaminated clothing with soap and water and dry before reuse. Emergency shower and eyewash facility should be in close proximity.

I. PHYSICAL DATA

BOILING POINT @ 760 mm Hg: -34°C (-29.3°F)

FREEZING POINT: -101°C (-150°F)

VAPOR PRESSURE: 2748mm Hg @ 0°C

SPECIFIC GRAVITY (H20=1): 1.4 @ 15.4°C

SOLUBILITY IN H20 % BY WT: 0.7 % @ 20°C

VAPOR DENSITY (Air=1): 2.5

APPEARANCE AND ODOR: Amber color liquid. Greenish-yellow gas. Pungent irritating odor.

pH: 0.7% solution has pH 5.5

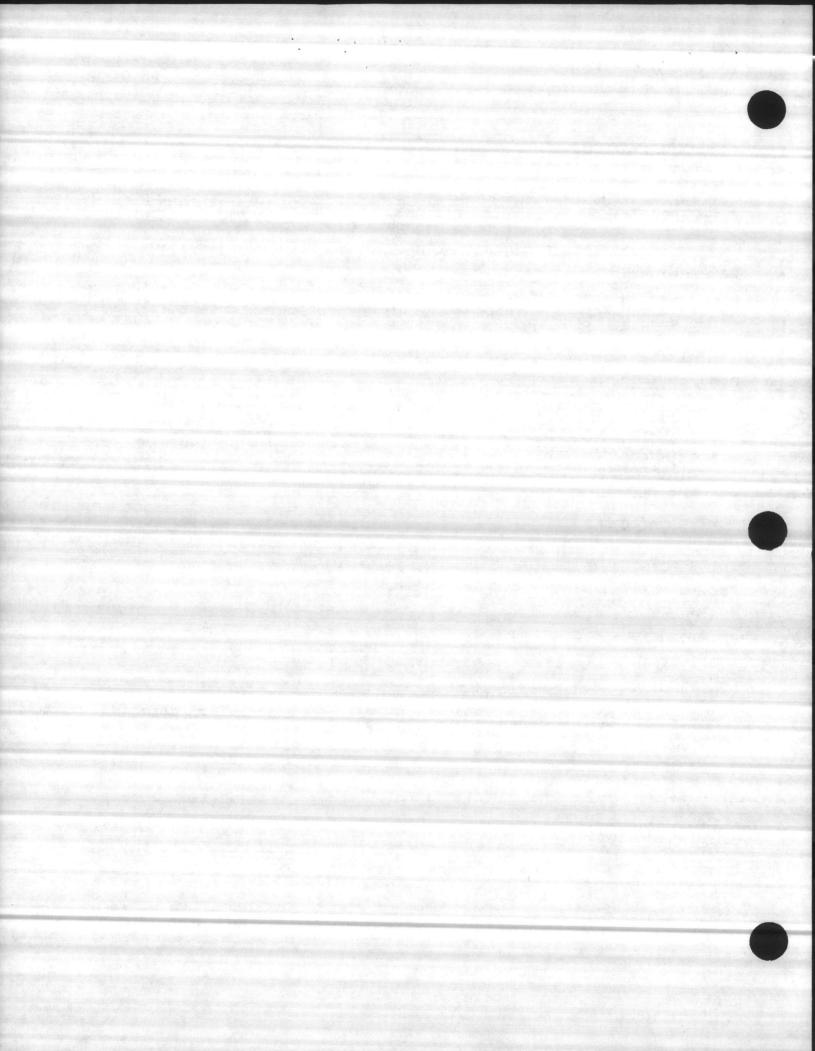
% VOLATILES BY VOL .: 100%

VII. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY:

Chlorine is stable. Avoid the release of chlorine to the atmosphere. Do not place chlorine containers near heat or fire. Never use water on the source of a chlorine leak. Water spray may be used to direct the flow of escaping chlorine gas.





VII. REACTIVITY DATA (Continued)

INCOMPATIBILITY:

combustible Keep away Reducing materials. from agents, materials such as acetylene, turpentine and other hydrocarbons, ammonia, hydrogen, ether, powdered metals, sulfur and aluminum. Reacts with H2S and H2O forming HC1. Combines with CO and SO2 forming phosgene and sulfuryl chloride. Moist chlorine is highly corrosive to most metals. Chlorine reaction to some organic compounds can be explosive. Strong oxidizer.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: None

VIII. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS:



Store chlorine containers in a well ventilated area of low fire potential and away from incompatible materials (acetylene, turpentine, other hydrocarbons, ammonia, hydrogen, ether, turpentine, other hydrocarbons, ammonia, hydrogen, ether, powdered metals, sulfur, aluminum, reducing agents and combustible materials). Keep away from heat and source of ignition. Protect container from weather and physical damage. Follow safety procedures for containers of compressed gases. Provide special training to workers handling chlorine. Regularly test and inspect piping and containment used for chlorine service. Liquid levels should be less than 85% of tank or cylinder capacity.

IX. ENVIRONMENTAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

If a material is spilled or released to the atmosphere, keep up-wind, provide ventilation, wear full protective equipment and shut off supply at source. Exclude non-essential personnel. Contain liquids and prevent discharges to streams or sewer systems; and control or stop the loss of volatile materials to the atmosphere. Large leaks may require environmental consideration and possible evacuation. Do not apply water to leak.

Spills or releases should be reported, if required, to the appropriate local, state and federal agencies.

NEUTRALIZING CHEMICALS:

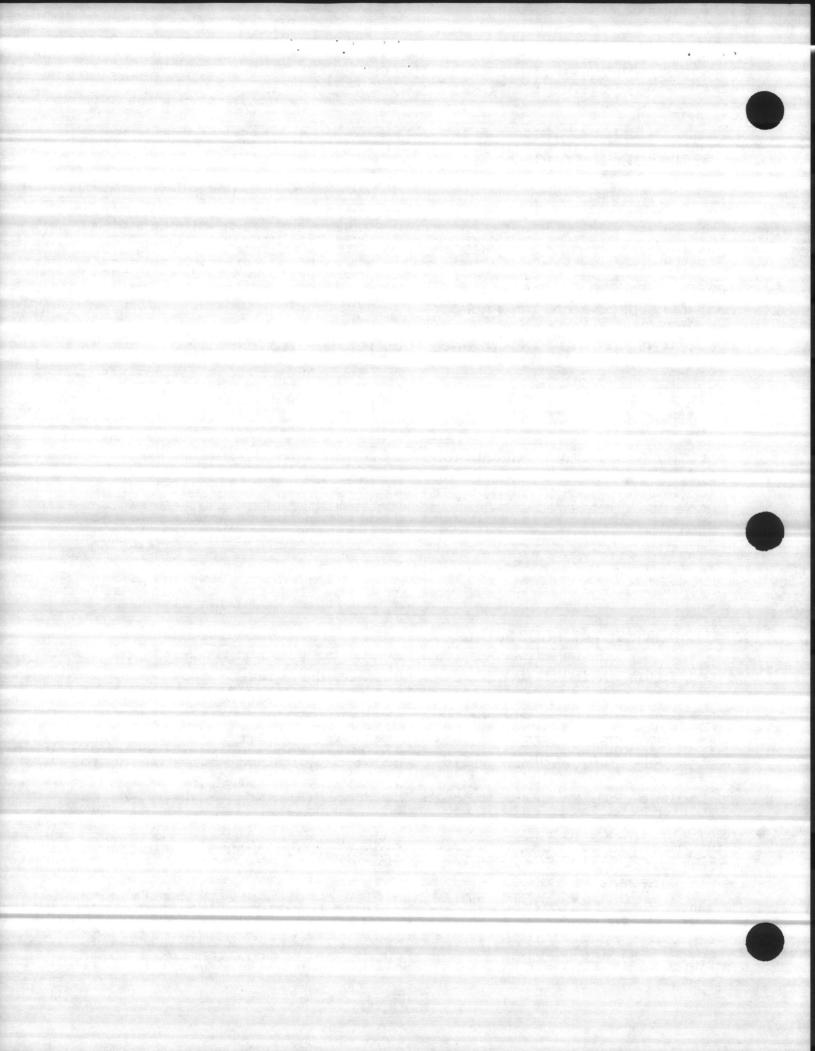
Chlorine can be absorbed into an alkaline solution, i.e., caustic soda (NaOH), caustic potash (KOH), lime, etc.

WASTE DISPOSAL METHOD:

Move leaking container to isolated area. Position to release gas, not liquid. Absorb in alkaline solution of caustic soda, soda ash or hydrated lime.



Dispose in accordance with all federal, state, and local health and pollution regulations. Depending upon the particular situation involved, special equipment may be required. Consult your chlorine supplier.



OCCIDENTAL CHEMICAL MSDS NUMBER: M4734 PODUCT NAME: LIQUID CHLORINE

X. ADDITIONAL INFORMATION

Spills of chlorine of 10 or more pounds must be reported to the National Response center, 1-800-424-8802.

Chlorine is contained on a list as required under Sec 101(14) of CERCLA, which includes substances designated pursuant to SEC 311 of the Clean Water Act, Hazardous Wastes under SEC 3001 of RCRA, Toxic Pollutants under SEC 307 of the Clean Water Act, Hazardous Air Pollutants under Sec 112 of the Clean Air Act, Imminently hazardous Chemicals under Sec 7 of TSCA. Chlorine is designated a hazardous substance by 29 CFR Sec 1910, Subpart Z. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is applicable if chlorine is used as a pesticide or in water or sewer treatment applications.

OSHA Standard 29CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III hazard categories for this product are indicated in Section I. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40 CFR Part 370. Please consult those regulations for details.

This product contains a toxic chemical or chemicals subject to the reporting requirements of SECTION 313 of TITLE III of the SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 and 40 CFR PART 372. (See Section III, List Legend 02)

XI. PREPARATION INFORMATION

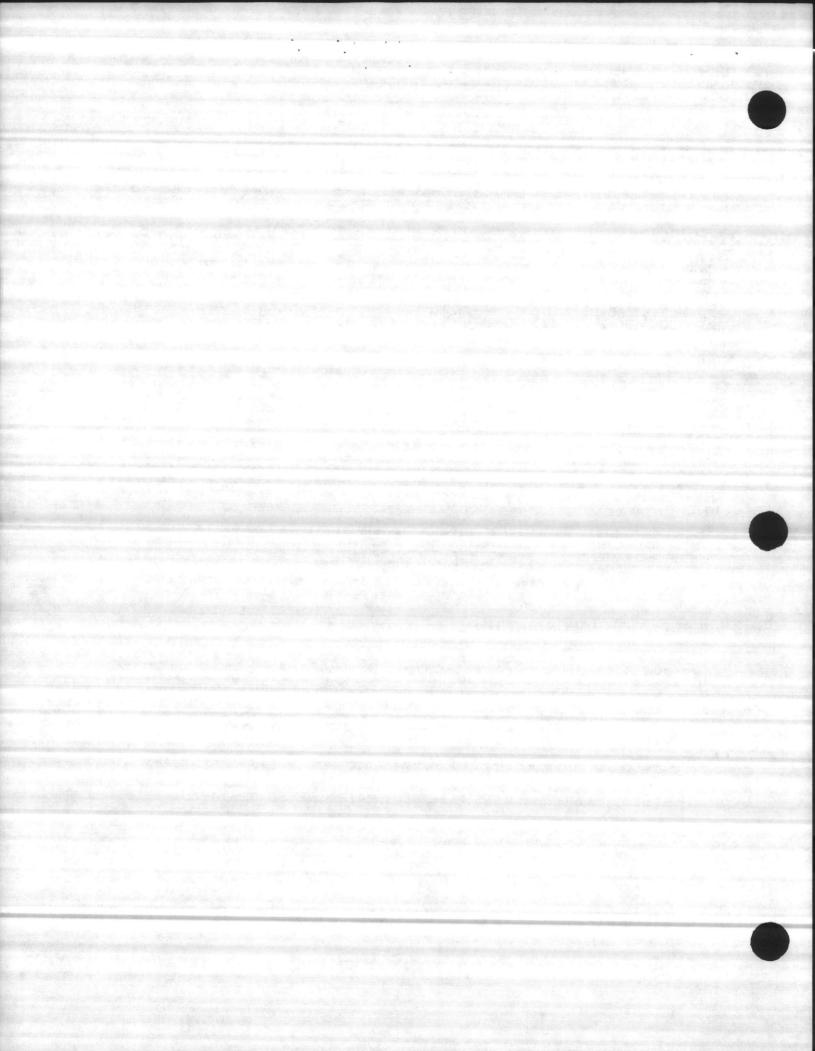
For additional Non-Emergency health, safety, or environmental information telephone (716) 286-3081, or write to: Occidental Chemical Corporation Product Stewardship Department Suite 400 360 Rainbow Boulevard South Niagara Falls, NY 14302

For Emergencies: 24 HOUR EMERGENCY PHONE: (716) 278-7021

This MSDS replaces MSDS Number: M4734 dated 02-14-89.







OCCIDENTAL CHEMICAL RODUCT NAME: LIQUID CHLORINE

WARNING LABEL INFORMATION

. .

EPA approved label 9/87

CHLORINE

LIQUEFIED GAS UNDER PRESSURE NON FLAMMABLE

ACTIVE INGREDIENT:	
Chlorine	99.5%
INERT INGREDIENTS:	0.5%

DANGER POISON

HAZARDOUS LIQUID AND GAS UNDER PRESSURE MAY CAUSE CHEMICAL PNEUMONIA AND EVEN DEATH IN HIGH CONCENTRATIONS MAY CAUSE SEVERE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT LIQUID MAY BURN EYES AND SKIN CAN REACT EXPLOSIVELY WITH ORGANIC PRODUCTS

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

May be fatal if inhaled. Do not breath air containing this gas. Do not get in eyes, on skin, on clothing. Corrosive to skin and mucous membranes in presence of moisture. Do not handle or use until manufacturer's Material Safety Data Sheet has been read and understood. Wear face shield, goggles and rubber gloves when handling. Use NIOSH/MSHA approved respirator and local exhaust ventilation where vapor may be generated. eyes

ENVIRONMENTAL HAZARDS

The product is toxic to fish. Do not discharge into lakes, streams, ponds or public waters unless in accordance with an NPDES permit. For guidance, contact regional Environmental Protection Agency office.

CHEMICAL-PHYSICAL HAZARDS

Chlorine is a non-flammable gas, liquefied, under pressure. Do not heat container. Avoid contact with organic products to prevent explosive reaction. Corrosive to most metals in presence of moisture.

STATEMENT OF PRACTICAL TREATMENT (FIRST AID)

FOR EYES:

Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids apart to ensure flushing of entire eye surface. Washing eyes within several seconds after exposure is essential to achieve maximum effectiveness. SEEK MEDICAL ATTENTION IMMEDIATELY.

SKIN:

Treat for inhalation first. Remove contaminated clothing under safety shower. Flush exposed skin with water. Wash with soap and water. If irritation is present after washing, GET MEDICAL ATTENTION.

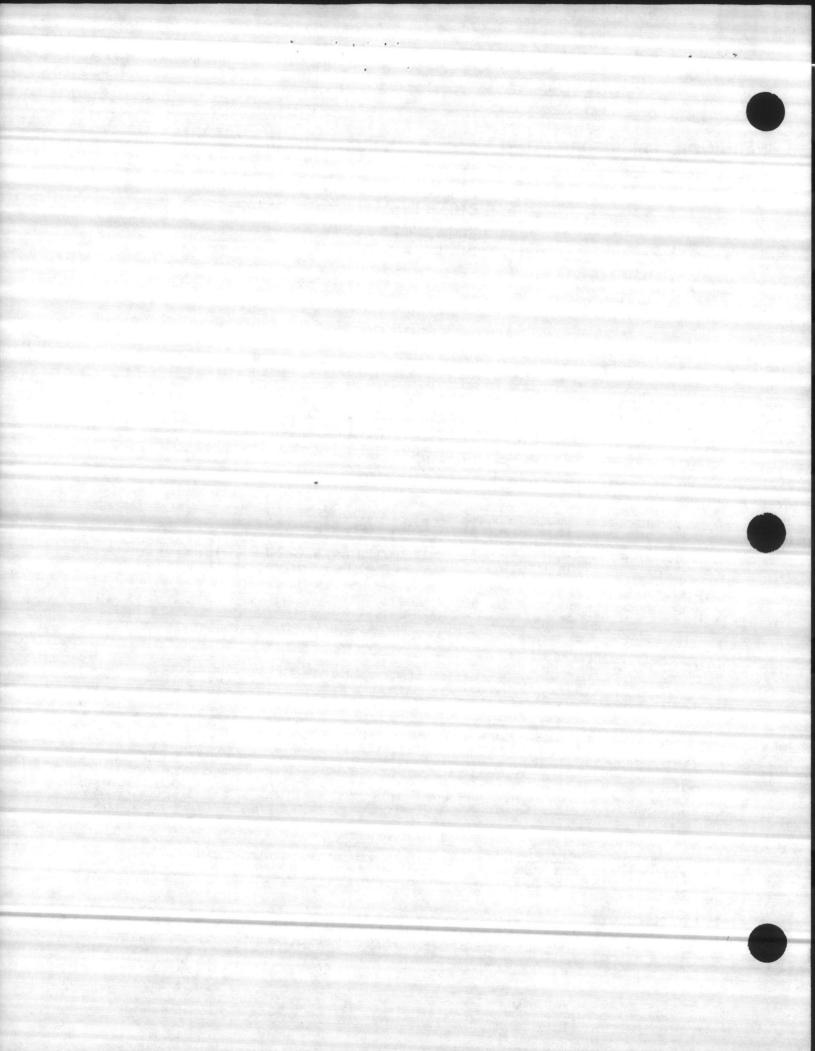
INHALATION:

Remove to fresh air. Administer oxygen until victim breathes easily. Keep warm and at rest. In mild cases, give milk to relieve irritation. DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION AS SOON AS POSSIBLE.

INGESTION:

NEVER give anything by mouth to an unconscious person. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. (If available, give several glasses of milk.) If vomiting occurs spontaneously, keep airway clear and give more water. SEEK MEDICAL ATTENTION IMMEDIATELY.





OCCIDENTAL CHEMICAL MSDS NUMBER: M4734 PRODUCT NAME : LIQUID CHLORINE

WARNING LABEL INFORMATION (continued)

DIRECTIONS FOR USE GENERAL CLASSIFICATION

Federal law to use this product in a manner It is a violation of inconsistent with the labeling.

USE AS A DISINFECTANT, by experienced personnel only, in municipal water supplies, sewage and waste management plants, in accordance with applicable local, state and federal regulations.

Use in manufacturing processes, by trained personnel only, in production of bleach, plastics, chlorinated solvents, refrigerants, etc. and intermediates for products containing no chlorine. Proper training in safety and use of protective equipment are essential. Well designed and maintained handling and processing facilities are required.

STORAGE AND DISPOSAL

HANDLING AND STORAGE:

NDLING AND STURAGE: Provide special training to workers handling chlorine. Do not place chlorine containers near heat or fire. Handling and storage of chlorine containers should be in accordance with all local, state, and federal regulations. Regularly test and inspect piping and containment used for chlorine service. Liquid levels should be 85% of tank or cylinder capacity.

IN THE EVENT OF FIRE:

Remove chlorine containers from fire zone immediately. Use water to keep containers cool which cannot be moved, but do not use water on the source of a chlorine leak. Use water spray to direct chlorine away from persons effecting shut-off. Wear full protective clothing and self-contained breathing apparatus.

DISPOSAL:

Vent waste chlorine gas into scrubber using dilute alkali solution. Dispose of resultant hypochlorate in accordance with local, state and federal regulations. Return empty chlorine tank cars and cargo tanks containing residual gas and/or liquid to supplier in compliance with applicable DOT regulations.

