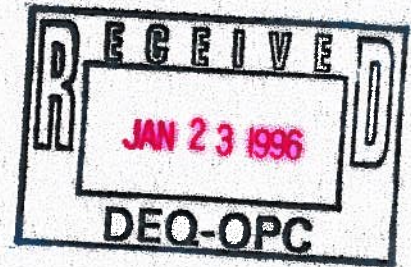


**APPLICATION FOR TITLE V  
AIR OPERATING PERMIT**  
**APPENDIX C - VOLUME III**  
**MATERIAL SAFETY DATA SHEETS**

PREPARED FOR:



 **HERCULES**

**CHEMICAL SPECIALTIES**

**HATTIESBURG, MISSISSIPPI  
FORREST COUNTY**

**JANUARY 1996**

PREPARED BY:

**Eco-Systems, Inc.**  
*Environmental Engineers and Scientists*

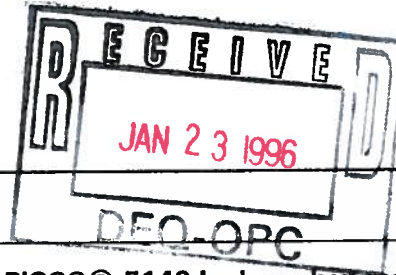


**2675 RIVER RIDGE ROAD  
JACKSON, MISSISSIPPI 39216  
PHONE (601) 366-0663**

# **HERCULES**

Hercules Incorporated  
Hercules Plaza  
Wilmington, DE 19894-0001  
(302) 594-5000 (24 hrs)

MSDS NO.: 866 2002 0500 REV.: 02  
ISSUE DATE: 12/02/94  
SUPERSEDES: 866 2002 0500 REV.: 01  
06/26/92



## **SECTION 1: PRODUCT IDENTIFICATION**

**PRODUCT NAME:** PICCO® 5140 hydrocarbon resin

**APPEARANCE:** solid or flake

**COLOR:** amber

**ODOR:** typical hydrocarbon

**CASRN:** 68240-01-7

**CHEMICAL DESCRIPTION:** aromatic hydrocarbon resin

### **HMIS RATINGS**

**Health hazard:** 0 MINIMAL

**Flammability hazard:** 1 SLIGHT

**Reactivity hazard:** 0 MINIMAL

## **SECTION 2: HAZARDOUS COMPONENT INFORMATION**

This product is not a health hazard according to the OSHA Hazard Communication Standard 29CFR1910.1200.

If this product is used in a manner that could generate particulates (dust), refer to MSDS Section 8, Recommended Exposure Limits and Personal Protective Equipment.

## **SECTION 3: HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** *WARNING!*

Static charges generated by emptying package in or near flammable vapors may cause flash fire.  
May form flammable dust-air mixtures.  
For bags of 1000 lbs. or greater, see MSDS Section 7, Handling and Storage, for additional information.

### **POTENTIAL HEALTH EFFECTS:**

May cause eye irritation by mechanical abrasion.  
Prolonged or repeated contact may cause skin irritation.  
Inhalation of dust may cause respiratory tract irritation.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

## **SECTION 4: FIRST AID PROCEDURES**

**EYES:** Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

**SKIN:** Wash with soap and water. For HOT or MOLTEN PRODUCT: Immediately cool skin burns with water and cold packs for at least 15 minutes. Do NOT put ice directly on the skin. Do NOT attempt to remove solidified resin from the skin as severe tissue damage may result. See Note to Physician.

**INHALATION:** Remove to fresh air. Get medical attention if irritation persists.

**NOTE TO PHYSICIAN:** Material should not be forcibly pulled from the skin. Mineral oil may be used to loosen and soften the material.

## SECTION 5: FIRE HAZARDS

### FIRE FIGHTING PROCEDURES:

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

### EXTINGUISHING MEDIA:

Water spray, dry chemical, foam, carbon dioxide or halon may be used on fires involving this product.

### CONDITIONS TO AVOID:

Avoid conditions that generate dust. This product may form flammable dust-air mixtures.