FOR ASSISTANCE IN CHEMICAL EMERGENCY, CALL CHEMTREC 800-424-9300

Spills of 10 pounds or more must be reported to the NATIONAL RESPONSE CENTER 1-800-424-8802

UN 1017 HMIS HAZARD RATING 3 HEALTH FLAMMABILITY Θ REACTIVITY 0

CAS No. 7782-50-5 NFPA FIRE HAZARD RATING HEALTH з Θ FLAMMABILITY REACTIVITY Θ

APPROXIMATE NET CONTENTS: 55 or 90 TONS EPA REG. NO. 935-8

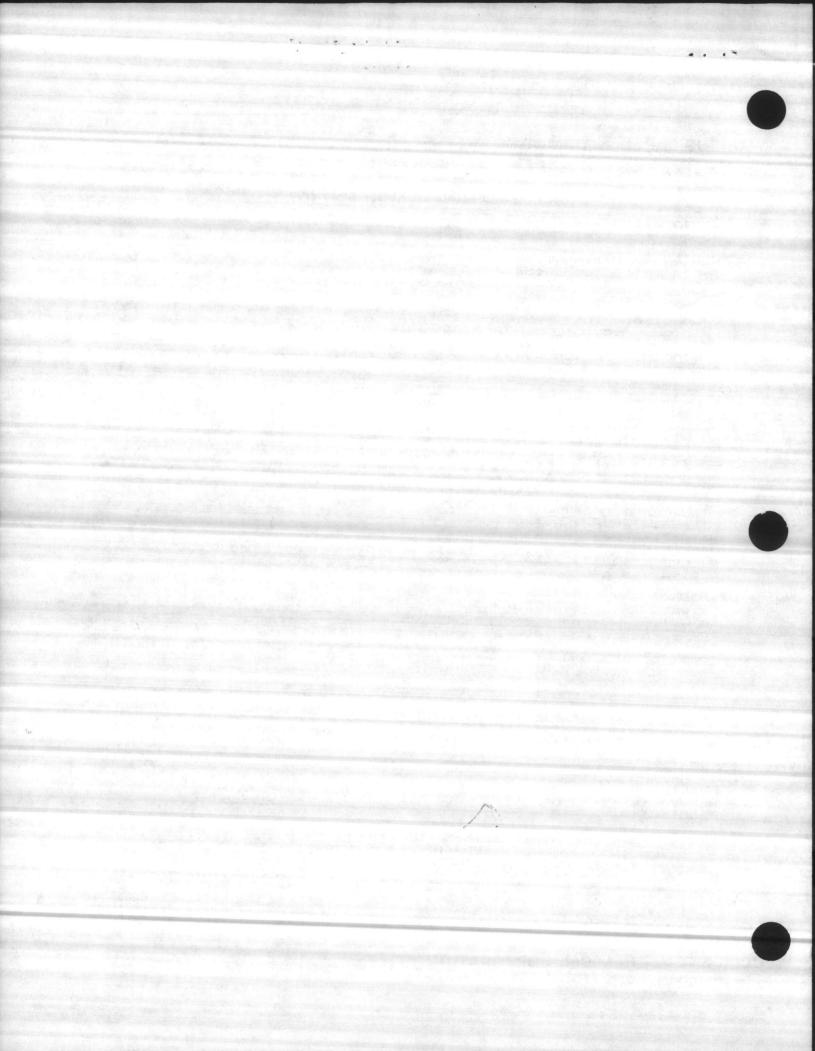
EPA EST. NO. AL-001 EPA EST. NO. AL-002 EPA EST. NO. DE-001 EPA EST. NO. LA-001 EPA EST. NO. LA-002

EST.	NO.	NY-001
EST.	NO.	TX-001
EST.	NO.	TX-002
EST.	NO.	TX-003
EST.	NO.	WA-001
	EST. EST. EST. EST. EST.	EST. NO. EST. NO. EST. NO.

OCCIDENTAL CHEMICAL CORPORATION OxyChem

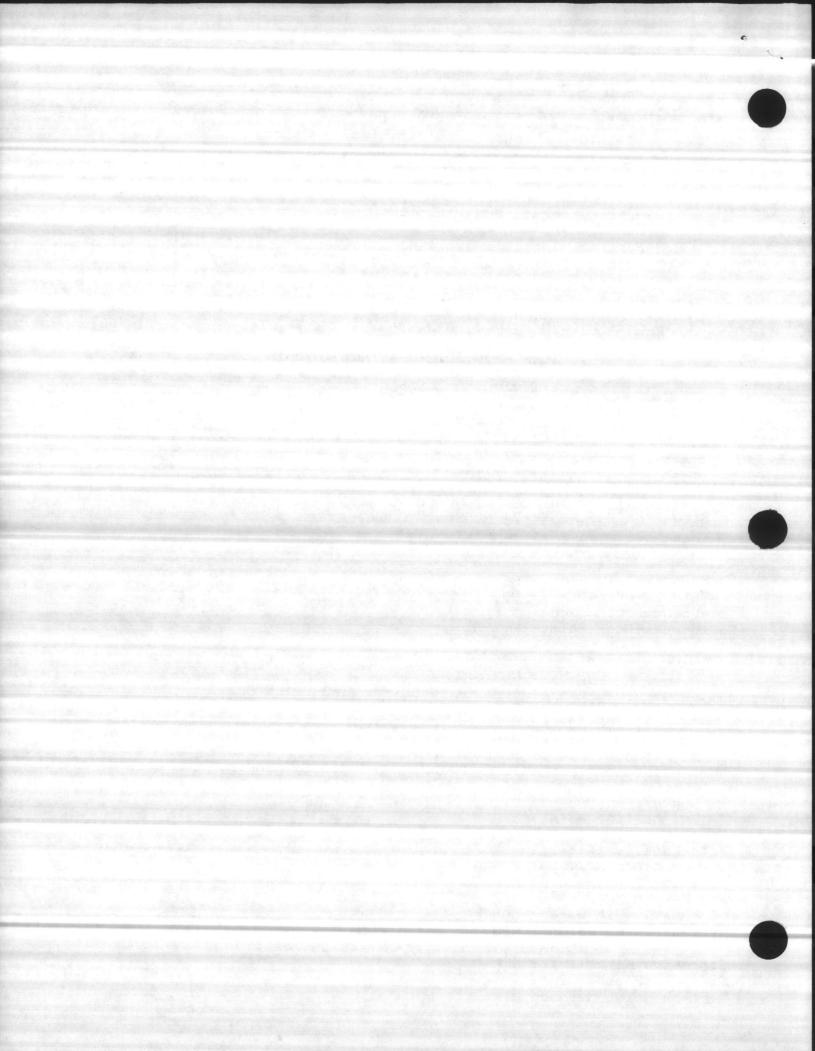
Electrochemicals & Specialty Products Dallas, Texas 75380





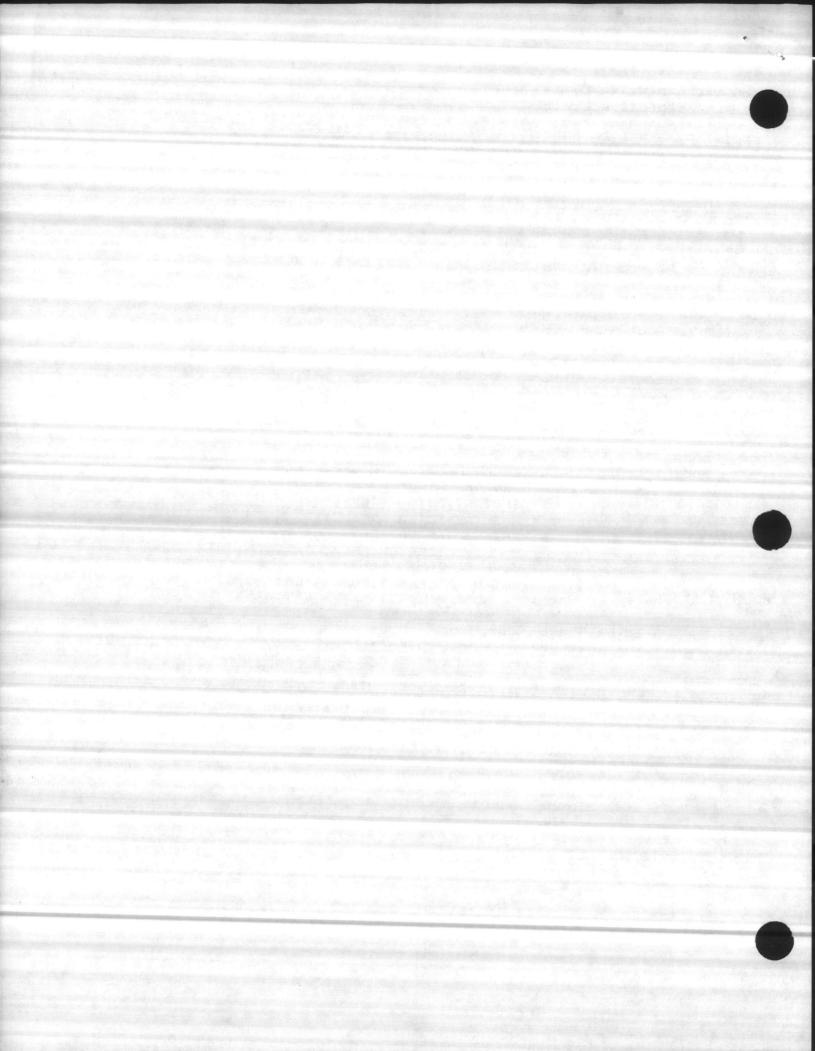
DoD Hazardous Materials Information System DoD 6050.5-LR AS OF SEPT 11, 1989 For U.S. Government Use Only

Stock Number: 00F008385 FSC: 6840 Manufacturers CAGE: 56883 Part No. Indicator: A Part Number/Trade Name: WESCODYNE Safety Focal Point: F Record No. for this Safety Entry: 001 Total Safety Entries, This No.: 001 Date MSDS Prepared: 03JAN86 Safety Data Review Date: 21JUN89 Item Name: DISINFECTANT, LIQUID Manufacturer Name: PENETONE CORPORATION Street: 74 HUDSON AVENUE P.O. Box: N/K City: TENAFLY State: NJ Zip Code: 07670 Emergency Phone No.: (201) 567-3000 Information Phone No.: (201) 567-3000 Company: PENETONE CORPORATION Street or P.O. Box: 74 HUDSON AVENUE City: TENAFLY State: NJ Zip Code: 07670 MSDS Serial Number: BGVFD Proprietary: NO Ingredient Action Code: A Ingredient Focal Point: F Ingredient Sequence Number: 01 NIDSH (RTECS) No.: 1000314NH CAS NO .: NON-HAZ Ingredient: NON-HAZARDOUS FOR INGREDIENTS Percent: N/K OSHA PEL: N/R ACGIH TLV: N/R Other Recommended Limit: N/R Appearance and Odor: BLACK BROWN FREE FLOWING LIQUID: MILD ODOR Boiling Point: 212F Melting Point: N/R Vapor Pressure(MM Hg/70 F): N/R Vapor Density (Air=1): N/R Specific Gravity: 1.030 Decomposition Temperature: N/R Evap. Rate & Reference: N/K Solubility in Water: COMPLETE % Volatiles by Volume: NEG. DH: 1.7% Corrosion Rate (IPY): N/R Flash Point: NONE Flash Point Method: N/R



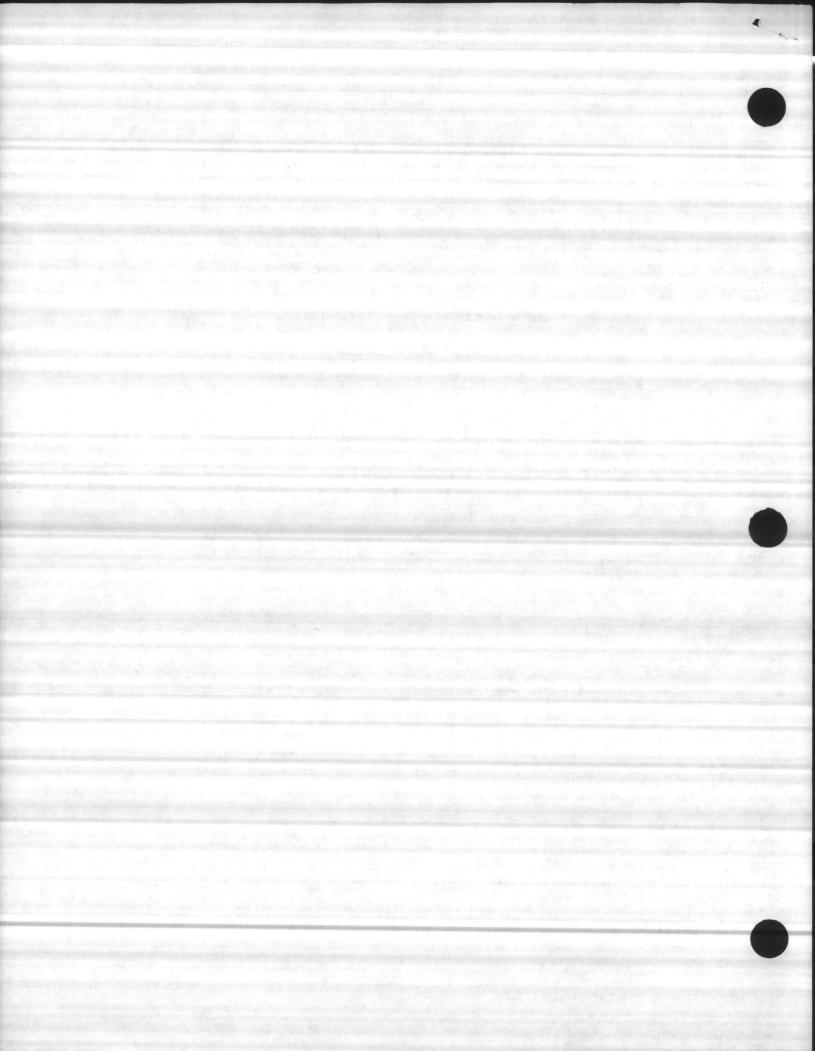
Lower Explosive Limit:	N/R N/R	
Extinguishing Media:	N/R	
Special Fire Fgting Proc:		
Unusual Fire & Expl. Hzrds:	N/K	
Stability:	YES	
Cond. to Avoid(Stability): Materials to Avoid:	N/R N/R	
Hazardous Decomp. Products:	N/R	
Hazardous Poly. Occur:	NO	
Conditions to Avoid(Poly):	N/R	
LD50-LC50 - Mixture:	NZK	
Route of Entry-Inhalation: Route of Entry - Skin:	ND YES	
Route of Entry - Ingestion:	NO	
Health Hzrds-Acute&Chronic:	SKIN: DRYNESS TO MILD IRRITATION.	
an had been been set and the set of the set of the	EYES: IRRITANT.	
Carcinogenity - NTP:		
Carcinogenity - IARC:	NO NO	
Carcinogenity - OSHA: Expl. of Carcinogenity:	NONE	
Sgns and Sym of Dexposure:	SKIN: DRYNESS TO IRRITATION.	
and the second se	EYES: IRRITANT.	
Med. Conds. Aggr. by Exp:		
Emerg. and FirstAld Procs:	EYES: FLUSH WITH WATER FOR SEVERAL MINUTES. SEEK PHYSICIAN	
	IF IRRITATION PERSISTS. SKIN:	
A Start Start Start Start Start Start Start	WASH AFFECTED AREA WITH SOAP &	
	WATER. INHALATION: MOVE TO A	
	WELL VENTILATED AREA. INGESTION: GIVE COPIOUS AMOUNTS OF MILK OR	
	WATER. SEEK MEDICAL ATTENTION.	
if Matl. Relsd or Sped:	FLUSH DOWN DRAIN WITH WATER OR	
	USE ABSORBENTS.	
Neutralizing Agent:		
waste Disposal Method:	TO SEWER OR WASTE TREATMENT FACILITY (IF LOCAL ORDINANCES	
	ARE RESTRICTIVE).	
Handg and Strg Precautions:	AVOID STORAGE <32F. IF PRODUCT	
	DOES FREEZE, THAW & ROLL	
	CONTAINER. PRODUCT WILL REVERT	
Other Precautions:	TO NORMAL CONSISTENCY.	
Respiratory Protection:		
	: NONE REQUIRED	
Protective Gloves:		
Eye Protection:		
Other Protective Equipment: Work Hygienic Practices:		
Sup. Safe and Health Data:		





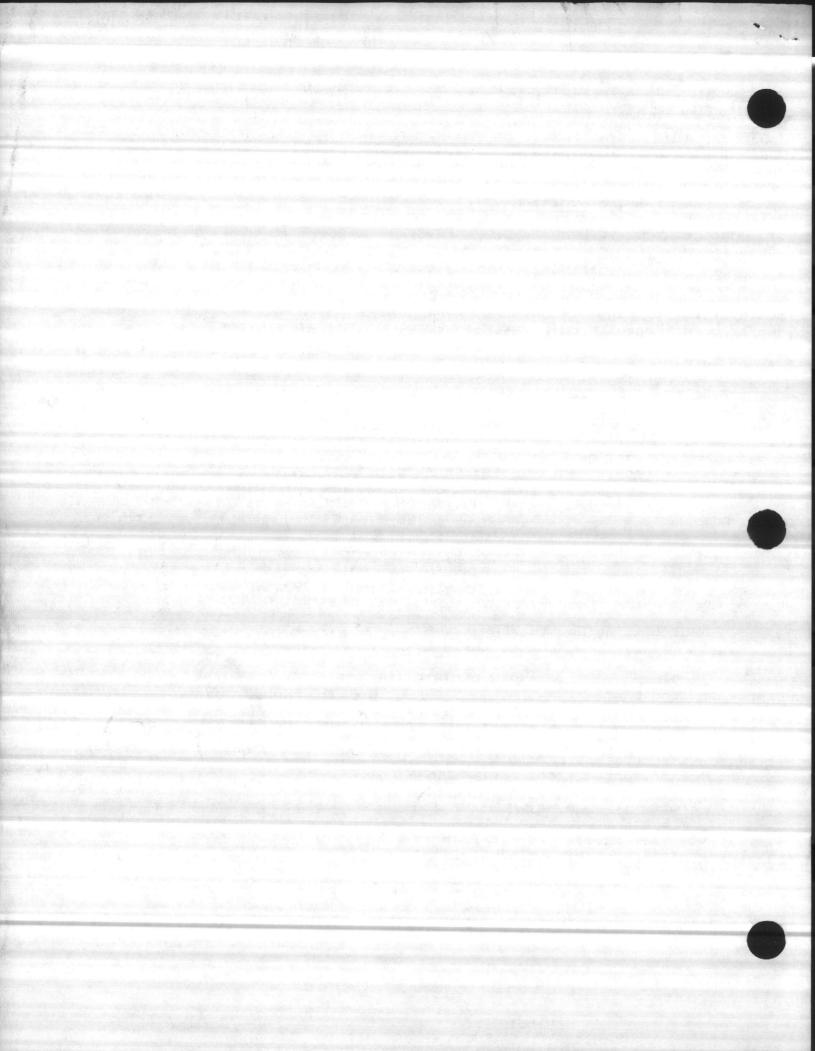
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Stock Number: 00F008385 FSC: 6840 Manufacturers CAGE: 56883 Part No. Indicator: A Part Number/Trade Name: WESCODYNE Safety Focal Point: F Record No. for this Safety Entry: 001 Total Safety Entries, This No.: 001 Date MSDS Prepared: 03JAN86 Safety Data Review Date: 21JUN89 Item Name: DISINFECTANT, LIQUID Manufacturer Name: PENETONE CORPORATION Street: 74 HUDSON AVENUE P.O. Box: N/K City: TENAFLY State: NJ Zip Code: 07670 Emergency Phone No.: (201) 567-3000 Information Phone No.: (201) 567-3000 Company: PENETONE CORPORATION Street or P.O. Box: 74 HUDSON AVENUE City: TENAFLY State: NJ Zip Code: 07670 MSDS Serial Number: BGVFD Proprietary: NO Ingredient Action Code: A' Ingredient Focal Point: F Ingredient Sequence Number: 01 NIDSH (RTECS) No.: 1000314NH CAS NO .: NON-HAZ Ingredient: NON-HAZARDOUS FOR INGREDIENTS Percent: N/K OSHA PEL: N/R ACGIH TLV: N/R Other Recommended Limit: N/R Appearance and Odor: BLACK BROWN FREE FLOWING LIQUID; MILD ODOR Boiling Point: 212F Melting Point: N/R Vapor Pressure(MM Hg/70 F): N/R Vapor Density (Air=1): N/R Specific Gravity: 1.030 Decomposition Temperature: N/R Evap. Rate & Reference: N/K Solubility in Water: COMPLETE % Volatiles by Volume: NEG. pH: 1.7% Corrosion Rate (IPY): N/R Flash Point: NONE Flash Point Method: N/R



Lower Explosive Limit:	N/R N/R
	N/R
Special Fire Fgting Proc:	COOL DRUMS WITH WATER.
	N/K YES
Cond. to Avoid(Stability): Materials to Avoid:	N/R N/R
Hazardous Decomp. Products: Hazardous Poly. Occur:	N/R NO
Conditions to Avoid(Poly): LD50-LC50 - Mixture:	N/R N/K
Route of Entry-Inhalation:	NO
Route of Entry - Skin: Route of Entry - Ingestion:	YES
Health Hzrds-Acute&Chronic:	SKIN: DRYNESS TO MILD IRRITATION. EYES: IRRITANT.
Carcinogenity - NTP:	ND
Carcinogenity - IARC:	NO
Carcinogenity - OSHA:	NO
Expl. of Carcinogenity:	NONE SKIN: DRYNESS TO IRRITATION.
Sgns and Sym of Oexposure:	EYES: IRRITANT.
Med. Conds. Aggr. by Exp:	
Emerg. and FirstAid Procs:	EYES: FLUSH WITH WATER FOR SEVERAL MINUTES. SEEK PHYSICIAN
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	GIVE COPIOUS AMOUNTS OF MILK OR
	WATER. SEEK MEDICAL ATTENTION.
	FLUSH DOWN DRAIN WITH WATER OR USE ABSORBENTS.
Neutralizing Agent:	
Waste Disposal Method:	TO SEWER OR WASTE TREATMENT
	FACILITY (IF LOCAL ORDINANCES ARE RESTRICTIVE).
Handg and Strg Precautions:	
	DOES FREEZE, THAW & ROLL
	CONTAINER. PRODUCT WILL REVERT TO NORMAL CONSISTENCY.
Other Precautions:	
Respiratory Protection:	
Ventilation:	
Protective Gloves:	
Eye Protection:	GOGGLES EYE BATH
Other Protective Equipment: Work Hygienic Practices:	
Sup. Safe and Health Data:	
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Sup. Sate and Health Data:



DOD HAZARDOUS MATERIALS INFORMATION SYSTEM

NIIN: 00N003840 FSC: 6810 Manufacturers CAGE: 7A345 Part No. Indicator: A Part Number/Trade Name: ALUM

Safety Focal Point: N Record No. for this Safety Entry: 001 Total Safety Entries, This No .: 001 Date MSDS Prepared: PRE-HCS Safety Data Review Date: 28AUG84 Item Name: ALUMINUM SULFATE

---[Manufacturer]---

Name: DELTA CHEMICAL CORPORATION Emergency Phone No.: 800-424-9300

-[MSDS Preparer]---

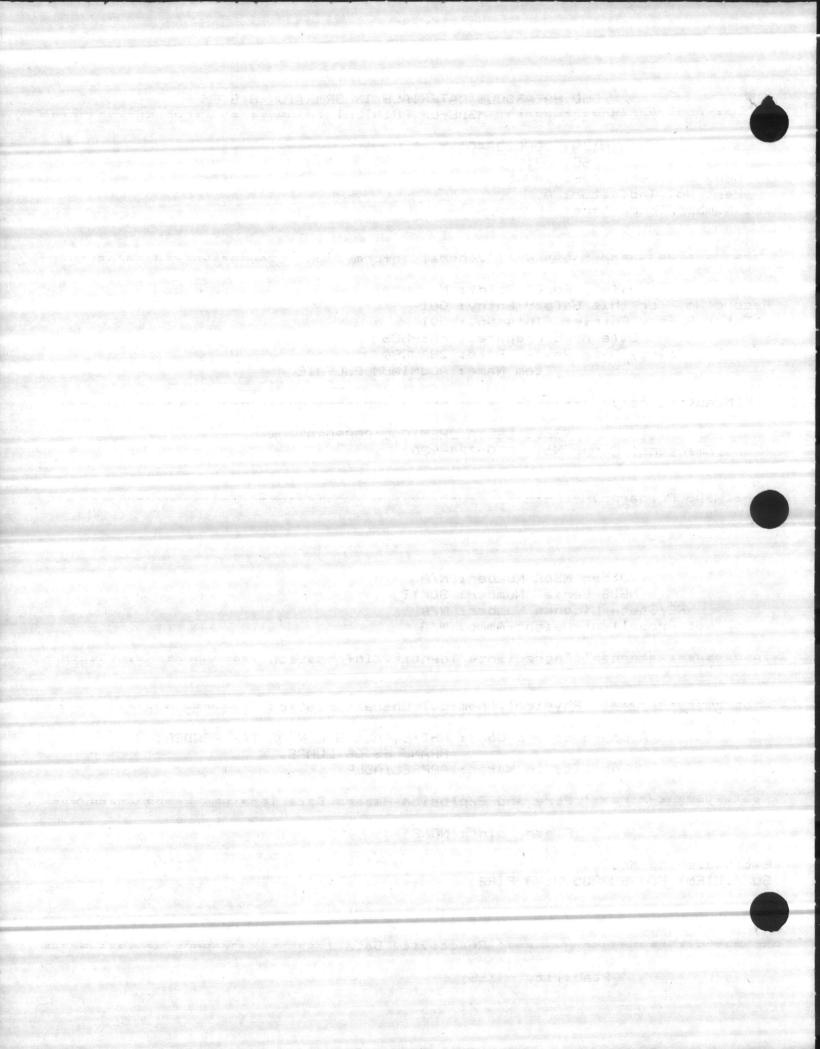
Other MSDS Number: N/A MSDS Serial Number: BCKYP NRC/State License Number: N/A Net Propellent Weight-Ammo: N/A

Appearance and Odor: WHITE, PALE GREEN OR TAN POWDER, GRANULES OR LUMPS. Solubility in Water: APPRECIABLE

Flash Point: NONE

[Extinguishing Media] SUFFICIENT FOR SURROUNDING FIRE.

Stability - YES



ardous Polymerization Occur]

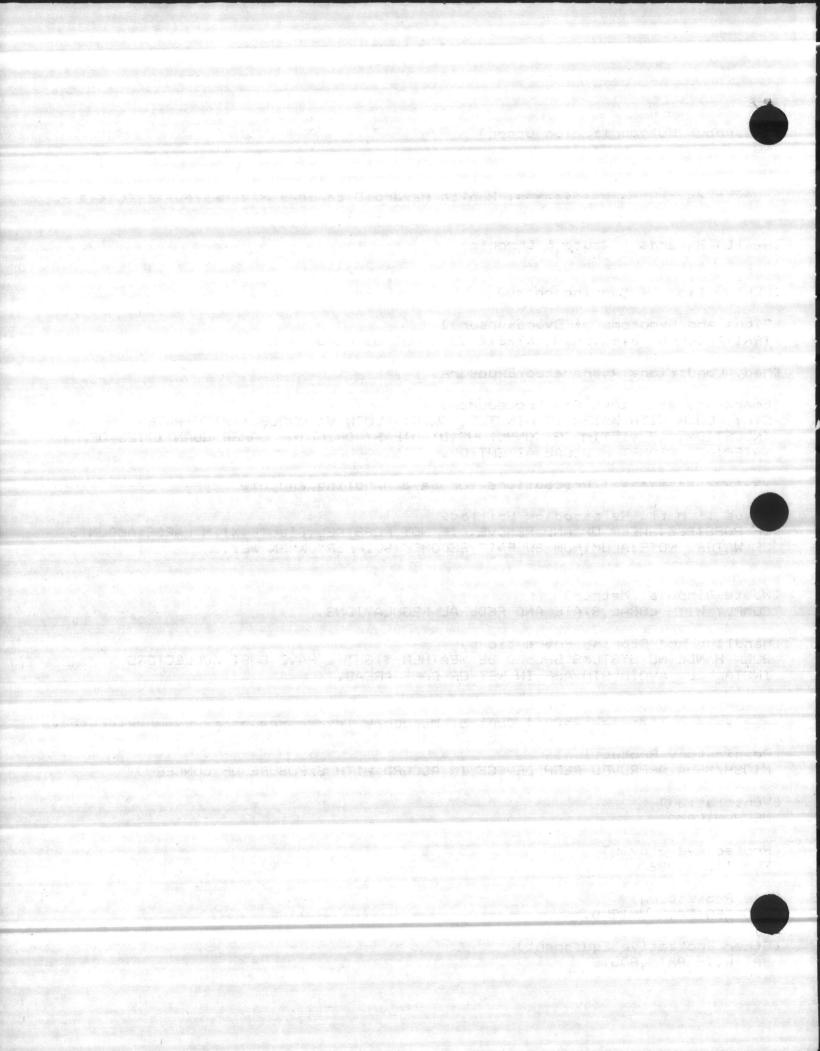
[Health Hazards - Acute & Chronic] [Explanation of Carcinogenity] [Signs and Symptoms of Overexposure] IRRITATION OF EYES, SKIN, INTESTINES & MUCOUS MEMBRANES. [Med. Conditions Aggravated/Exposure] [Emergency and First Aid Procedures] EYE: FLUSH WITH WATER 15 MINUTES. SKIN: FLUSH VIGOROUSLY-WITH WATER. INGESTION: IF VICTIM IS CONSCIOUS, DILUTE BY DRINKING LARGE QUANTITIES OF WATER; GET PROMPT MEDICAL ATTENTION.)alta eps if Matl. Released or Spilled] POSSIBLE, SWEEP UP AND REMOVE. IF NOT POSSIBEL, DILUTE WITH LARGE AMOUNTS OF WATER. NOTE: ALUMINUM SULFATE BECOMES SLIPPERY WHEN WET. [Waste Disposa] Method] COMPLY WITH LOCAL, STATE AND FEDERAL REGULATIONS. [Handling and Storing Precautions] BULK HANDLING SYSTEMS SHOULD BE WEATHER TIGHT & HAVE DUST COLLECTORS INSTALLED. AVOID STORAGE IN WET OR DAMP AREAS. [Respiratory Protection] NIOSH/MSHA APPROVED RESP DEVICE IN ACCORD WITH EXPOSURE OF CONCERN.

[Ventilation] MECHANICAL

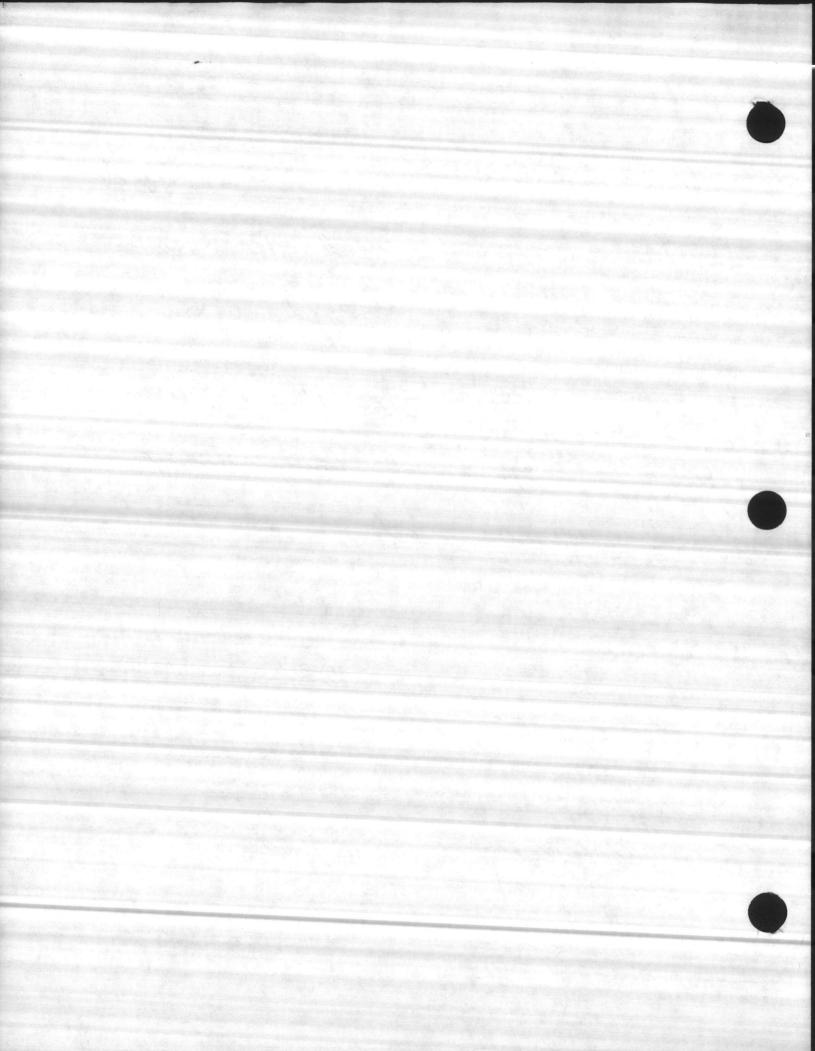
[Protective Gloves] PLASTIC/RUBBER

> e Protection] BGLES/FACE SHIELD.

(Other Protective Equipment) HAT WITH BRIM, BOOTS



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[Health Hazards - Acute & Chronic]

[Explanation of Carcinogenity]

[Signs and Symptoms of Overexposure] IRRITATION OF EYES, SKIN, INTESTINES & MUCOUS MEMBRANES.

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[Waste Disposal Method] COMPLY WITH LOCAL, STATE AND FEDERAL REGULATIONS.

[Handling and Storing Precautions] BULK HANDLING SYSTEMS SHOULD BE WEATHER TIGHT & HAVE DUST COLLECTORS INSTALLED. AVOID STORAGE IN WET OR DAMP AREAS.

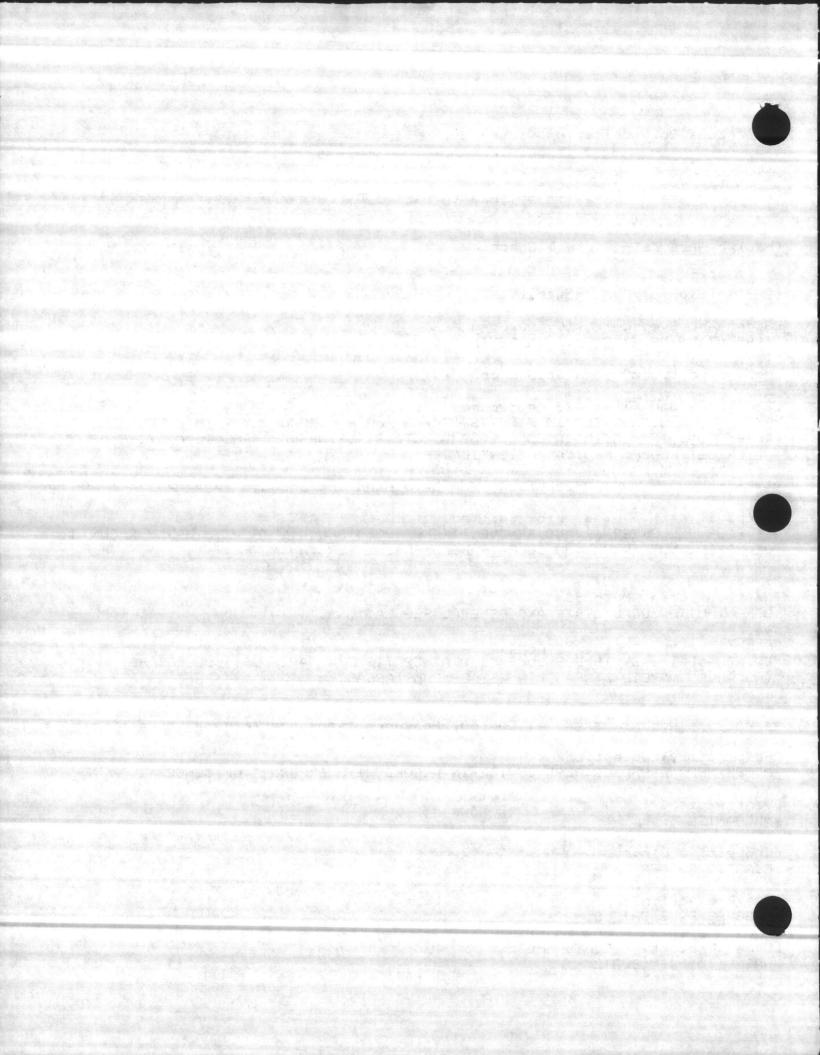
[Respiratory Protection] NIOSH/MSHA APPROVED RESP DEVICE IN ACCORD WITH EXPOSURE OF CONCERN.

[Ventilation] MECHANICAL

[Protective Gloves] PLASTIC/RUBBER

GGLES/FACE SHIELD.

[Other Protective Equipment] HAT WITH BRIM,BOOTS



DOD HAZARDOUS MATERIALS INFORMATION SYSTEM

NIIN: OONOO3840 FSC: 6810 Manufacturers CAGE: 7A345 Part No. Indicator: A Part Number/Trade Name: ALUM

Safety Focal Point: N Record No. for this Safety Entry: 001 Total Safety Entries, This No.: 001 Date MSDS Prepared: PRE-HCS Safety Data Review Date: 28AUG84 Item Name: ALUMINUM SULFATE

---[Manufacturer]-----

Name: DELTA CHEMICAL CORPORATION Emergency Phone No.: 800-424-9300

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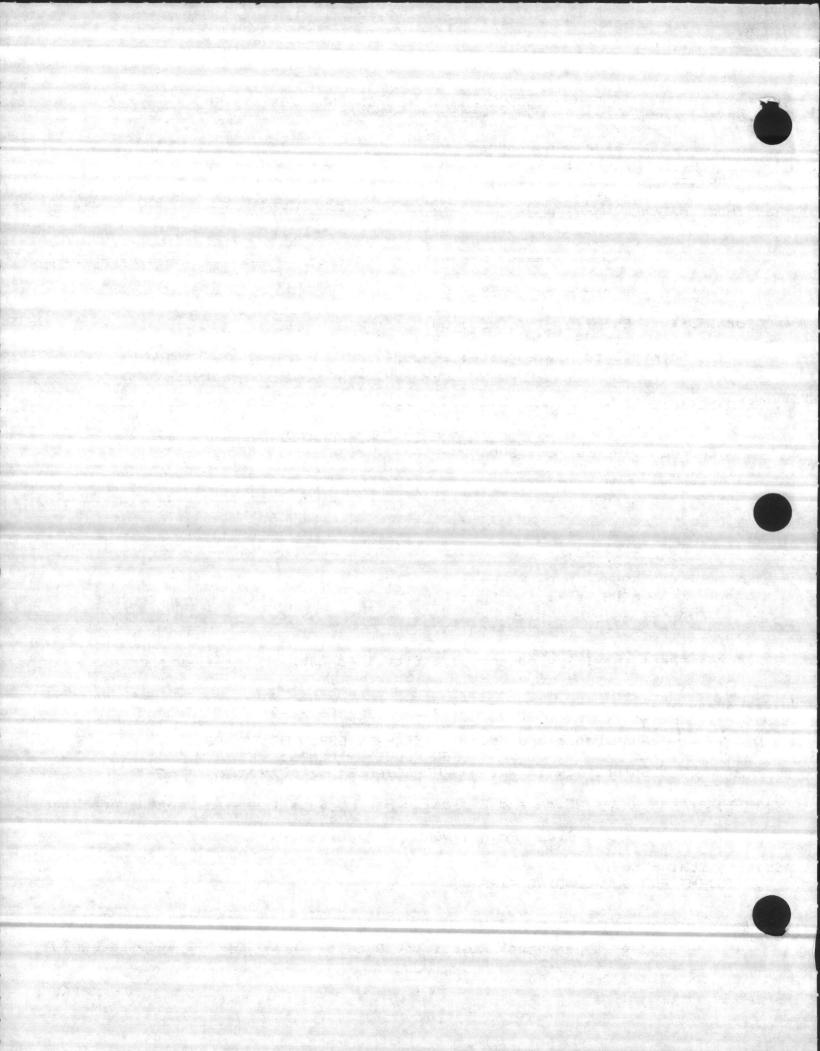
Other MSDS Number: N/A MSDS Serial Number: BCKYP NRC/State License Number: N/A Net Propellent Weight-Ammo: N/A

Appearance and Odor: WHITE, PALE GREEN OR TAN POWDER, GRANULES OR LUMPS. Solubility in Water: APPRECIABLE

Flash Point: NONE

[Extinguishing Media] SUFFICIENT FOR SURROUNDING FIRE.

Stability - YES





DATA

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The information contained herein is based on data available at the time of preparation of this data sheet and which The Gildden Company believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. The Gildden Company shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and users of this metaind.

Complies with OSHA hazard communication standard 29CFR1910.1200.

	4501 Series, 553 HMIS Ratin	
I	Health	2
	Flammability	2
	Reactivity	0

GLID-GUARD[®] Alkyd Industrial Enamel No. 4501 Series; GLID-GUARD[®] Silicone Alkýd Enamel Nos. 5539, 5540

FIRE & EXPLOSION HAZARD DATA

DOT Proper Shipping Name: Paint, UN 1263

Hazard Class: Combustible Liquid

Extinguishing Media: Dry chemical or foam

Unusual Fire and Explosion Hazards: Closed containers may explode when exposed to extreme heat or fire. Vapors can form explosive mixtures in air at elevated temperatures. May decompose under fire conditions emitting irritant and/or toxic gases.

Special Fire Fighting Procedures: Water may be used to cool and protect exposed containers.

HEALTH HAZARD DATA

Primary Route(s) of Exposure: Inhalation Skin Contact

Effects of Overexposure:

- Inhalation: Irritation of respiratory tract. Prolonged inhalation may lead to fatigue, drowsiness, dizziness and/or lightheadedness, headache, uncoordination, nausea, vomiting, central nervous system depression, anesthetic effect or narcosis.
- Skin Contact: Irritation of skin. Prolonged or repeated contact can cause dermatitis, defatting.
- Eye Contact: Irritation of eyes. Prolonged or repeated contact can cause blurred vision, redness of eyes, tearing of eyes, severe eye irritation.
- Ingestion: Amounts ingested incidental to consumer and industrial handling are not likely to cause injury; however, ingestion of larger amounts may cause lung inflammation and damage due to aspiration of material into lungs.
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Emergency and First Aid Procedures:

- Inhalation: Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty.
- Skin Contact: Wash off quickly with plenty of water, then soap and water; remove contaminated clothing. Wash contaminated clothing before reuse.
- Eye Contact: Flush immediately with large amounts of water, especially under lids, for at least 15 minutes. Obtain emergency medical treatment.