### HAZARDOUS COMBUSTION PRODUCTS:

If heated to combustion, the following substances may be formed: carbon monoxide, carbon dioxide, aldehydes, carboxylic acids, and smoke.

**FLASH POINT:** 530 ° F 277 ° C

## SECTION 6: ACCIDENTAL RELEASE MEASURES

If product is not contaminated, scoop into clean containers for use. If product is contaminated, scoop into containers for disposal.

In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

## SECTION 7: HANDLING AND STORAGE

### GENERAL MEASURES:

Ground all equipment. Blanket vessel with inert gas when emptying bags where flammable vapors may be present. Ground operator and pour material slowly into conductive, grounded chute. For large bags (1000 lbs or greater) a ground cable MUST be attached to the bag ground connection.

Control inventory. Rotate stock periodically.

### MATERIALS OR CONDITIONS TO AVOID:

Keep away from heat, flame, sparks and other ignition sources.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL HYGIENIC PRACTICES:

Avoid breathing dust, vapor or mist.  
Avoid contact with eyes, skin, and clothing.  
Avoid contamination of food, beverages, or smoking materials.  
Wash thoroughly after handling, and before eating, drinking or smoking.

### COMMENDED EXPOSURE LIMITS:

**PARTICULATES (dust):** If used under conditions that generate particulates (dust), the OSHA TWA of 5 mg/m<sup>3</sup> respirable fraction (15 mg/m<sup>3</sup> total), and ACGIH TLV-TWA of 10 mg/m<sup>3</sup> should be observed.

**PERSONAL PROTECTIVE EQUIPMENT:**

Safety glasses  
Impervious gloves

Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturer's recommendations.

Personnel exposed to hot molten material should wear protective clothing that provides protection against thermal burns. Full face shield, lined rain suit, and lined impervious gloves are recommended.

**WORK PRACTICES AND ENGINEERING CONTROLS:**

Eyewash fountains and safety showers should be easily accessible.

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

Keep away from ignition sources.

May form flammable dust-air mixtures.

**PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE:**

Eliminate ignition sources and prevent build-up of static electrical charges.

Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs. Keep area clean. Product will burn.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Volatile (Wt.), %:	negligible at 20°C	
Solubility in Water:	negligible at 20°C	
Specific Gravity:	1.07	
Evaporation Rate:	slower than butyl acetate	
Softening Point:	284-293 ° F	140-145 ° C

**SECTION 10: STABILITY AND REACTIVITY****GENERAL STABILITY CONSIDERATIONS:**

Stable under recommended handling and storage conditions.

**INCOMPATIBLE MATERIALS:**

None known

**HAZARDOUS DECOMPOSITION PRODUCTS:**

None anticipated under normal or recommended handling and storage conditions.

**HAZARDOUS POLYMERIZATION:**

Not anticipated under normal or recommended handling and storage conditions.

**SECTION 11: TOXICOLOGICAL INFORMATION****REPORTED HUMAN EFFECTS:**

No human toxicity studies have been carried out with this product.

**REPORTED ANIMAL EFFECTS:**

No animal toxicity studies have been carried out with this product.

COMPONENT - hydrocarbon resin: Not toxic by OSHA/ANSI criteria based on acute animal peroral testing of this or a similar product (LD50 >500 mg/kg). Necropsy revealed effects on rat kidneys at test levels >1 g/kg.

**GENOTOXICITY INFORMATION:**

Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.

**SECTION 12: ECOLOGICAL INFORMATION****ECOTOXICITY:**

No ecological studies have been carried out on this product.

**SECTION 13: DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD:**

Incineration in accordance with applicable regulations is the recommended disposal method. Landfilling in a permitted solid or hazardous waste facility, meeting technical regulatory requirements, is a suitable alternative.

**SECTION 14: TRANSPORTATION INFORMATION**

For information regarding transportation of this product, please contact Hercules Transportation at (302) 594-7356.