Ingestion: If swallowed, obtain medical treatment immediately.

Medical Conditions Aggravated By Exposure: This product is not expected to aggravate existing medical conditions; however, ingredients contained in this product have been reported to aggravate preexisting eye, skin, respiratory disorders, lung disorders, asthma-like conditions.

Supplemental Health Information: Exposure to materials in this product have been associated with possible blood abnormalities, liver damage, kidney damage. Excessive inhalation of solvent vapors under uncontrolled conditions may lead to unconsciousness, respiratory failure, asphyxiation, and even death.

REACTIVITY DATA

Stability: Stable

Incompatibility: Oxidizers Acids Bases Amines

Conditions to Avoid: Elevated temperatures Contact with oxidizing agent

Hazardous Decomposition Products: Carbon Monoxide Carbon Dioxide

Hazardous Polymerization: Will not occur

SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Comply with all applicable health and environmental regulations.

Eliminate all sources of ignition.

Ventilate area.

Spills may be collected with non-combustible absorbent materials.

Waste Disposal: Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: Control environmental concentrations below applicable standards. Where respiratory protection is required, use only NIOSH/MSHA approved respirators in accordance with OSHA Standard 29 CFR 1910.134.

Ventilation: Provide dilution ventilation or local exhaust to prevent build-up of vapors.

Personal Protective Equipment: Eye Wash

Safety Shower Safety Glasses or Goggles Impervious Gloves

SPECIAL PRECAUTIONS

Handling and Storage: Store below 100°F. Keep away from heat, sparks, and open flame.

Other Precautions: Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. If sanding is done, wear a dust mask to avoid breathing of sanding dust. Ground equipment when transferring to prevent accumulation of static charge.

4501 SERIES & 5539, 5540

C5

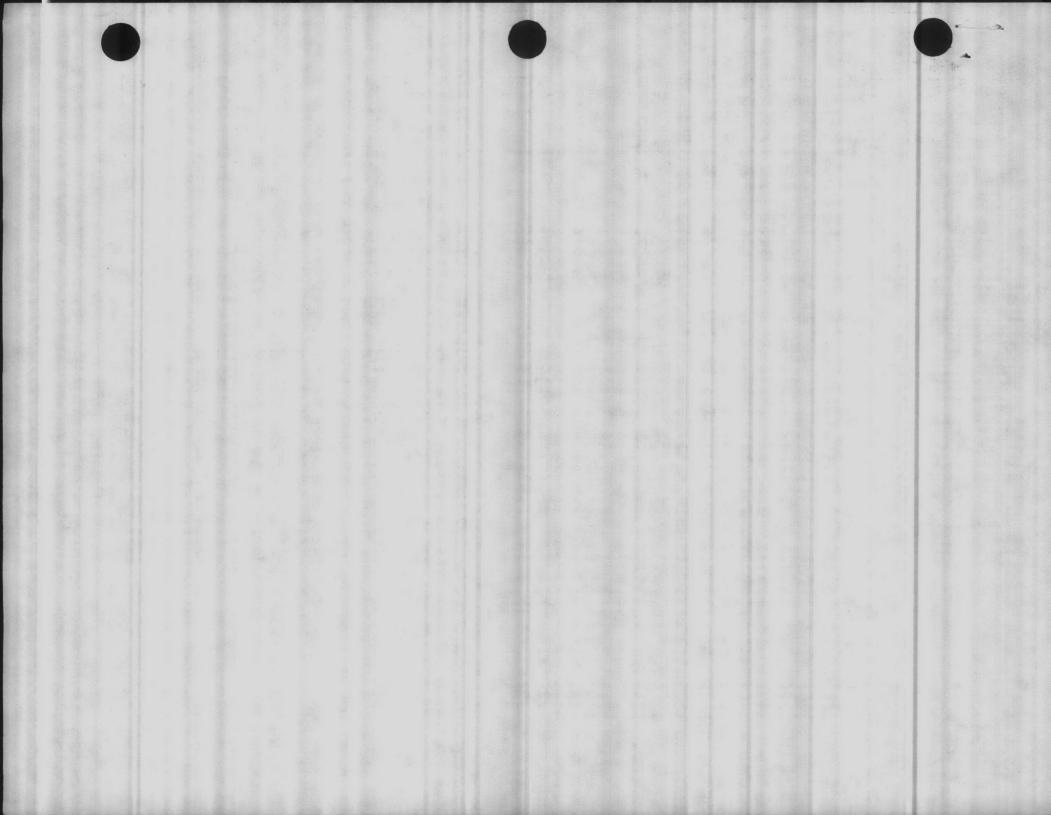
NTERIOR/EXTERIOR ALKYD

Prepared November, 1987 THE GLIDDEN COMPANY

925 Euclid Avenue Cleveland, Ohio 44115

Emergency Telephone No. (216) 826-5566



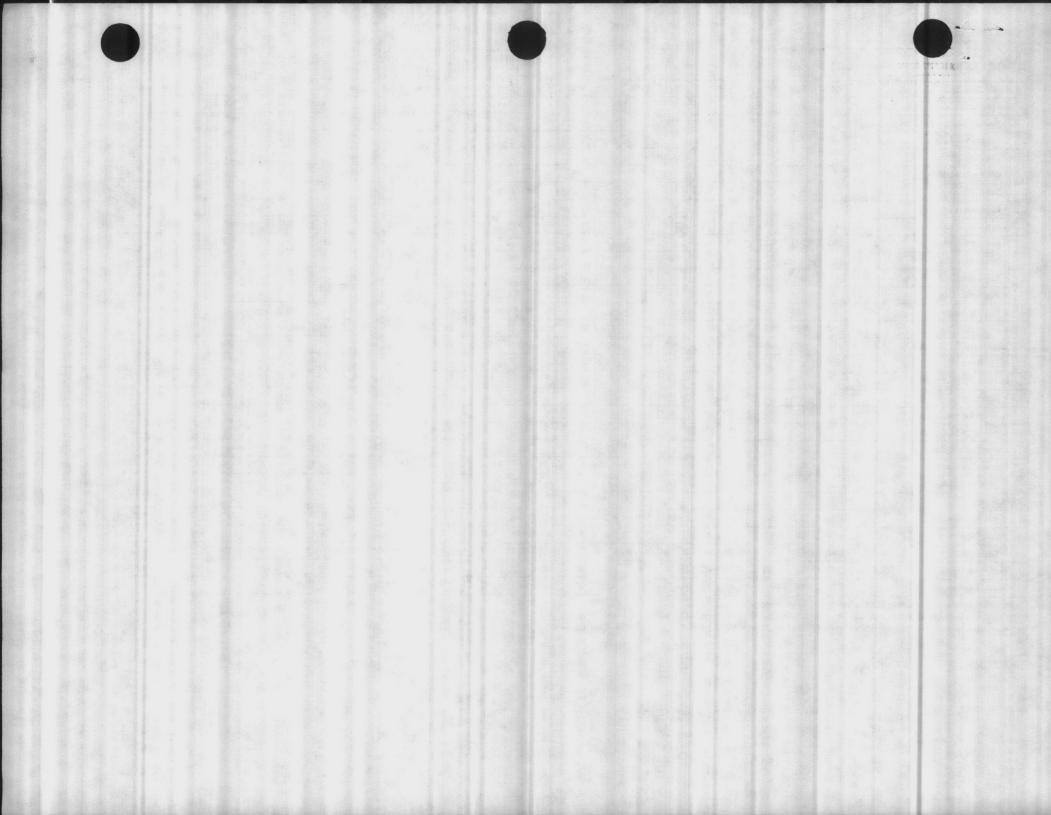




4501 SERIES, 5539, 5540

PRODUCT CODE NO.	4581+	4582+	4583+	4510	4528	4525	4537	4548	4548	4550	4551	4554	4560	4562	4564	4578	4573	4575	4588	4587		5539	5540
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• Iron Oxido Silicato			-		in viewang -		-								100	18-23			21 . MA				
• Calcium Carbonato			10-15						49		an Maryana	•				20-25			•				
• Carbon Black		in the second	-		g Arapita	4	1		1.5		1.5												
• Ethylbenzene			1.1.20	s	é general	1.5			-								•						
• Hydrocarbon Solvent	8-13	8-13	10-15	6-11	1.5	30-35	8-13	12-17	16-21	6-11	6-11	6-11	10-15		6-11		1.5	8-13	10-15	8-13		32-37	38-4
• Hydrocarbon Solvent	20-25	22-27	24-29	34-39	46-51		34-39	28-33	22.27	28-33	40-45	40-45	28-33	46-51	36-41	28-33	46-51	30-35	34-39	28-33			
• Organophilic Clay					1. J. K.	1-5					1-5												
• Maleic Modified Resin Ester		1.2.1	1.5	1-5	1-5		1.5	1.5	1-5			1.5	1.5		1.5	and the second			1.5	1.5			
• Organophilic Clay					1-5		1-5		1-5			1-5	1.5	1-5			1.5		1.5				
• Titanium Diexide	18-23	12-17		2.7		26-31		4-9	1-5	22-27		1.5	6-11	6-11	2.7	and the second		- Andrews				26-31	6-11
Alkyd Resin	18-23	20-25	20-25	24-29	34-39		26-31	14-19	22-27	18-23	28-33	26-31	16-21	34-39	26-31	16-21	36-41	18-23	24-29	22.27			
Alkyd Resin	12.17	12.17	14-19	10-15		32.37	10-15	18-23	10-15	10-15	10-15	8-13	14-19		10-15			10-15	12-17	12.17			
Hansa Yellew	1.1			2.7		•		4.9				1.5	1.5										
Ferri-Ferro Cyanide Complex														1	2.7	a desta							
• Metal Oxide				and and		191 - 19	1.5		1-5								61						
m-Nitro-p-Toluidine/b. naphthol				•	6-11	-30-			•		a.												
🛶 • Yellow Iron Oxide					N'EG		4.9	1.5	1-5								1.5						
• Basic Zinc Molybdate								1.10								4.9							
Silicone Alkyd Resin	1				• E • •													and a				34-39	44-49
• Magnesium Silicate Hydrate		S. 827 . 2																				1.5	
Physical Data	1 1 1 1			19			1.1	*									•	•					
% Volatile by Vol.	54.4	55.2	55.9	57.8	60.4	49.9	58.8	57.2	57.6	56.1	60.2	60.9	57.3	63.0	59.9	55.3	62.Q	57.7·	59.7	56.6		51.4	53.1
Wt. per Gallon, Ibs.	9.1	8.6	8.3	8.0	7.7	9.9	8.1	8.2	8.3	9.3	7.6	7.7	8.2	8.0	7.8	11.6	7.9	8.9	7.7	8.5		9.9	8.5
Boiling Range, "F.	308-374	308-374	308-374	308-374	308-374	273-386	308-374	308-374	308-374	308-374	308-374	308-374	308-374	316-360	308-374	316-360	308-374	308-374	308-374	308-374		308-374	308-3
Flash Point, "F.	105	105	105	102	105	105	100	106	105	105	102	109	106	106	100 .	100	104	105	105	105		105	105
Lower Explosive Limit	0.7	0.7	0.7	0.7	0.7	.0.7	0.7 ·	0.7-	0.7	0.7	0.7	0.7	0.7	1.0	0.7	1.0	. 0.7	0.7	0.7	0.7		0.7	0.7

Hezerdous Ingredients as defined by OSHA, ACGIN or The Glidden Company.
 **If Dramatone is used to tint, ethylene glycel will be present. Refer to MSDS on Dramatone No. 1750 Series for details.
 *Will contain lead when tinted with Industrial Colorants Y-105, 108, 107. Refer to MSDS on Industrial Colorants—Lead Containing for details.



1 () () () () () () () () () ()		ACGI	N-TLV	OSHA-PEL	L. Seeders of	
CHEMICAL NAME/COMMON NAME	CAS. NO.	SHOUR TWA	STEL	8-HOUR TWA	LEL	V.P.
Aliphetic Hydrocarbon Bland/Aliphatic Hydrocarbon Bland	64742-47-8	100 ppm§	Not Established	500 ppm§	1.0	1 @ 68¶F.
lydrocarbon Solvent/Aromatic Solvent Blend	64742-95-6	100 ppm§	Not Established	500 ppm§	1.0	10.0 @ 100°F.
ren Oxide Silicate/Brown Iron Oxide	- 1309-37-1	0.1 mg/m²‡	Not Established	(10 mg/m³)/(%SiO ₂ + 2)‡	N.A.	N.A.
alcium Carbonato/Limestone	1317-65-3	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
arbon Black/Carbon Black	1333-86-4	3.5 mg/m ³	Not Established	3.5 mg/m³	N.A.	N.A.
hylbenzene/Ethylbenzene	100-41-4	100 ppm	125 ppm	100 ppm	1.0	7.1 @ 68¶.
rdrocarbon Solvent/Mineral Spirits	64742-47-8	100 ppm§	Not Established	500 ppm§	0.7	2.0 @ 68ºF.
drocarbon Solvent/Mineral Spirits	64742-88-7	100 ppm§	Not Established	500 ppm§	1.0	5@77¶.
ganophilic Clay/Organophilic Clay	71011-27-3	10 mg/m ³	Not Established	15 mg/m³	N.A.	N.A.
leic Modified Resin Ester/Pentaerythritol Ester	Supplier Confidential	Not Established	Not Established	Not Established	N.A.	- N.A.
anophilic Clay/Organophilic Clay	68911-87-5	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
anium Diexide/Titanium Diexide	1317-80-2	10mg/m³	Not Established	15 mg/m³	N.A.	N.A.
ryd Resin/Alkyd Resin	68459-17-6	Not Established	Not Established	Not Established	N.A.	N.A.
kyd Resin/Alkyd Resin	67700-92-9	Not Established	Not Established	Not Established	N.A.	N.A.
nsa Yellow/Hansa Yellow	13515-40-7	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
erri-Ferre Cyanide Complex/Iron Blue	Supplier Confidential	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
stal Oxide/Red Iron Oxide	1309-37-1	10 mg/m²	Not Established	15 mg/m³	N.A.	N.A.
Nitre-p-Toluidine/b-naphthel/Toluidine Red	2425-85-6	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
llew Iron Oxide/Yellow Iron Oxide	51274-00-1	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
sic Zinc Molybdate/Basic Zinc Molybdate	13767-32-3	10 mg/m³	Not Established	15 mg/m³	N.A.	N.A.
icone Alkyd Resin/Silicone Alkyd Resin	Supplier Confidential	Not Established	Not Established	Not Established	N.A.	N.A.
agnesium Silicate, Hydrate/Talc	14807-96-6	2 mg/m²‡	Not Established	20 mppcf	N.A.	N.A.

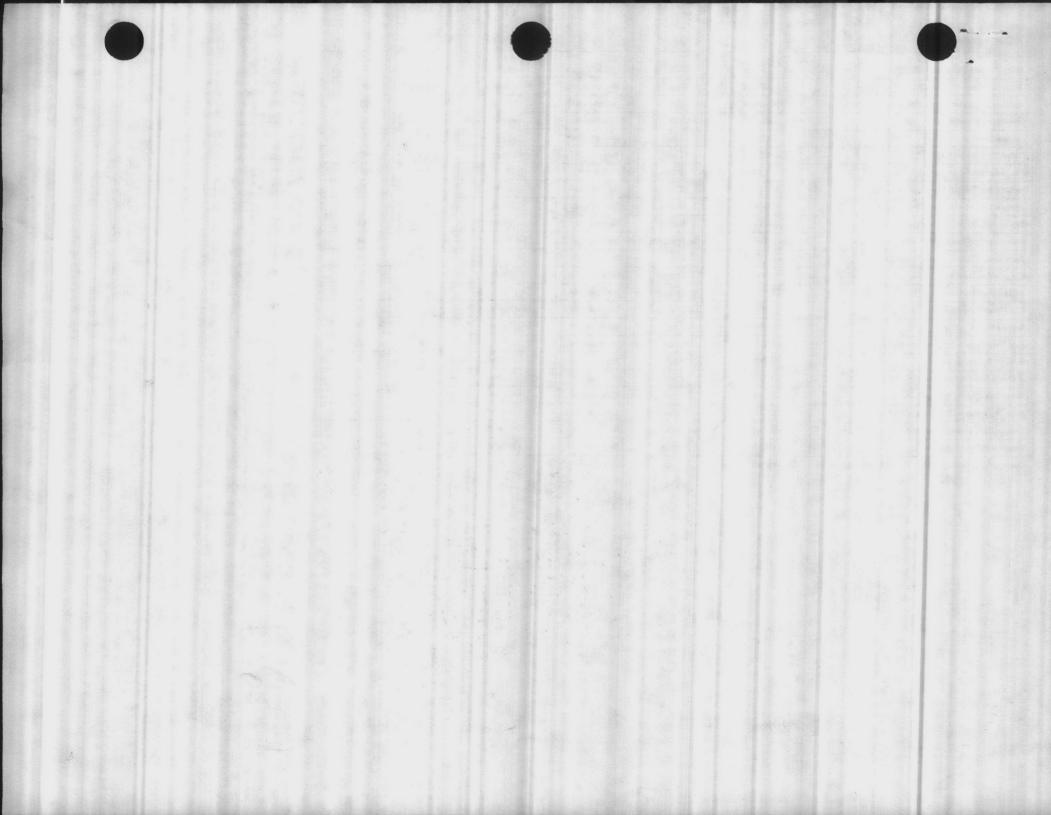
LEL—The lower explosive limit is the lowest concentration (% of volatiles in air) that will pro-duce a flash of fire when an ignition source is present. V.P.—Vapor pressure in millimeters of mercury at the indicated temperature. mpper-Millions of particles per cubic foot. N.A.-Not applicable. mg/m³-Milligrams per cubic meter. ppm—Parts per million. ‡Respirable Dust

Carcinogenicity Listed By: NTP? Ne IARC Monograph? No 'OSHA Regulated? No

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No. 33115





PRODUCT DATA

(919) 734-1073

Mechanical & Environmental Control, Inc.

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108 Cedar Street Dudley, N. C. 28333

MEC FLOC-CLP998013

Cationic Polymer

Municipal and Industrial Wastewater Treatment

MEC FLOC-CLP998013 is a highly cationic high molecular weight, liquid polyquaternary amine. It is effective as a dewatering aid for industrial and municipal waste sludges It is also used for filtration, flotation, emulsion breaking and clarification processes. This product is approved for use in paper which comes in contact with food, according to guidelines set forth by the Food & Drug Administration under 21 CFR 176170. The product is approved by EPA for potable water at dosages up to 20 ppm.

Recommended Solution Preparation and Feeding

MEC FLOC-CLP998013 should be fed using a corrosion resistant, positive displacement pump and should be prepared at solution concentration of 0.5% or less. Feed the diluted product at a point that insures complete mixing. In some cases the product can be fed neat.

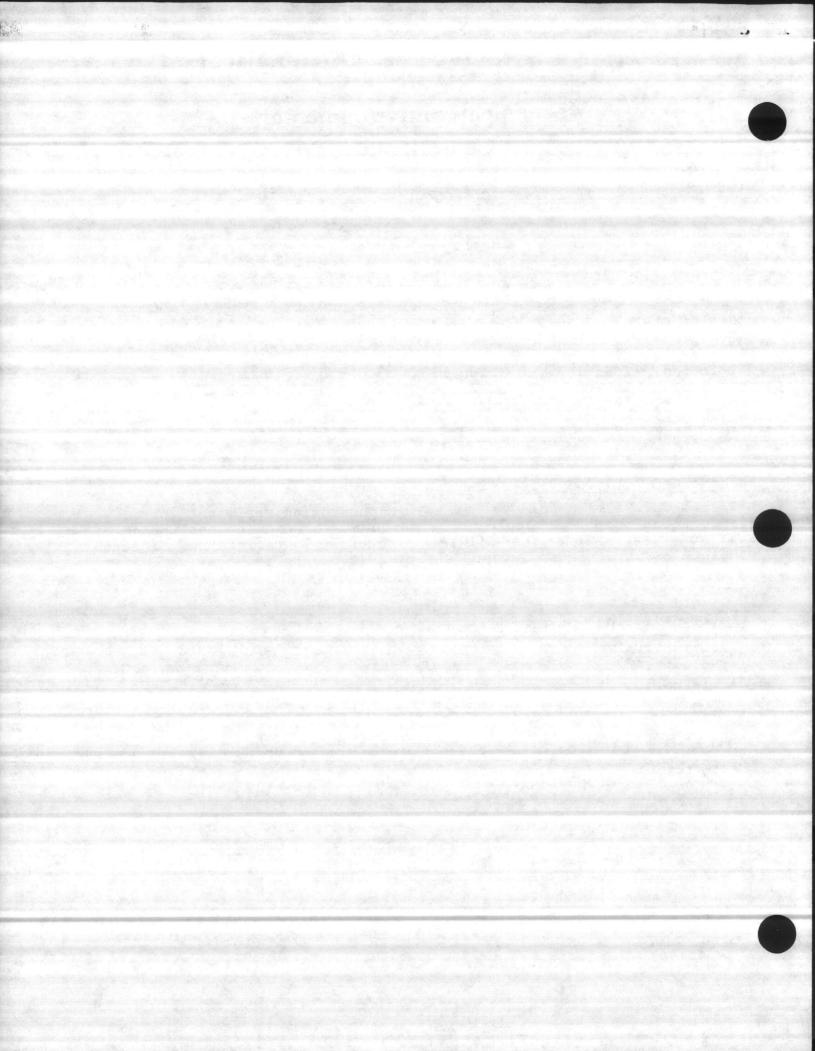
Applications: -Gravity settling -Filtration -Centrifugation -Air Flotation -Clarification

Properties:

A table of some important properties of MEC FLOC-CLP998013 are as follows:

Appearance	Amber liquid
Specific Gravity	
at 25°C	1.13 - 1.16
Product Viscosity	
at 25°C (CP)	5000 - 9000
Freezing Point	0°F
pH	4-0
Flash Point	200°F

(over)





MEC FLOC-CLP998013 is effective in producing a fast settling, easily filtering sludge. The product is highly versatile and can function satisfactorily in low turbidity water. Chlorinated make up water does not adversely affect the performance of MEC FLOC-CLP998013. The fact that the cationic charge groups are non hydrolyzable gives the product the advantage of functioning over the entire pH range.

Handling and Storage:

Storage in glass, stainless steel, plastic or epoxy lined vessels is recommended. Do not use aluminum or iron in feed or storage systems. If freezing occurs, product may be used after being thawed and thoroughly mixed. CAUTION: Spilled product can be very slippery. Low temperatures can cause pumping problems due to increase in product viscosity.

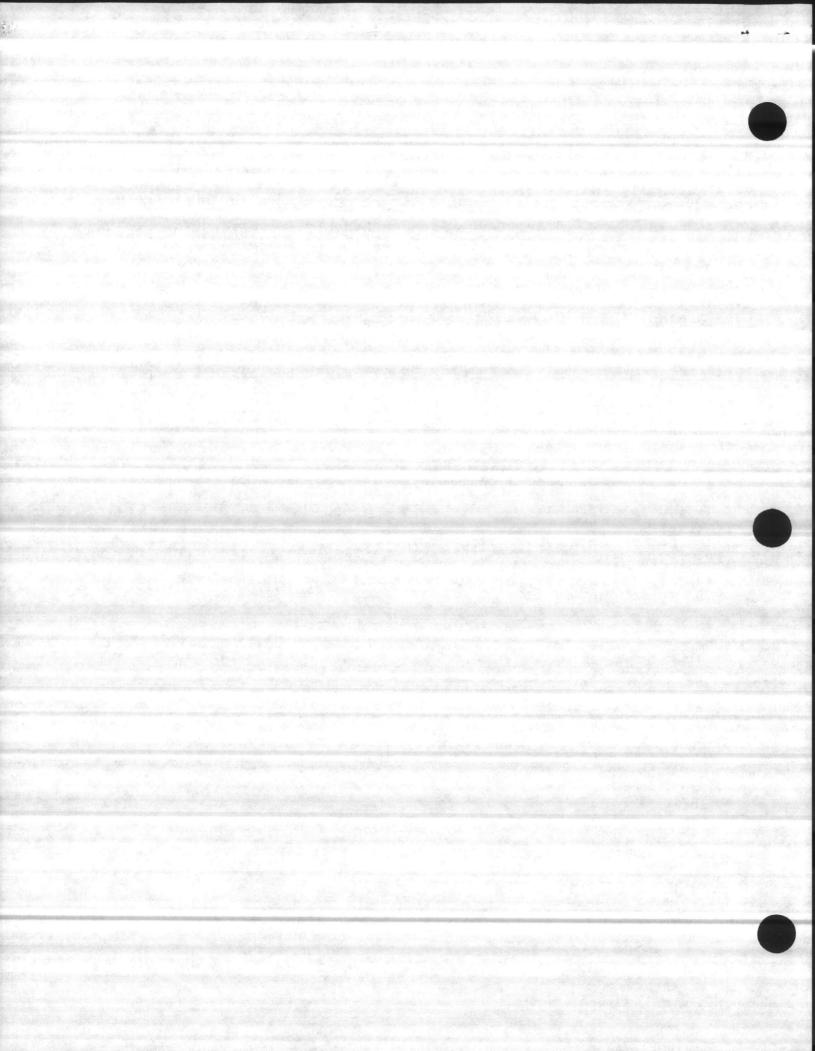
Plant Operations:

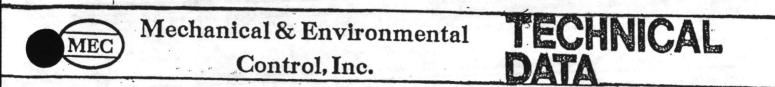
There are many polymer addition alternatives from neat polymer addition to very sophisticated application sequences. Your representative can discuss individual requirements with you.

Packaging:

MEC FLOC-CLP998013 is packaged in 55-gallon steel drums or is available in bulk.







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MEC FLOC-CLP998013

WATER & WASTE WATER PLANT APPLICATION:

Primary and Secondary clarifiers can be treated with MEC FLOC-CLP998013 to thicken and lower the sludge blanket. At approximatly 10 ppm or (1 gal. of MEC FLOC-CLP998013 per 100,000 gal. of effluent) it will lower the sludge blanket considerably, therefore greatly increasing the volume of **clear water** in the clarifiers. Lowering the sludge blanket also lowers the TDS and BOD levels of the water over the wiers.

Basically, the use of MEC FLOC-CLP998013 in clarifiers will increase the efficiency of the system and also assure good effluent readings, as required by the regulatory authorities.

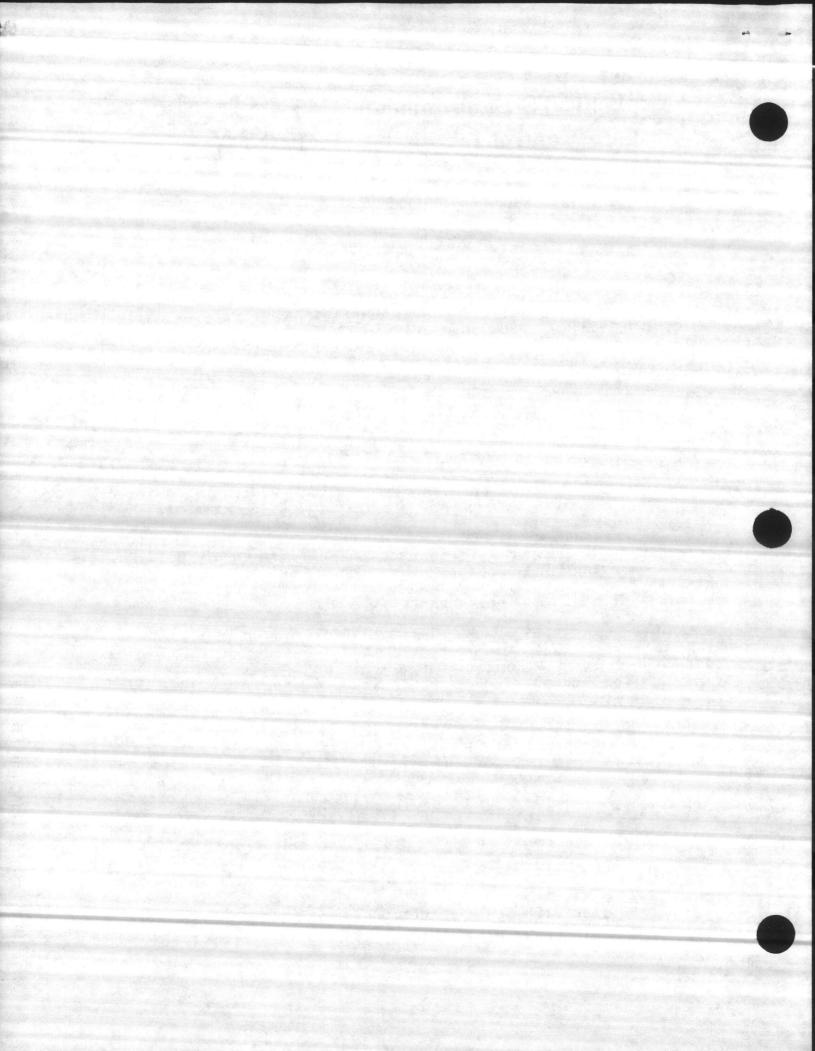
MEC FLOC-CLP998013 is very successful for sludge-dewatering on Drying Beds. At approximately 200 ppm to 600 ppm it will dewater the sludge and expedite drying time on the sludge. Under normal conditions a drying bed treated with MEC FLOC-CLP998013 will dewater and dry sufficiently to be removed within one week or less. In addition to faster de-watering and drying, the sludge is thoroughly dried, reducing the amount (volume) of solids to be removed from the bed. to approximately 1/3 of that on a non-treated bed.

In conclusion, the use of MEC FLOC-CLP998013 on Drying Beds will increase the efficiency of the system by faster drying, quicker removal, and reduced volume of the solids on the drying beds. The cost of "solids" disposal is greatly reduced due to a drier sludge that is produced.

MEC FLOC-CLP998013 is also approved by EPA for use in potable water at dosages up to 20 ppm. When used in potable water processing, it produces faster settling and better clarification with less sludge deposits to be disposed of, as with the use of Alum etc. MEC FLOC-CLP998013 is easily fed into the system, and produces a larger volume of clearer water at less cost than other products

Your MEC representative is available for any additional information and assistance.

MEC, Inc./108 Cedar Street/Dudley, NC 28333-9453 Telephone (919)734-1073/Fax (919)734-7119



May be used to comply with A's Hazard Communication Standard, FR 1910.1200. Standard must be consulted for specific requirements.	U.S. Department of Labor Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072						
IDENTITY (As Used on Label and Usi) MEC FLOC-CLP998013		Note: Blank space	s are not permitte	d. If any item is no ace must be mark	ol applicable, or no sed to indicate that.		
Section I	- Andrew Street	and the second					
Manufacturer's Name <u>MECHANICAL & ENVIRONMENT</u> Address (Number, Street, City, State, and ZIP Co	TAL CONTROL,	Emergency Teleph INC. Telephone Numbe	(9	19) 378-9393			
108 Cedar Street		Salaria Car		19) 378-9393			
Dudley, N. C. 28333		Date Prepared September 2 Signature of Prepa	2, 1986	NE = N	NA = Not Applicable NE = Not Established		
	and the second data of the	-k aller K	Pelt	c a.=	Approximate]		
Section II - Hazardous Ingredients/	dentity Information	n Serial No.	156	and the second			
Hazardous Components (Specific Chemical Iden	lity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limit Recommend			
Polyquaternary Amine Polym (Trade Secret)	er .	N/E	N/E	Irrita	nt		
		·		i			
Section III — Physical/Chemical Char			-				
		Specific Gravity (Ha					
Boiling Point	acteristics ca. 212°F	and the second		<i>i</i>	ca. 1.1		
Boiling Point Vapor Pressure (mm Hg.)		Specific Gravity (H ₂ Melting Point					
Section III — Physical/Chemical Char Boiling Point Vapor Pressure (mm Hg.) Vapor Density (AIR = 1)	ca. 212°F	Melling Point Evaporation Rate			ca. 1.1		
Boiling Point Vapor Pressure (mm Hg.) Vapor Density (AIR = 1) Solubility in Water <u>Completely soluble</u> Appearance and Odor	ca. 212°F Nil Nil	Melling Point		<i>i</i>			
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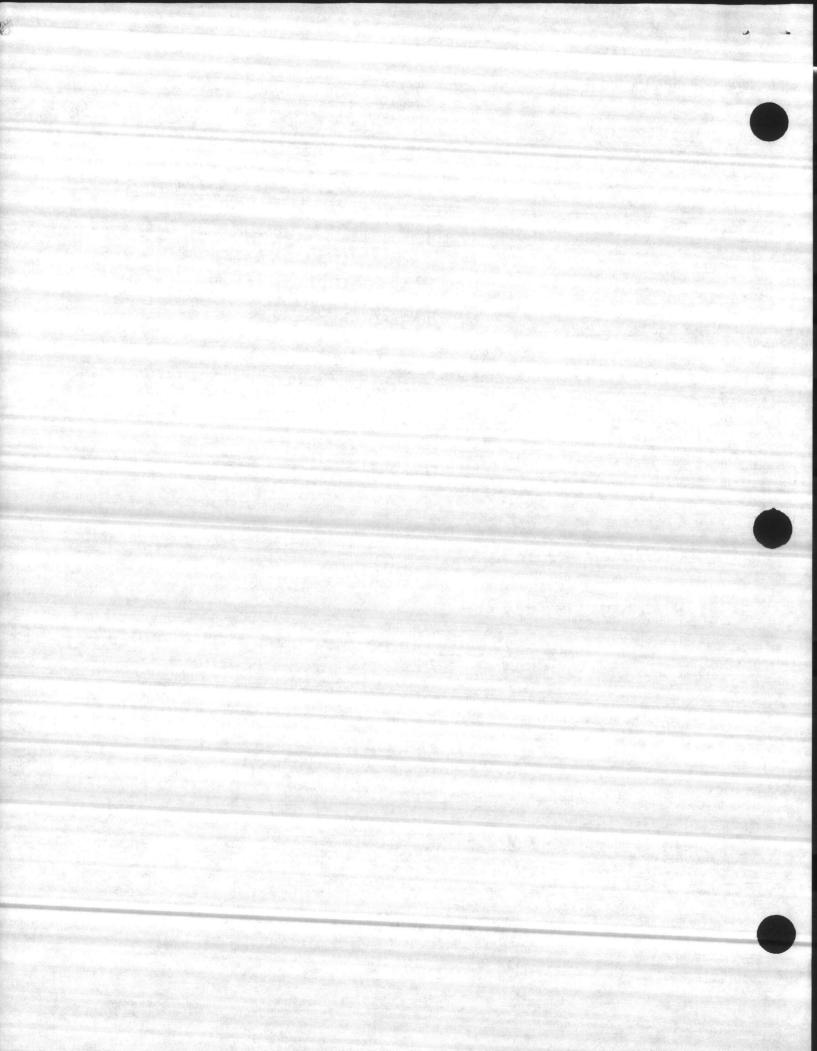
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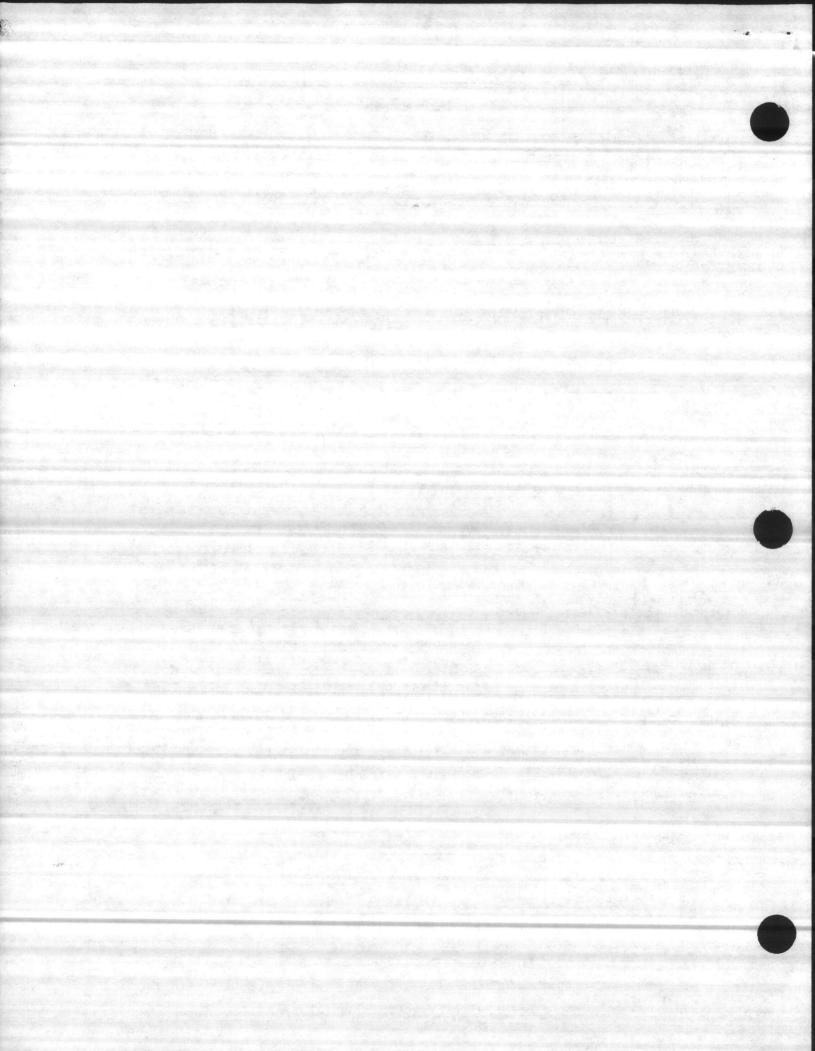
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Sector Green and A



PRODUCT DATA

(919) 734-1073

Mechanical & Environmental

Control, Inc.

108 Cedar Street Dudley, N. C. 28333 5.0

MEC FLOC-CLP998013

Cationic Polymer

Municipal and Industrial Wastewater Treatment

MEC FLOC-CLP998013 is a highly cationic high molecular weight, liquid polyquaternary amine. It is effective as a dewatering aid for industrial and municipal waste sludges It is also used for filtration, flotation, emulsion breaking and clarification processes. This product is approved for use in paper which comes in contact with food, according to guidelines set forth by the Food & Drug Administration under 21 CFR 176170. The product is approved by EPA for potable water at dosages up to 20 ppm.

Recommended Solution Preparation and Feeding

MEC FLOC-CLP998013 should be fed using a corrosion resistant, positive displacement pump and should be prepared at solution concentration of 0.5% or less. Feed the diluted product at a point that insures complete mixing. In some cases the product can be fed neat.

Applications: -Gravity settling -Filtration -Centrifugation -Air Flotation -Clarification

Properties:

A table of some important properties of MEC FLOC-CLP998013 are as follows:

Appearance	Amber liquid
Specific Gravity	
at 25°C	1.13 - 1.16
Product Viscosity	
at 25°C (CP)	5000 - 9000
Freezing Point	0°F
рH	4-0
Flash Point	200°F

(over)



MEC FLOC-CLP998013 is effective in producing a fast settling, easily filtering sludge. The product is highly versatile and can function satisfactorily in low turbidity water. Chlorinated make up water does not adversely affect the performance of MEC FLOC-CLP998013. The fact that the cationic charge groups are non hydrolyzable gives the product the advantage of functioning over the entire pH range.

Handling and Storage:

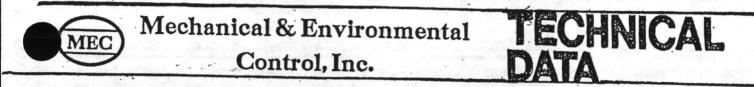
Storage in glass, stainless steel, plastic or epoxy lined vessels is recommended. Do not use aluminum or iron in feed or storage systems. If freezing occurs, product may be used after being thawed and thoroughly mixed. CAUTION: Spilled product can be very slippery. Low temperatures can cause pumping problems due to increase in product viscosity.

Plant Operations:

There are many polymer addition alternatives from neat polymer addition to very sophisticated application sequences. Your representative can discuss individual requirements with you.

Packaging:

MEC FLOC-CLP998013 is packaged in 55-gallon steel drums or is available in bulk. 520 bs wet wt.



MEC FLOC-CLP998013

WATER & WASTE WATER PLANT APPLICATION:

Primary and Secondary clarifiers can be treated with MEC FLOC-CLP998013 to thicken and lower the sludge blanket. At approximatly 10 ppm or (1 gal. of MEC FLOC-CLP998013 per 100,000 gal. of effluent) it will lower the sludge blanket considerably, therefore greatly increasing the volume of clear water in the clarifiers. Lowering the sludge blanket also lowers the TDS and BOD levels of the water over the wiers.

Basically, the use of MEC FLOC-CLP998013 in clarifiers will increase the efficiency of the system and also assure good effluent readings, as required by the regulatory authorities.

MEC FLOC-CLP998013 is very successful for sludge-dewatering on Drying Beds. At approximately 200 ppm to 600 ppm it will dewater the sludge and expedite drying time on the sludge. Under normal conditions a drying bed treated with MEC FLOC-CLP998013 will dewater and dry sufficiently to be removed within one week or less. In addition to faster de-watering and drying, the sludge is thoroughly dried, reducing the amount (volume) of solids to be removed from the bed, to approximately 1/3 of that on a non-treated bed.