**SECTION 15: REGULATORY INFORMATION****CHEMICAL INVENTORIES:**

U. S. TSCA Status: Included on TSCA inventory.

**SARA TITLE III****Sections 302 and 304:**

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

**Sections 311 and 312:**

NHH: Not a health hazard  
HC-3: Fire hazard

**Section 313:**

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

**CERCLA**

This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

**RCRA**

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

**SECTION 16: OTHER INFORMATION****LIST OF ACRONYMS:**

ACGIH: American Conference of Governmental Industrial Hygienists  
AICS: Australian Inventory of Chemical Substances  
AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level  
ANSI: American National Standards Institute  
: Ceiling  
.ASRN: Chemical Abstracts Service Registry Number  
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act  
DSL: Domestic Substances List (Canadian)  
EINECS: European Inventory of Existing Commercial Chemical Substances  
HMIS: Hazardous Materials Identification System  
IARC: International Agency for Research on Cancer  
MITI: Ministry of International Trade and Industry (Japanese)  
N/A: Not Applicable  
NDSL: Non-domestic Substances List (Canadian)  
NOR: Not Otherwise Regulated  
NTP: National Toxicology Program  
OSHA: Occupational Safety and Health Administration  
PEL: OSHA Permissible Exposure Limit  
RCRA: Resource Conservation and Recovery Act  
RQ: Reportable Quantity  
SARA: Superfund Amendment Reauthorization Act  
STEL: Short-Term Exposure Limit  
TLV: Threshold Limit Values (registered trademark of ACGIH)  
TPQ: Threshold Planning Quantity  
TSCA: Toxic Substances Control Act  
TWA: Time Weighted Average

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

TOLUENESULFONIC ACID  
HIGH PARA

Safety  
C. J. ...  
11-5-53

1. MATERIAL IDENTIFICATION

Specification number: 15

Manufacturer: Sloss Industries Corporation  
3500 35<sup>th</sup> Ave. North  
Birmingham, Alabama 35207

Phone numbers: Product information: 205/254-7915  
8:00 AM to 4:30 PM, Monday thru Friday  
24Hr Contact: 205/254-7846  
Transport Emergencies:  
Call CHEMTREC: 1/800/424-9300

DOT number: UN. 2585

Shipping name: Toluene sulfonic acid, solid  
(See Section 14)

Product name: Toluenesulfonic Acid, High Para

CAS name: Benzenesulfonic Acid, 4-methyl

CAS number: 104-15-4

Formula:  $CH_3C_6H_4SO_3H \cdot H_2O$

HMIS Rating: Health 3; Flammability 1; Reactivity 1;  
Personal Protection H

NFPA Rating: Health 3; Flammability 1; Reactivity 1

Synonyms: Methylbenzenesulfonic acid; Tosic acid;  
4-Toluenesulfonic acid; p-Tolylsulfonic acid;  
Kyselina p-Toluenesulfonova; 4-Methylbenzene  
sulfonic acid.

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2. COMPONENTS

<u>Material</u>	<u>CAS#</u>	<u>% by wt.</u>
Toluenesulfonic Acid High Para	104-15-4	89.0

These components are listed on the TSCA Inventory. See sections 3, 8, and 11 for exposure information.



### 3. HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW

WHITE POWDER with slight characteristic odor. Toluenesulfonic Acid High Para is a strong acid. It is corrosive to human tissue and reacts explosively with acetic anhydride + water (See reactivity Section 10). This material is a poison by ingestion. When heated to decomposition it emits toxic vapors of the SO<sub>x</sub> type.

#### HEALTH:

The health hazards associated with Toluenesulfonic Acid High Para are due primarily to its acidity. Toluenesulfonic Acid High Para is a strong acid. Exposure of the eyes, mucous membranes, or prolonged exposure of the skin to this material may result in destruction of tissue. Also this material is a harmful by ingestion.

#### Effects of Contact

Eyes: Avoid contact. Acid burns vary from those that heal completely to those that cause blindness.

Skin: Avoid contact. The effects of contact, even of short duration, can range from minor irritation to acute destruction of tissue.

Ingestion: Strong acids are poisons if ingested. In addition they cause the same type tissue damage to the mucosal membranes of the mouth, esophagus, and stomach that they cause to the eyes and skin.