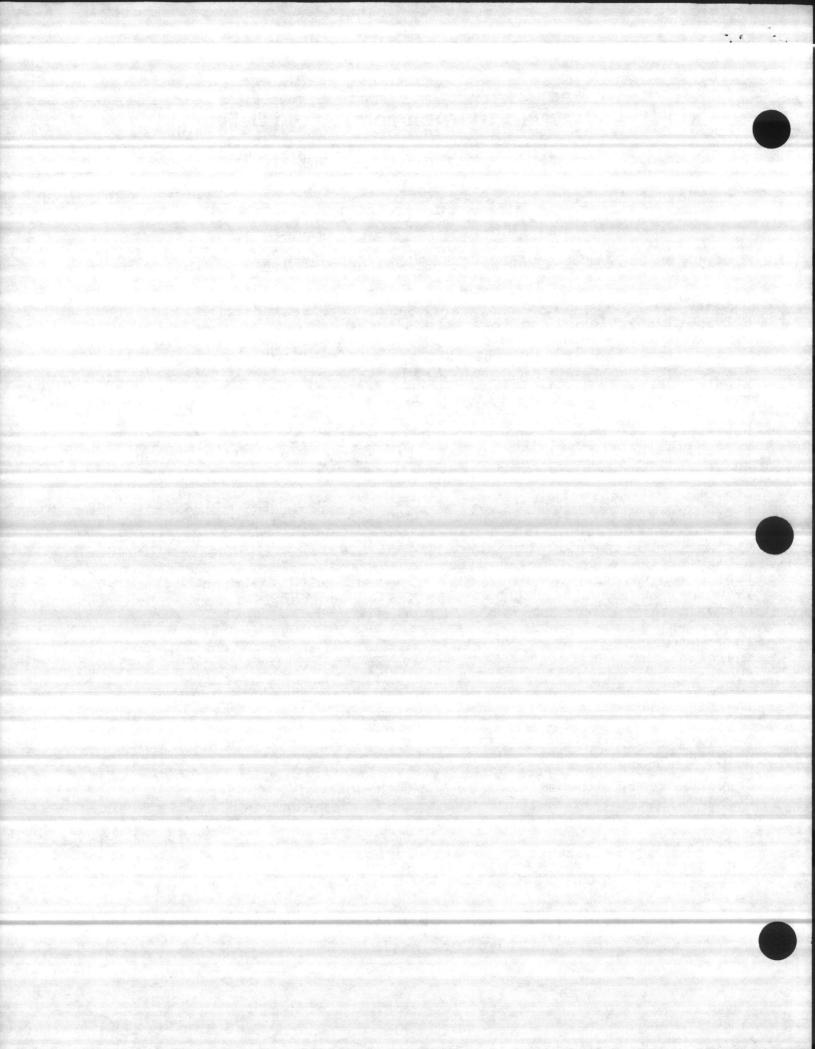
In conclusion, the use of MEC FLOC-CLP998013 on Drying Beds will increase the efficiency of the system by faster drying, quicker removal, and reduced volume of the solids on the drying beds. The cost of "solids" disposal is greatly reduced due to a drier sludge that is produced.

MEC FLOC-CLP998013 is also approved by EPA for use in potable water at dosages up to 20 ppm. When used in potable water processing, it produces faster settling and better clarification with less sludge deposits to be disposed of, as with the use of Alum etc. MEC FLOC-CLP998013 is easily fed into the system, and produces a larger volume of clearer water at less cost than other products

Your MEC representative is available for any additional information and assistance.

MEC,Inc./108 Cedar Street/Dudley, NC 28333-9453 Telephone (919)734-1073/Fax (919)734-7119

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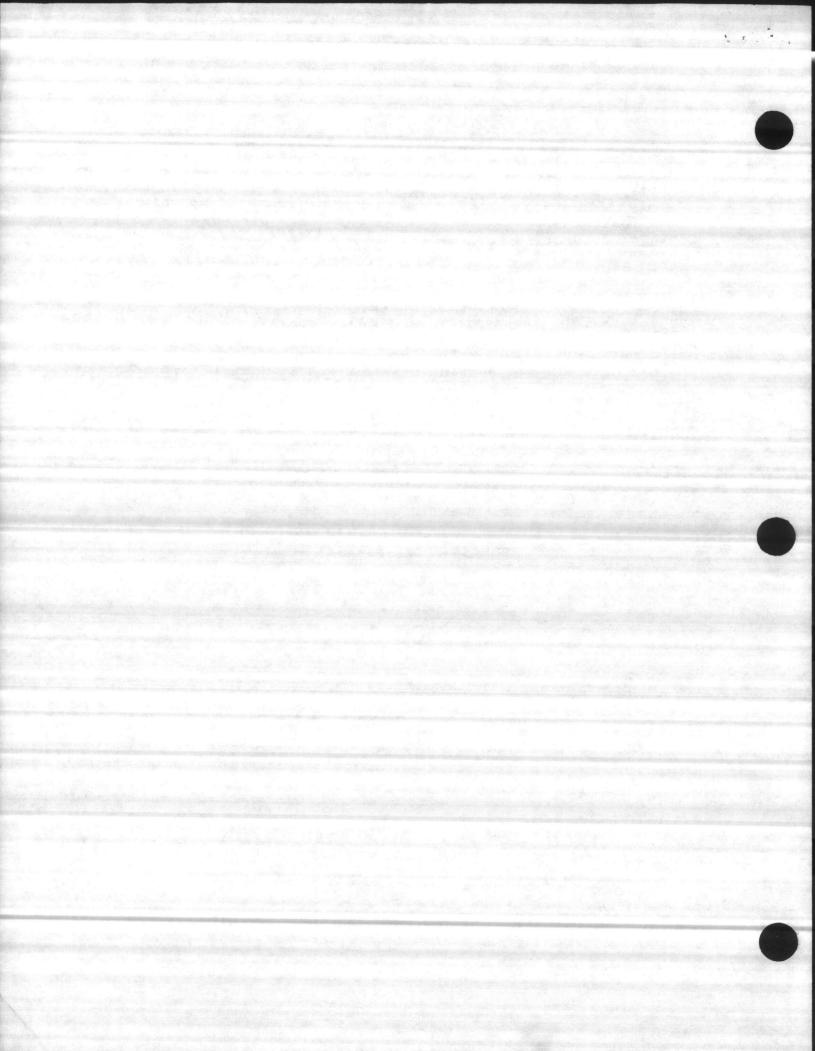
Plant Operations:

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Material Safety Data Sheet May be used to comply with VA's Hazard Communication Standard, FR 1910.1200. Standard must be sulted for specific requirements.

U.S. Department of Labor Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072

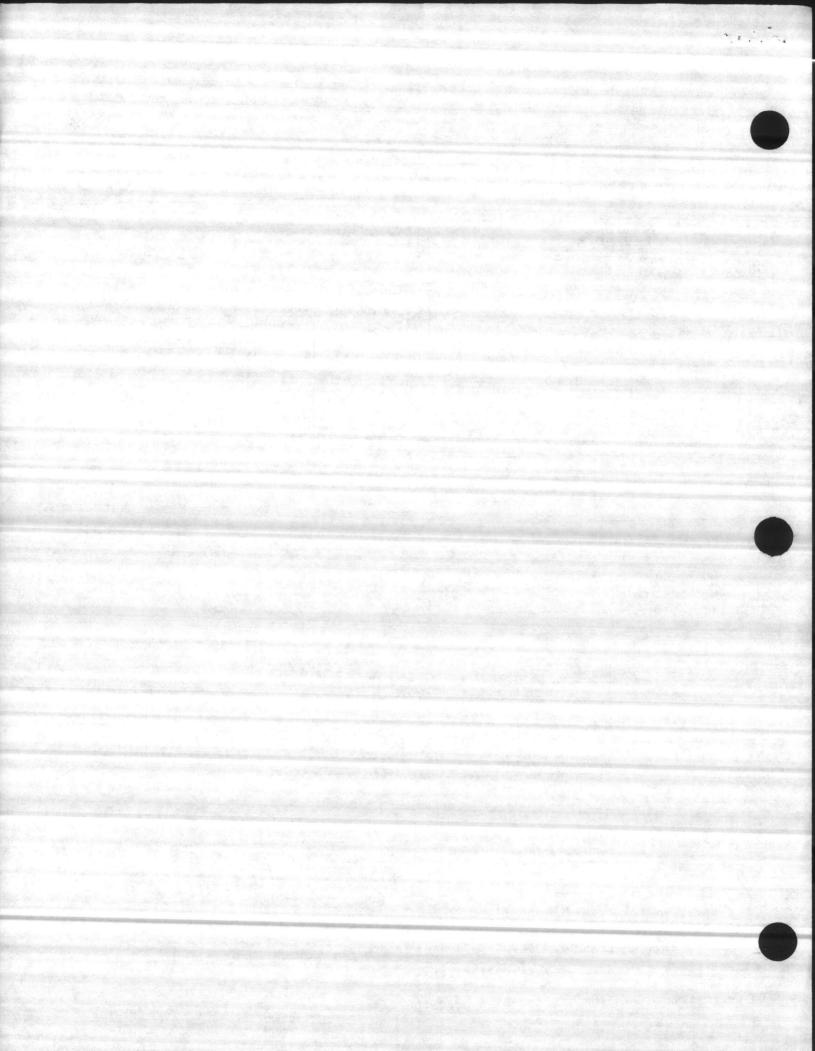


MEC FLOC-CLP998013	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.
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Section I

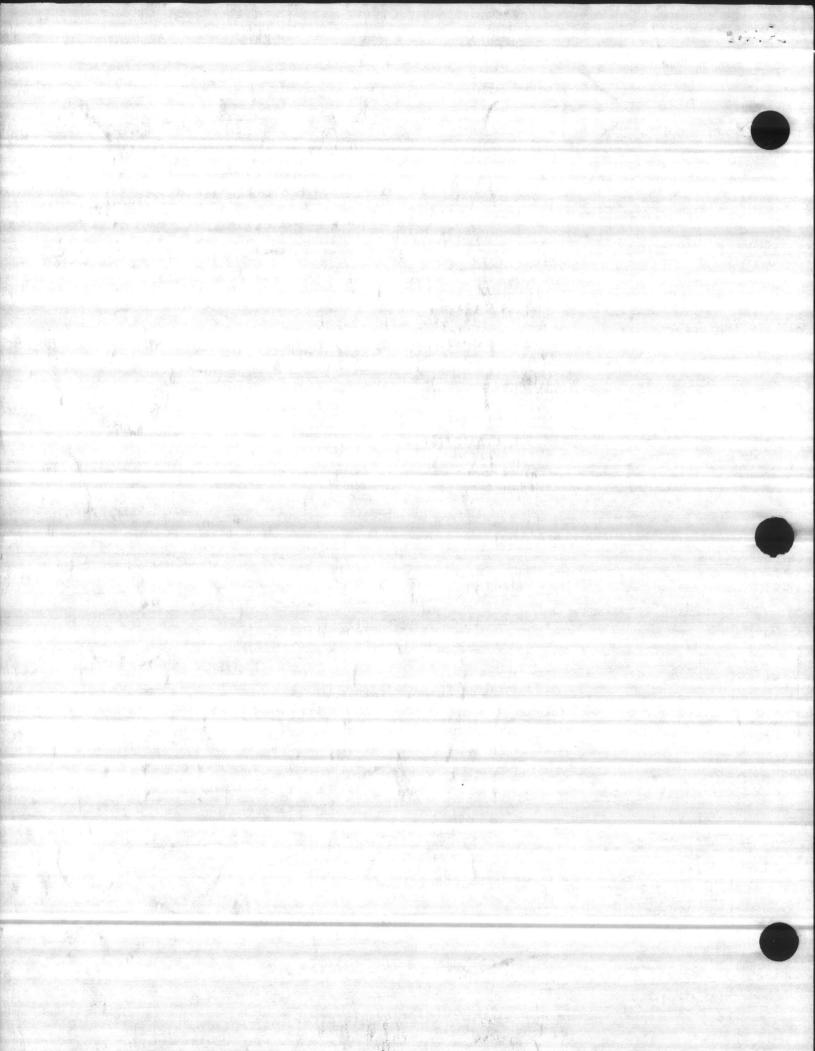
Manufacturer's Name MECHANICAL & ENVIRONMENTAL CONTROL,	Emergency Tele	ephone Number (919) 378-9393	
Address (Number, Street, City, State, and ZIP Code) 108 Cedar Street	Telephone Num	ber for Information	919) 378-9393	and an
Dudley, N. C. 28333	Date Prepared September	22 1086	NA = Not Appli NE = Not Estat	cable blished
	Signature of Pri	eparer (optional) R. Filt	c a.=Appr	
Section II - Hazardous Ingredients/Identity Information	Serial No			
Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Polyquaternary Amine Polymer (Trade Secret)	N/E	N/E	Irritant	
(IIade Secret)			(eye and skin)	
	and a second			
	· Add	66. S	12	

Boiling Point	a statistical statistics	Specific Gravity (H ₂ O = 1)		
	ca. 212°F	opcome Gravity (rizo = 1)		
Vapor Pressure (mm Hg.)	Nil	Melting Point		ca. 1.1
Vapor Density (AIR = 1)	Nil	Evaporation Rate		<u>5°F</u>
Solubility in Water		(Butyl Acetate = 1) Less that	In	
<u>Completely soluble</u> Appearance and Odor <u>Clear, colorless liquid; odor</u> Section IV — Fire and Explosion Hazard	of amine			
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Water spray, water fog, dry cl self Fire Fighting Procedures self contained breathing app Spilled product creates very s	paratus is to	o be worn by firefigh	ting personn	el.



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on par	tial combust	ion;	oxides of n	itrone				<u></u>
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DESCRIPTION:

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Aluminum Sulfate

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Confidential Records Management, Inc. New Bern, NC 1-888-622-4425 9/08

KACH

KOCH SULFUR PRODUCTS COMPANY P.D. Box 509 • Wilmington, North Carolina 28402

NES 919-762-5054 919-762-4175

MATERIAL SAFETY DATA SHEET

IDENTIFICATION

Name Aluminum Sulfate

Synonyms Alum

Chemical Family Inorganic Salt

Product Information and Emergency Phone

Transportation Emergency Phone

(919) 762-5054

Melting Poin! Solution

 $37.7^{\circ}C = 48 \text{ mm Hg}$

Octanol/Water Partition Coefficient

White

Autoignition Temperature

CAS Name Sulfuric Acid, Aluminum Salt (3.2) CAS Registry No. 10043-01-3

I.D Nos./Codes NIOSH Registry No. BD 17000 Wiswesser Code AL 2 S-02-Q2*3 Manufacturer/Distributor Koch Sulfur Products Company Address P.O. Box 509, Wilmington, NC

HAZARDOUS COMPONENTS

Material(s)

Approximate %

~ 26.5%

(919) 762-5054

50% Solution grade - Aluminum Sulfate

PHYSICAL DATA Boiling Point, 760 mm Hg

Solution 101°C, 214°F Specific Gravity

Solution = 1.33

Vapor Density

Solutions - vapor is water

" Volatiles by Vol.

Solution $\sim 70\%$

Form Liquid Solid

pH Information 50% solution $\sim 1-2$ 5% solution ~ 3

FIRE AND EXPLOSION DATA

Will not burn

Flammable Limits in Air, % by Vol.

Lower

Appearance Hazy to clearColor None

Crystalline

Upper

4°C, 39°F

Odor None

None

Vapor Pressure Solution mm Hg @ 25°C = 24, @

Evaporation Rate (Butyl Acetate = 1) Solution < 1

Solubility in H2O Solution = complete;

Fire and Ex: Com Hazards

Exinguishing Media

Special Fire Fighting Instructions

The data in this filaterial Safety Data Sheet relates only to the specific material herein and does not relate to use in combination with any other material or in any process. The information set forth herein is formished free of charge and is based on technical data that industrial believes to be reliable. It is intended for use by persons having technical skills and at their own descretion and risk. Since conditions of use are datside our control, we bake no was arities, expression implied, and assume no hability in connection with any use of this information. Soften there is used by taken es a frictise to operate under or a recommendation to infining any parents.



HAZARDOUS REACTIVITY

Instability

Stable (solid material decomposes about 100°C) Incompatibility Cyanides Decomposition Will not occur Polymerization Will not occur

HEALTH HAZARD INFORMATION

Exposure Limits

ACGIH TLV® 8-hour time weighted average = 2 mg/kg (soluble aluminum salts)

Routes of Exposure and Effects

Causes eye irritation.

First Aid

In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. If swallowed, drink large quantities of water.

Call a physician.

No. IV. of the P

PROTECTION INFORMATION

Ventilation

Maintain adequate ventilation. Personal Protective Equipment

Coverall chemical safety goggles. Ciner Rubber gloves as good hygienic practice.

DISPOSAL PROCEDURES

Aquatic Toxicity

Spill, Leak or Release

Spills may produce slippery surfaces.

Flush area with copious amounts of water.

Waste Disposal Observe Federal, State and Local regulations. See 40 CFR 116. If approved, flush to chemical sewer with copious amounts of water.

SHIPPING PRECAUTIONS

Transpontation Dry grades are not regulated. Proper shipping name for solution is "Corrosive Liquid, NOS". DOT Hazard Class for solution is "Corrosive Material". Shipping Containers Solution grades = tank trucks.

Storage Conditions

Keep solutions at

or above 60 °F (16°C) to avoid crystallization.

REFERENCES AND ADDITIONAL INFORMATION

Avoid contact with eyes. Wash thoroughly after handling. 8300

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SECTION V . HEALTH HAZARD DATA

1 .

THRESHOLD LIMIT VALUE 1 ppm EFFECTS OF OVEREXPOSURE

Can cause serious injury despite medical treatment

EMERGENCY AND FIRST AID PROCEDURES Irrigate affected area. Get Medical Help. Ingestion:

dilute with water or milk, do not induce vomiting. Get

medical help.

		02011		REACTIVITY DATA
STABILITY	UNSTABLE		CONDITIC	DNS TO AVOID
Normally	STABLE	x	Reacts	with water
INCOMPATABILIT Organics, () MAZARDOUS DEC	Chlorates, Ca	rbides, i	Fulminate	s, Picrates, Metals
HAZARDOUS	MAY OC	CUR		CONDITIONS TO AVOID
POLYMERIZATIO		T OCCUR	X	

SECTION VII . SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Cover the contaminated surface with sodium bicarbonate or a soda ash-slaked lime

mixture (50-50). Mix and add water if necessary to form a slurry. Scoop up

slurry and wash down the drain with excess water. Wash site with soda ash solution WASTE DISPOSAL METHOD Add slowly to large volume of agitated solution of soda ash and slaked lime

neutralized solution to excess running water.

SECTION VIII - SPECIAL PROTECTION INFORMATION

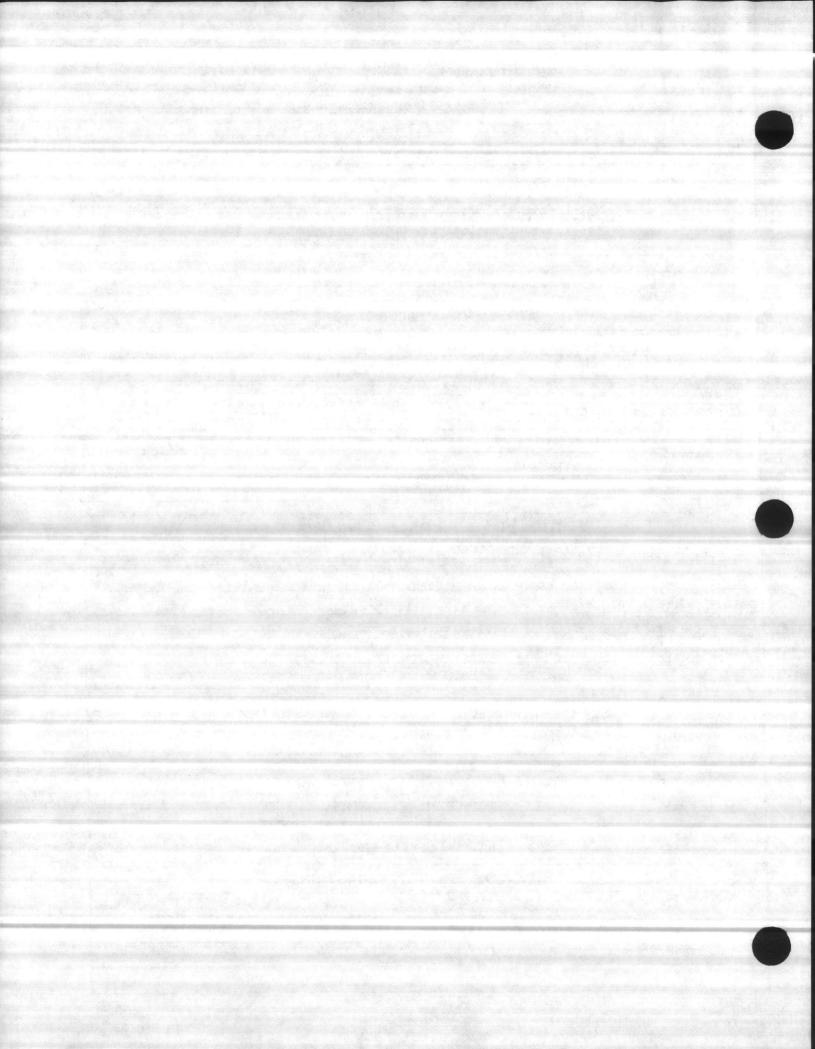
RESPIRATORY PROTECTION (Specify type)

VENTILATION	LOCAL EXHAUST	the second second	SPECIAL	· · · · · ·
	MECHANICAL (General)	kan salahina sersari para	OTHER _	and the second
PROTECTIVE GLO	Rubber	EYE PROTE	TION Face Shield	

Rubber apron-Laboratory Coat

	SECTION IX - SPECIAL PREC	AUTIONS
PHECAUTIONS TO BE TAKEN	N IN HANDLING AND STORING	
	Avoid Freezing	
THER PRECAUTIONS	×	n an

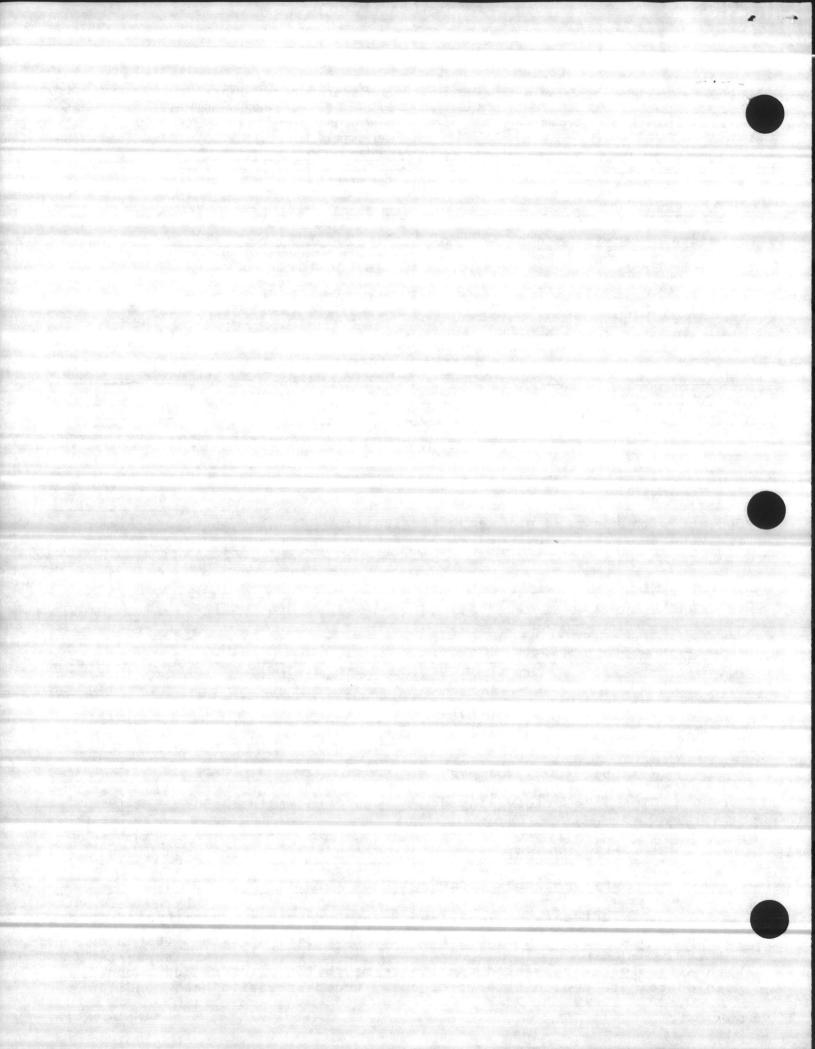
Form OSHA-20 Rev. May 72



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Material Safety Data Sheet y be used to comply with HA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.		U.S. Department of La Occupational Safety and Health (Non-Mandatory Form) Form Approved OMB No. 1218-0072		
IDENTITY (As Used on Label and List) MEC FLOC CBX50A50P	Profession (Note: Blank spaces are not permitte information is available, the sp	ed. If any item is not pece must be marked	applicable, or no I to indicate that
Section I		and the second sec		
Manufacturer's Name	,	Emergency Telephone Number		
Mechanical & Environmental	Control	919-734-1073	and the second second	
Address (Number, Street, City, State, and ZIP Code) 108 Cedar Street		Telephone Number for Information 919-734-1073	A	and the second
Dudley, N. C. 28333-9453		Date Prepared February 20, 199	0	an a
		Signature of Preparer (optional)	<u> </u>	A CONTRACTOR
Section II — Hazardous Ingredients/Identi	ity informatio	n SERIAL No. 0304		and the second second
Hazardous Components (Specific Chemical Identity; Co		and the second	Other Limits Recommended	i % (optional)
Aluminum chloride, basic				and the stars
CAS No 1327-41-9		N/E 2mg/m ³	Irritan	t* Major
*Contact with the eyes will irritate the respiratory t		rritation. Inhalat	ion of mis	<u>ts mav</u>
			<u>ion of mis</u>	ts mav
irritate the respiratory t	tract.	rritation. Inhalat N/E N/E	Irritan	t Minor
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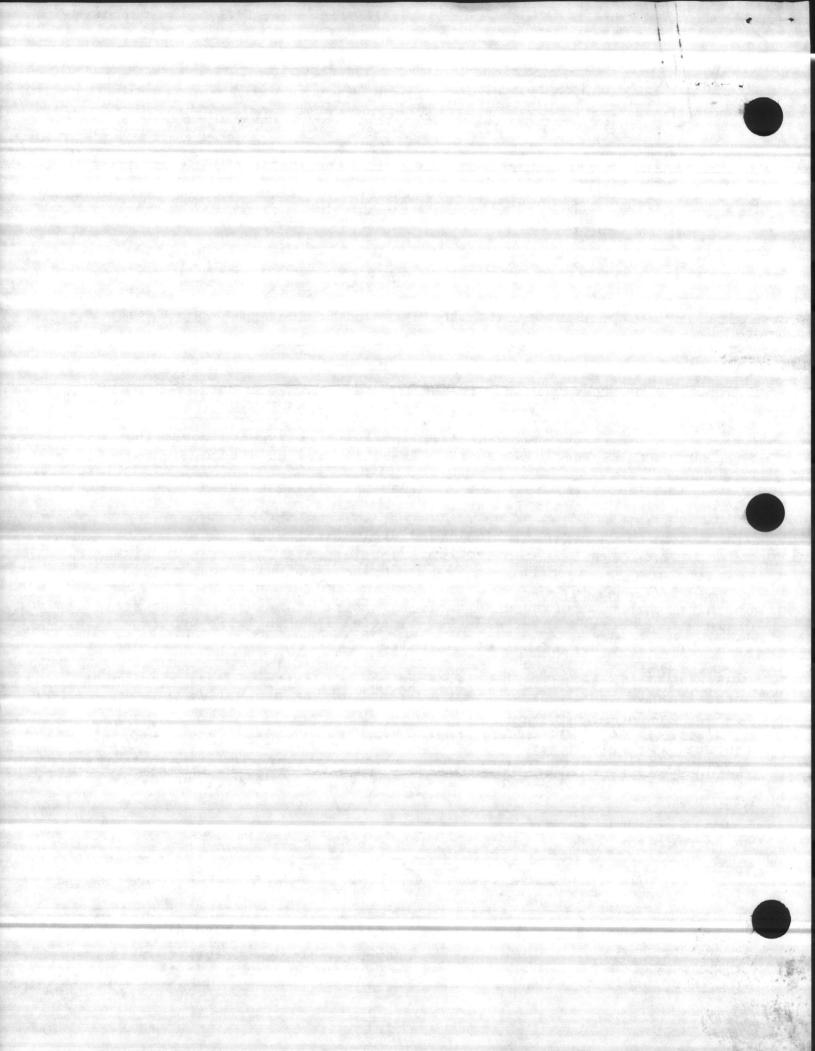
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Hazardous Polymerization	May Occur	Τ	Conditions to		<u>OICION</u>				an an tanan T
	Will Not Occur	x			And A				
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may cau	se irriat:	1		State of States	and the second second	and the second		estinal dis-	
turbanc									
Carcinogenicity:		IP? No	,		IARC Mono	naphs? No	OSHA	Regulated? No	1000 1000 - 100
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Respiratory Pro	tection (Specify Typ	e)							
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Ventilation	Local Exhaust	iste	are ret	noved	1		equired		
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Protective Glov	Recommen	ded			Eye Pr		equired		
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Other Protectiv	apron or Equip		as nee	ded in	and the second sec	and a sub-sub-sub-sub-sub-sub-sub-sub-sub-sub-	and the second and the	ted skin con	tact
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DESCRIPTION:

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Confidential Records Management, Inc. New Bern, NC 1-888-622-4425 9/08 ****SODIUM CHLORIDE****

PAGE 01 OF 04

SODIUM CHLORIDE **SODIUM CHLORIDE** **SODIUM CHLORIDE**

MATERIAL SAFETY DATA SHEET

EMERGENCY CONTACTS	DATE: 04/27/86
GASTON L. PILLORI	PO NBR: V797P5031I
(201) 796-7100	ACCT: 912334-02
	INDEX: 14-8611-40202
	CAT NO: 52713
	GASTON L. PILLORI

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SUBSTANCE IDENTIFICATION

CAS-NUMBER 7647-14-5

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SUBSTANCE: **SODIUM CHLORIDE**

TRADE NAMES/SYNONYMS: GOMMON SALT; HALITE; ROCK SALT; SALINE; SALT; SEA SALT; TABLE SALT; S-271; S-640; S-671

CHEMICAL FAMILY: INORGANIC SALT

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MOLECULAR FORMULA: CL-NA MOL WT: 58.44

CERCLA RATINGS (SCALE 0-3): HEALTH=2 FIRE=0 REACTIVITY=0 PERSISTENCE=0

COMPONENTS AND CONTAMINANTS

PERCENT: 100 COMPONENT: SODIUM CHLORIDE

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS: NONE ESTABLISHED

PHYSICAL DATA

DESCRIPTION: COLORLESS, TRANSPARENT CRYSTALS OR WHITE CRYSTALINE POWDER BOILING POINT: 2575 F (1413 C) MELTING POINT: 1474 F (801 C) SPECIFIC GRAVITY: 2.2 VAPOR PRESSURE: 1 MM @ 865 C PH: NEUTRAL IN SOLUTION SOLUBILITY IN WATER: 37% SOLVENT SOLUBILITY: SLIGHTLY SOLUBLE IN ALCOHOL, LIQUID AMMONIA





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FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD: MEGLIGIBLE FIRE AND NEGLIGIBLE EXPLOSION HAZARD IN DUST FORM WHEN EXPOSED TO HEAT OR FLAME.

FIREFIGHTING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR FOAM (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGER FIRES, USE WATER SPRAY, FOG UR ALCOHOL FOAM (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING: NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING VAPORS OR DUSTS; KEEP UPWIND.

TOXICITY

50 MG/24 HOURS SKIN-RABBIT MILD IRRITATION; 500 MG/24 HOURS SKIN-RABBIT MILD IRRITATION; 100 MG/24 HOURS EYE-RABBIT SEVERE IRRITATION; 100 MG EYE-RABBIT MILD IRRITATION; 12,357 MG/KG/IO DAYS CONTINUOUSLY ORAL-HUMAN TDLO; 3000 MG/KG OFAL-RAT LD50; 3500 MG/KG SUBCUTANEOUS-RAT LDLO; 4000 MG/KG ORAL-MOUSE LD50; 2602 MG/KG INTRAPERITONEAL-MOUSE LD50; 8 GM/KG ORAL-RABBIT LDLO; 3150 MG/KG SUBCUTANEOUS-MOUSE LD50; 645 MG/KG INTRAVENOUS-MOUSE LD50; 364 MG/KG INTRA-PERITONEAL-DOG LDLO; REPRODUCTIVE DATA (RTECS); CARCINOGEN STATUS: NONE. SODIUM CHLORIDE IS MODERATELY TOXIC BY ORAL, SUBCUTANEOUS, INTRAPERITONEAL, AND INTRAVENOUS ROUTES. POISONING AFFECTS THE BLOOD PRESSURE.

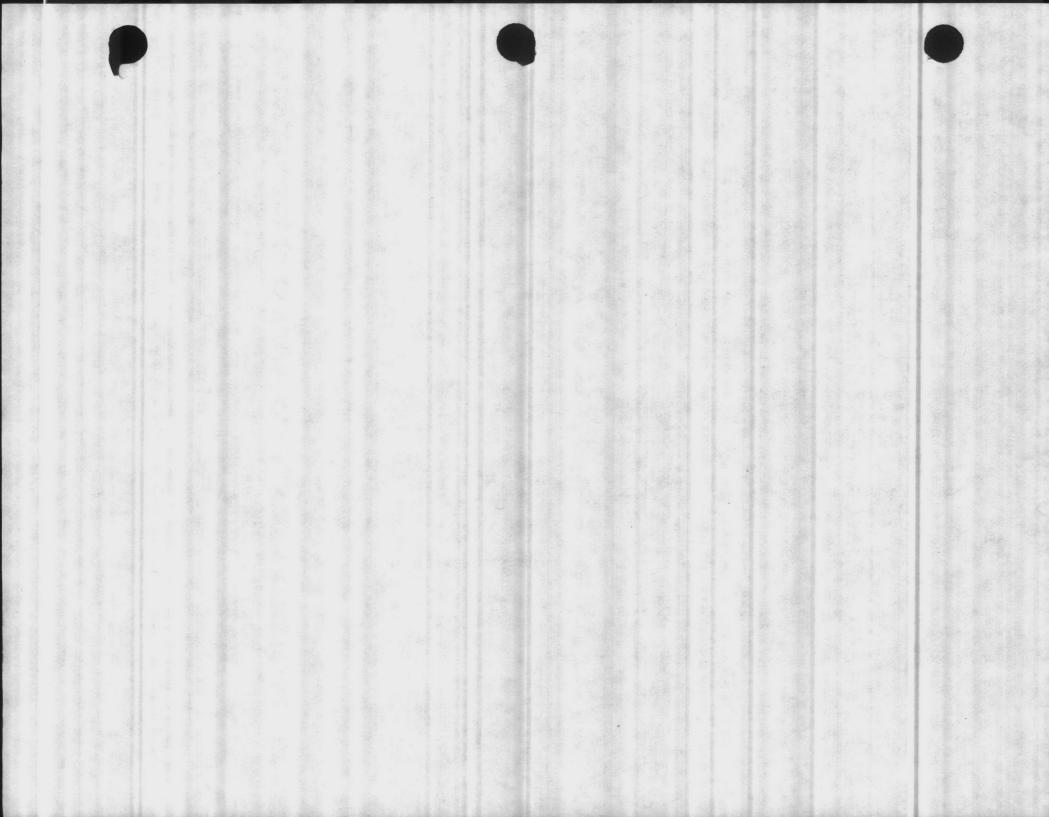
HEALTH EFFECTS AND FIRST AID

INHALATION: IRRITANT. ACUTE EXPOSURE- INHALATION OF CRYSTALS OR POWDER MAY PRODUCE IRRITATION AND COUGHING.

CHRONIC EXPOSURE- MAY CAUSE MUCOUS MEMBRANE IRRITATION. SEE ANIMAL REPRODUCTIVE REFERENCES IN TOXICITY SECTION.

CHRONIC EXPOSURE- MAY CAUSES DERMATITIS WITH DEFATTING OF SKIN.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (15-20 MINUTES). GET MEDICAL ATTENTION.





SODIUM CHLORIDE PAGE 03 OF 04 LYE COM IERITANT. ACUTE EXPOSURE- SOLID PARTICLES MAY CAUSE REDNESS, PAIN AND IRRITATION. CHRONIC EXPOSURE- MAY CAUSE CONJUNCTIVITIS. FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION. INGESTION: JRRITANT. ACUTE EXPOSURE- INGESTION OF LARGE DOSES MAY CAUSE NAUSEA, VOMITING, MUSCULAR TWITCHING, RIGIDITY, CONVULSIONS, AND PROSTRATION. IN INFANTS, THIS CAN PROGRESS TO COMA AND CONVULSIONS. DEHYDRATION AND CONGESTICH OCCUR IN MOST INTERNAL ORGANS. PARTICULAR THE MENINGES AND BRAIN. FIRST AID- IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER, AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET MEDICAL ATTENTION IMMEDIATELY. REACTIVITY REACTIVITY: STABLE UNDER NORMAL TEMPERATURES AND PRESSURES. INCOMPATIBILITIES: SODIUM CHLORIDE: LITHIUM: VIOLENT FEACTION. BROMINE TRIFLUORIDE: ATTACKED. BUILDING MATERIALS: ATTACKED. DECOMPOSITION: NOT APPLICABLE. BOILS AWAY UNCHANGED AT 1413 C. : OLYMERIZATION: NOT KNOWN TO OCCUR. CONDITIONS TO AVOID AVOID HEATING TO BOILING AND CONTACT WITH INCOMPATIBLE SUBSTANCES. SPILL AND LEAK PROCEDURES OCCUPATIONAL SPILL: VENTILATE CONFINED SPACES. SWEEP UP, AVOIDING DISPERSION OF DUST, AND COLLECT IN SUITABLE CONTAINER. PROTECTIVE EQUIPMENT --- VENTILATION: FROVIDE GENERAL DILUTION VENTILATION.

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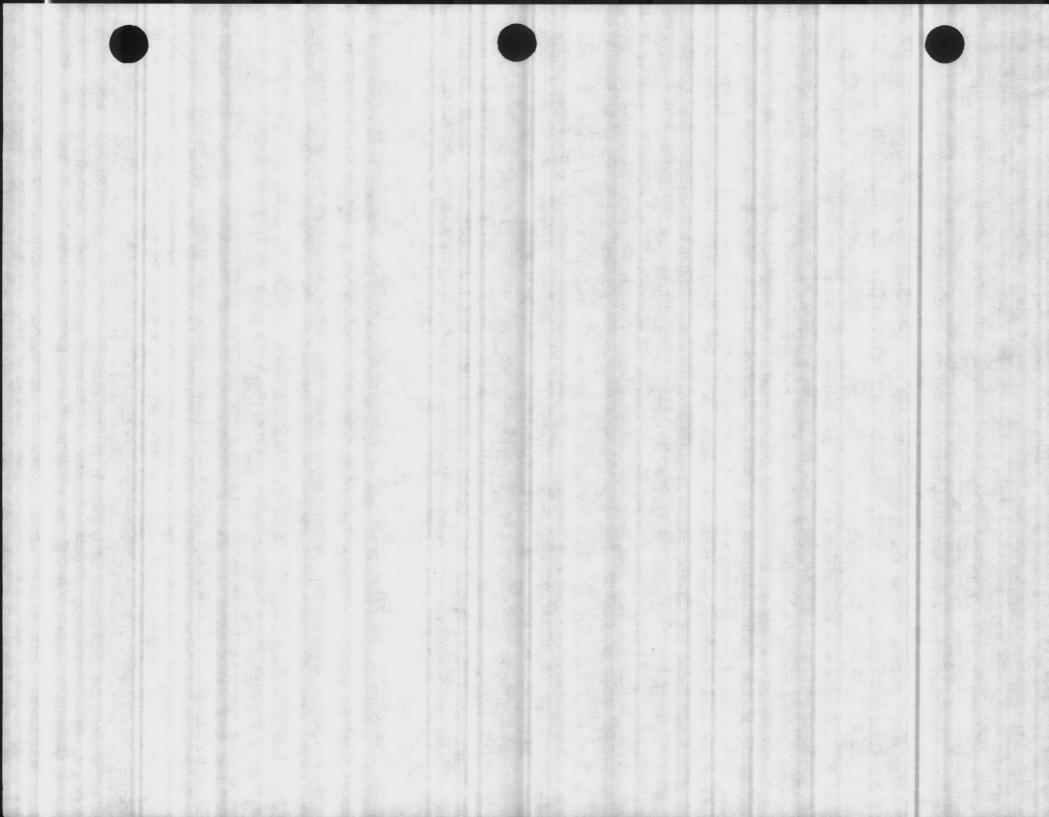
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PAGE 04 DF 04

DESPIRATOR: HIGH LEVELS- DUST MASK.

FIREFIGHTING- SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACE-PIECE OFERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

SODIUM CHLORIDE

CLOTHING:

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PROTECTIVE CLOTHING NOT REQUIRED. AVOID REPEATED OR PROLONGED CONTACT WITH THIS SUBSTANCE.