Inhalation: Under normal conditions this material poses no inhalation hazard. At extreme temperatures the vapors are toxic.

#### Carcinogenicity:

Toluenesulfonic Acid High Para is not listed by NTP, OSHA, or IARC as a carcinogen or suspect carcinogen.

### 4. FIRST AID

#### Eyes or skin contact:

In the event of contact with the eyes or skin immediately begin flushing with water. Continue for at least 20 minutes. It is preferable to use cool water, not hot or cold. Water of extreme temperatures can cause additional injuries.

#### Ingestion:

If swallowed DO NOT INDUCE VOMITING. Get trained medical help immediately. If medical help is not available, one or two glasses of milk or water may be given. Do not exceed two glasses and never give anything by mouth to an unconscious person.

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#### 4. FIRST AID (CONTINUED)

##### Inhalation:

In the event of exposure to concentrated vapors, immediately move the exposed person to fresh air. If they are not breathing give artificial respiration. If breathing appears difficult give oxygen. Call for trained medical help immediately.

IN ALL CASES GET TRAINED MEDICAL HELP IMMEDIATELY.

##### NOTE TO PHYSICIAN

Toluenesulfonic Acid High Para "High Para" is a strong acid. The total acidity of this material is 26 by weight. The initial treatment of exposure to this material should be consistent with that for any strong acid. The initial signs and symptoms of exposure or ingestion may include: erythema and vesicle formation to penetrating ulcers for external contact, and crying, pain on swallowing, inability to swallow, mucous membrane burns, circumoral burns, hematemesis, abdominal pain, respiratory distress, shock and renal failure for ingestion.

Initial treatment for exposure of the eyes or skin should consist of irrigation with copious amounts of water or saline. For the eyes, the use of anesthetic agents is permissible, and retraction of the eye lids to ensure that the conjunctival cul-de-sacs are well washed is recommended. Be sure to remove all contaminants. Flushing should be continued for at least 20 to 30 minutes. A complete eye exam should follow. DO NOT USE NEUTRALIZERS OR OTHER ADDITIVES.

Where ingestion is involved DO NOT INDUCE VOMITING. Immediate dilution (within 30 minutes of ingestion) with one or two glasses of milk or water is the treatment of choice. Alkaline substances or carbonate preparations are contraindicated since when administered they may produce increased amounts of heat and carbon dioxide gas which presents an unacceptable risk of gastric perforation.

#### 5. FIRE AND EXPLOSION DATA

This material will not readily ignite. At elevated temperatures sulfur oxides vapors evolve.

Flash point: >230°F (>110°C)

Flammable limits (air % by vol.):

a. Lower explosive limit: not established

b. Upper explosive limit: not established

Autoignition: not established

Extinguishing media:

Small Fires: Dry chemical, carbon dioxide, and foam.

Large Fires: Water fog may be used but do not direct stream directly at material. Use fog to control vapors.

-Fire and Explosion:

Combustion products contain sulfur oxides.

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5. FIRE AND EXPLOSION DATA (CONTINUED)

Fire Fighting Instructions:

1. Use self-contained positive pressure breathing apparatus and chemical resistant protective clothing. (Structural fire fighting clothing is not effective for acids.)
2. Approach fire from upwind.
3. Dike fire control water for later disposal.

6. ACCIDENTAL RELEASE MEASURES

1. Do not touch or walk through spilled material. Stop leak if it can be done safely. KEEP DRY if possible. Wear adequate personal protection while working with spill. See Section 8.
2. Small Spills: Take up with a clean, dry shovel and place into a suitable container for later disposal or recycle. See Section 13.
3. Large Spills: Secure spill area. Use same procedure as for small spills. If material is exposed to water, dike around spill and save for later disposal or recycle. See Section 13.
4. Do not leave spill unattended.

7. HANDLING AND STORAGE

Handling:

1. This is a strong acid. Handle with care.
2. Handle in well ventilated area. In dusty conditions use a NIOSH/MSHA approved dust/mist respirator. See Section 8.
3. In routine handling of closed containers use chemical goggles and face shield, acid resistant gloves, and acid resistant apron.
4. Where direct contact is possible, use additional chemical resistant protective clothing.