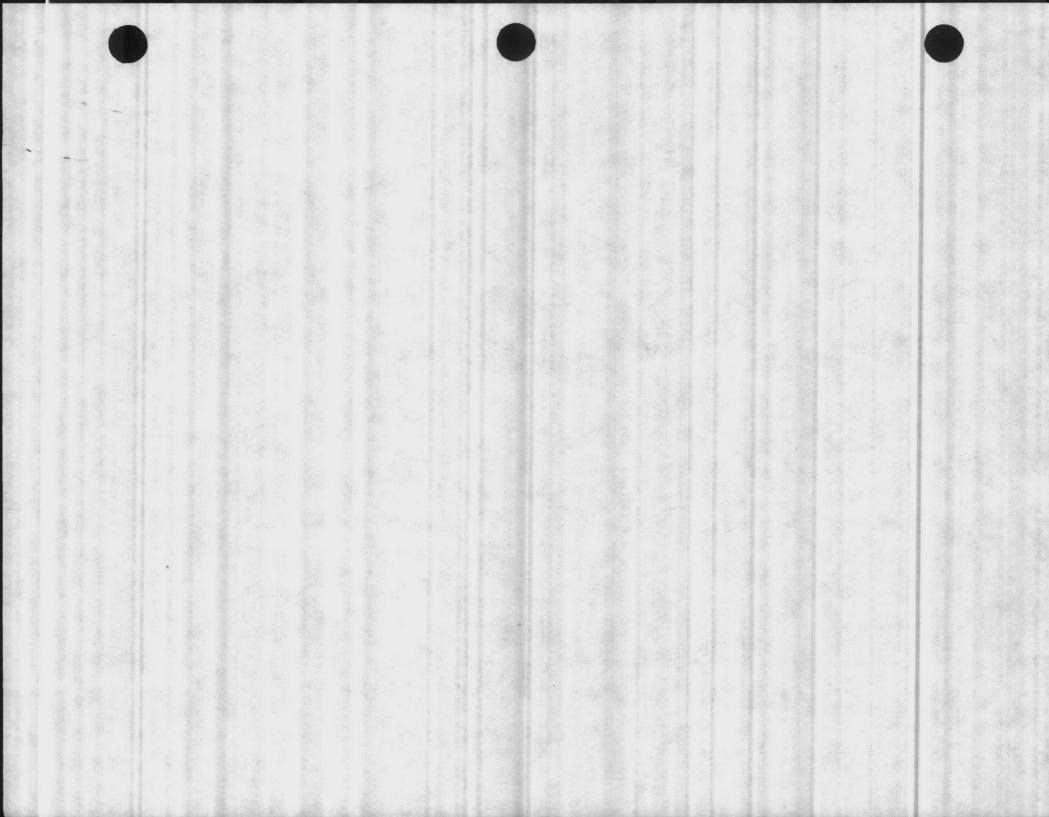
CLOVES:

FROTECTIVE GLOVES ARE NOT REQUIRED BUT RECOMMENDED.

FYE PROTECTION: EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EVE CONTACT WITH THIS SUBSTANCE.

> · AUTHORIZED - ALLIED FISHER SCIENTIFIC CREATION DATE: 03/15/85 REVISION DATE: 04/23/85

-ADDITIONAL INFORMATION-THE INFORMATION BELOW IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.



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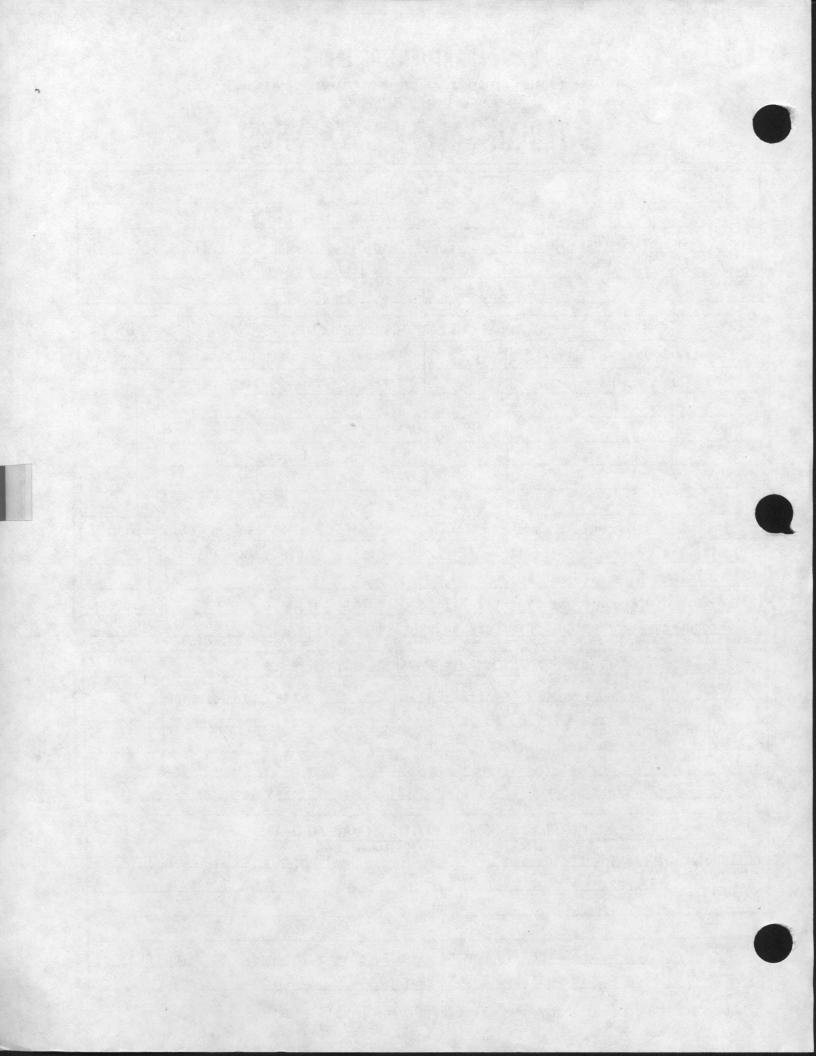
U.S. DEPARTMENT OF LABOR

WAGE AND LABOR STANDARDS ADMINISTRATION Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET (SPRAY) 9-1-84

		SECT	TION I		
MANUFACTURER'S NAME			EMERGENCY TELEPHONE N	0.	
ADDRESS (Number, Street, City, State, and ZIP Co	de)		619/275-1400		
CHEMICAL NAME AND SYNONYMS	0 <u>.</u> B	<u>ox 806(</u>	07, San Diego, California 92138-	902	
Organic mixture			WD-40 spray cans		
		1941 - 1	FORMULA		
SECTION SECTION	AI - 11-	LATA			
PAINTS, PRESERVATIVES, & SOLVENTS	8	TLV (Units)	ALLOYS AND METALLIC COATINGS		TLV
PIGMENTS Not applicable	-	(Units)	BACC METAL	-	(Units
CATALYST			ALLOYS Not applicable	-	
VEHICLE				-	
SOLVENTS			METALLIC COATINGS	-	
			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURE	SOFO	THER LIO	UIDS, SOLIDS, OR GASES	*	TLV
					(Units)
(2) Petroleum base oil (CAS 80)					500pp
				15	
			d petroleum gas)(CAS 68476 85 7*	25	1000pj
(4) Proprietary corrosion inhit	oitor	rs and	wetting agents *	Ba]	ance
	CTIO	N 111 "C	and a state of the state of the state of the state of the state	***	
BOILING POINT (F.)			HISICAL DATA	1	N. Sheet
VAPOR PRESSURE (mm HgJ			SPECIFIC GRAVITY (H2Q=1) Total mix in can	1	710
in cans @ 70° F.	50	psig	BY VOLUME (%) Total can contents		80
VAPOR DENSITY (AIR=1) greater than	1		EVAPORATION RATE		
solubility in water insoluble - forms unstable emul	lior			1	
			d slight characteristic odor.	-	1000
	UTEU	<u>I IIQUI</u>	u singit characteristic odor.		
SECTION IV	FIRE	AND E	PLOSION HAZARD DATA		
FLASH POINT (Method used)			FLAMMABLE LIMITS Lei	T	Uel
Not applicable to spray cans		-	Ipropellant portion 11.8% vol	19	-5% VO
SPECIAL FIRE FIGHTING PROCEDURES	<u>al,</u>	toam			
		and the second			
NUSUAL FIRE AND EXPLOSION HAZARDS	ider	ed "ex	tremely flammable" under Consume	r P	roduct
Safety Commission regulations.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		the second s		

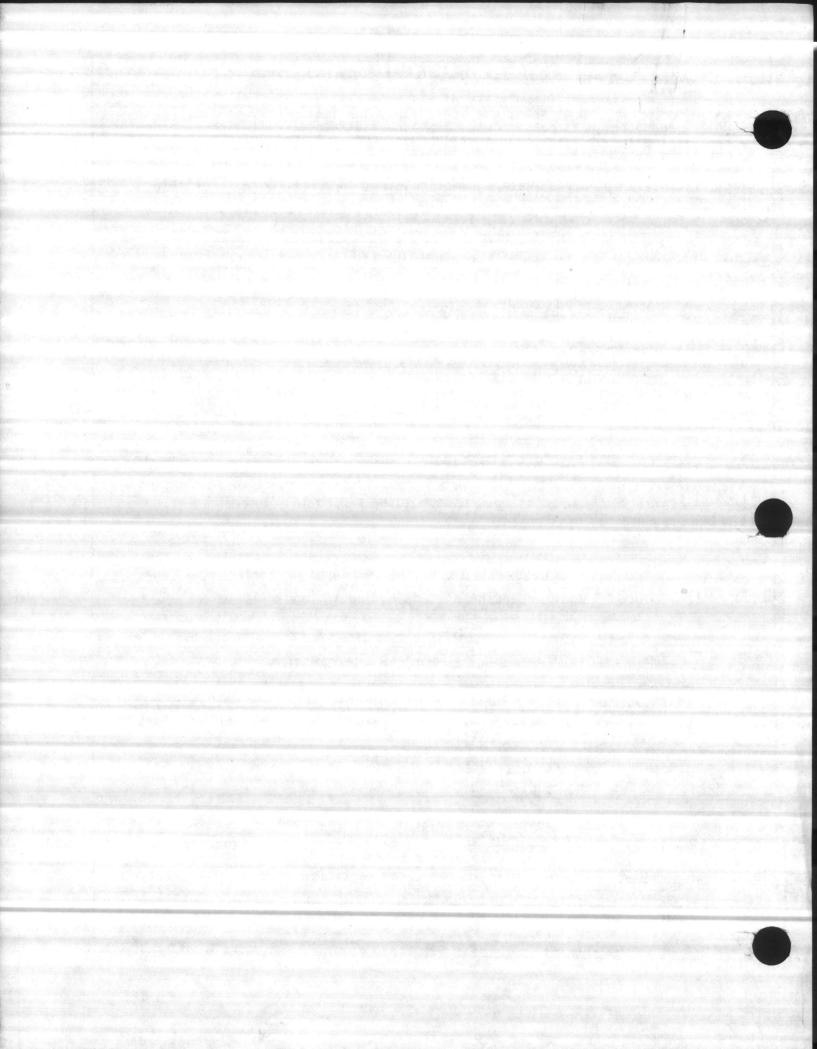
*These do not constitute any special toxicity or handling hazards.



FEECTS OF OUR	For	thinne	r (lowe	st TLV or	f all components) 500 ppm. ritation, inhalation of vapor may cause
esthesia.	headac	ne diz	ziness.	nausea	August Annalation of Vapor may cause August August Au
h cause j	cal pneu	n, naus monitis	sea, vón	niting, a	and diarrhea. Aspiration into lungs can
MERGENCY AND	FIRST AID P	ROCEDURES	1	not ind	ice vomiting, call a physician. For eye
ontact, fl	ush with	plenty	of wat	ter, remo	ove contact lepses if worn. For skin skin cream. For inhalation, remove to
esh air.	<u>sh with</u> give art	sbap at	respir	ation if	skin cream. For inhalation, remove to necessary; if breathing is difficult, give
(voen.					The second state of the se
Tics for The	State and an and		11		
	Server a	T. State	SECI		REACTIVITY DATA
TABILITY	UNSTA	BLE	a service and	CONDITIO	NS TO AVOID
	STABL	E	X		
NCOMPATABILIT	Y (Materials	to avoid)			
AZARDOUS DEC	OMPOSITION	PRODUCTS			
					CONDITIONS TO AVOID
HAZARDOUS		MAY OCCU	R	1	
OCTMERIZATION	- and the second	WILL NOT	OCCUR	X	/
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		AME: * HEA D BY: CRC 885 L 24 HOUR E	INDUSTR OUIS DRI	DEGREAS IES, INC. VE, WAR	SER MINSTE	# - MSDS03095 PRODUCTS - 03095, 3095T R, PA 18974 PHONE: (215) 674-4300 N - CALL CHEMTREC 1-800-424-9300	
1. INGREDIENTS	CAS #	ACGIH	OSHA	OTHER		6. HEALTH HAZARD DATA Primary Routes of Entry : Skin, Inhalation	•
Trichloroethylene 1,2 Butylene Oxide Carbon Dioxide	79-01-6 106-88-7 124-38-9	50 ppm NA 5000 ppm	50 ppm NA 10000	NA	70-95 1-10 1-10	Signs and Symptoms of Exposure 1. Acute Overexposure: Inhalation: headaches, dizziness, anesthesia, unconsciousness. Eyes: Causes pain and some irritation. Skin: repeated exposure may cause irritation. 2. Chronic overexposure:	
2. PHYSICAL DATA : Specific Gravity: 1.46	@ 70°F Va %	apor Pressur Volatile:	100	n @ 20°C		Repeated overexposures may cause liver and kidney effects and dermatitis. Medical Conditions Generally Aggravated by Exposure: High levels of vapor (8000 ppm+) may cause cardiac arrhythmias	
Boiling Point: 189°F Evaporation Rate: Fast Freezing Point: ND Vapor Density: 4.55 (air=1) pH: NA Appearance and Odor: Colorless liquid, irritating odor at high concentrations. Solubility: Slight solubility in water. Good solvent for many organic materials. 3. FIRE AND EXPLOSION DATA Flashpoint : none Flammable Limits : LEL: 8.0 UEL: 44.8 Extinguishing Media: Water fog						Chemical Listed as Carcinogen or Potential Carcinogen? National Toxicology Program: No IARC Monographs: No OSHA: No	
						 Emergency and First Aid Procedures: (If symptoms persist, call a physician) 1. Inhalation: Remove to fresh air. Apply artificial respiration if necessary. 2. Eyes: Flush with large amounts of water for 15 minutes. 3. Skin: Remove contaminated clothing. Wash exposed area with soap and water. 4. Ingestion: DO N. Proce vomiting. Call a physician. 	
						7. SPILL OR LEAK PROCEDURES Precautions to be taken in Handling and Storage: Store in a cool, dry area:	
Unusual Hazards: Aerosol cans may explode when heated above 120° F.				d		Steps to be taken in case material is released or spilled: Usually not a problem with aerosols. Area should be ventilated and absorbent used to pick up excess material.	
A. REACTIVITY AND STABILITY Stability: Goodavoid exposure to open flame, arcs, high temps Hazardous decomposition products: Thermal: Hydrogen chloride, chlorine, small amounts of phosgene Materials to avoid: Avoid storage in aluminum containers or contact with aluminum and/or zinc powders.						Waste Disposal: All used and unused Product should be disposed of in conformance with local, state and federal regulations.	
					· ·	8. SPECIAL PRECAUTIONS AND USE DIRECTIONS: Avoid skin contact and breathing of vapors. Vapors are heavier than air and will collect in low areas. Do not use in confined areas or low spots without adequate ventilation. If vapors are suspected in a low area, do	
5. PROTECTION INFORMATION Ventilation: Adequate to prevent accumulation of vapors Respiratory: Use NIOSH/MSHA approved respirators or self contained				If containe		not enter unless special breathing apparatus in used and an observer is present for assistance. Keep aerosols away from heat.	
breathing apparatus if vapors accumulate.						9. NFPA HAZARD RATINGS Health: 2 Flammability: 1 Reactivity: 0	
Gloves: Solvent resistant Eye & Face: Safety glasses Other Protective Equipment: Not normally required with aerosol usage.			y glasses		10. SARA Information This product contains the following chemicals that are subject to release reporting under section 313 of SARA Title III. Chemical name CAS #		

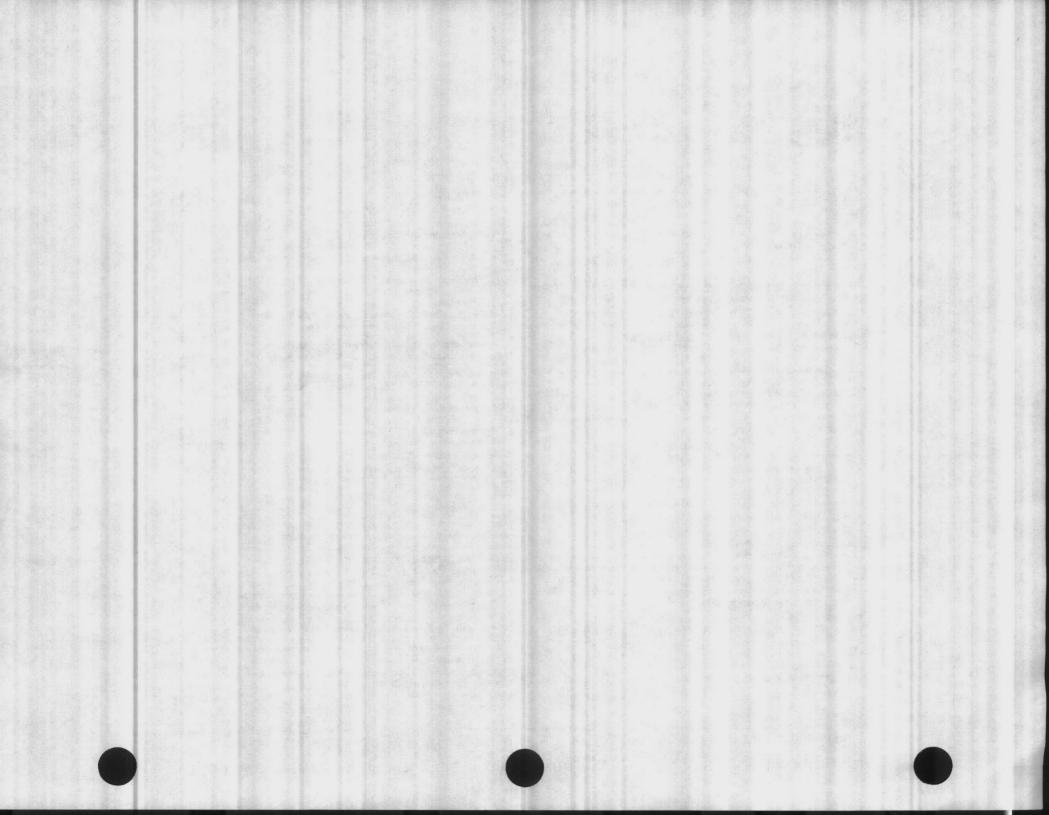
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Can until the can is completely empty



DESCRIPTION:

T-1100 Grease

Ventralizer

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Thero-Chem

INDUSTRIAL CHEMICALS AND ENVIRONMENTAL CONSULTANTS P. O. Box 1245 • Sumter. South Carolina 29150 • (803) 775-6671 P.4 ;;

T-160 GREASE NEUTRALIZER

T-160 is a grease neutralizing agent developed and formulated by Thero-Chem, Inc. to solve grease and oil problems in the wastewater systems of towns and municipalities, as well as in systems of the private sector. T-160 is revolutionary formula for liquifying grease, grease cakes, oil scum blankets, etc. that will positively and permanently prevent any resolidification of oil or grease products in sewage digesters, clairfiers, pumping stations, and wet wells. In short, T-160 liquifies grease and oils and keeps them permanently in suspension and therefore manageable throughout the phases of treatment in any wastewater systems.

T-160 performs the following functions:

Reduced foam level in aeration tank. Increases the rate of settling of sediment and sludge. Keeps grease and scum from settling and clogging pumping stations, sewer lines, mains, and the digester system. Will not harm pumps, seals, bearings, gaskets, etc.;therefore, saving down-time on pump repairs and maintenance. Allows natural degradation process to occur; bacteria aren't hindered in natural digestion of sewage waste. Lessens air consumption need for BOD factor. Prevents concrete erosion and protects costly equipment. Harmless to plant, animal, and marine life when used as directed. Increases plant capacity through greater efficiency. Eliminates tedious scrubbing, scraping and bucket operations. Allows clean-up without shutting down the plant. Helps keep odor problems under control.

T-160 is a safe product. There is nothing in the formula that is harmful to the environment or to persons handling the product when used as prescribed. T-160 is completely biogradable and contains nothing that will interfere with the natural biological oxygen demand (BOD) in wastewater. systems.

GENERAL SERVICES ADMINISTRATION Office of Federal Supply & Services Authorized Federal Supply Schedule Pricelist FSC Class - 6850 Contract Number GS 00F-87421 Contract Period - 10/25/85 - 10/25/87 Item Number NIS-G-0822 Grease Neutralizing Agent Net Price - \$12.00 per gal. in 5 gal. or 55 gal. containers

CONTRACTOR: THERO-CHEM, INC. Business size - small