Storage:

1. Store in a sealed polyethylene lined container.
2. Store in a cool, dry, well-ventilated location. (Do not store above 140°F (60°C) for long periods).
3. Store separate from combustibles and other reactive materials. See reactivity Section 10.
4. Do not stack boxes over four(4) high.
5. Do not puncture containers.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1. PEL for nuisance particulates is 15mg/m<sup>3</sup> for total dust and 5mg/m<sup>3</sup> for the respirable fraction. Handle in a well ventilated area.
2. In dusty conditions use a NIOSH/MSHA approved dust/mist air purifying respirator or airline supplied respirator depending on concentration.
3. In routine handling of closed containers use chemical goggles and face shield, acid resistant gloves, and acid resistant apron.
4. Where direct contact is possible, use additional chemical resistant protective clothing.

Exposure limits:

OSHA PEL: 15mg/m<sup>3</sup> Total dust  
5mg/m<sup>3</sup> Respirable dust

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White powder

Odor: Slight characteristic odor

Physical state: Solid

Total acidity: 25 to 26 percent by weight

Vapor pressure (mmHg): not established

Vapor density (air=1): not established

Boiling point: 284°F (140°C) @ 20mmHg

Melting point: 107°F (41°C)

Solubility in water: 0.67g/ml at 77° F (25° C)

Percent volatile by volume: not established

Specific gravity (H<sub>2</sub>O=1): 0.72g/ml at 77° F (25° C)

## 10. STABILITY AND REACTIVITY

Toluenesulfonic Acid (89.0% by wt.)

a. Stability: Stable

b. Hazardous Polymerization: Will not occur.

c. Incompatibility: Ferrous metals, leather, cotton. Reacts explosively with acetic anhydride+water.

d. Decomposition Products: SO<sub>x</sub> vapors.

## 11. TOXICOLOGICAL INFORMATION

Toxicity:

oral-rat; LD<sub>50</sub>: 2480mg/Kg

oral-mouse; LD<sub>50</sub>: 400mg/Kg

Exposure:

OSHA PEL: 15mg/m<sup>3</sup> Total dust

5mg/m<sup>3</sup> Respirable dust

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12. ECOLOGICAL INFORMATION

Environmental hazard. Keep out of water ways.

13. DISPOSAL INFORMATION

Upon disposal, Toluenesulfonic Acid High Para may become an EPA hazardous waste due to corrosivity (D002). Recycle or dispose of in accordance with Federal, State, and Local regulations.

This information is for Toluenesulfonic Acid High Para in its original form. Any alteration of this material may void this information.

14. TRANSPORTATION INFORMATION

Proper shipping name: Toluene sulfonic acid, solid

Hazard class: 8 (Corrosive)

UN no.: UN 2585

DOT/IMO label: Corrosive

Special provisions: None

Packaging:

a. Group: III

b. authorization: 49 CFR 173.213 or 173.240

c. exceptions: 49 CFR 173.154

Quantity limitations:

a. passenger, aircraft or rail: 25.0 Kilograms

b. cargo only, aircraft: 100.0 Kilograms

Stowage provisions: A

Reportable quantity: none

15. REGULATORY INFORMATION

TSCA STATUS:

On TSCA Inventory

CERCLA RQ:

None

SARA TITLE III:

Section 302 TPQ:

None

Section 304 EHS:

None

Section 311/312:

Acute

Section 313:

None

RCRA WASTE NUMBER:

None

California Proposition 65:

None

WHIMS:

None

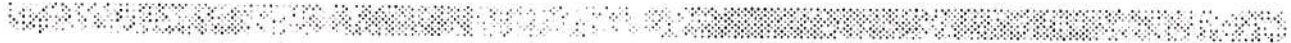
16. OTHER INFORMATION

Section(s) revised: All revised to new format and to include most up to date information

MSDS date: 9/93

Supersedes date: 4/30/91

The data of this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material. While the data contained herein is based on technical data that Sloss Industries Corporation believes to be reliable, it is intended for use by persons having technical skill and at their own discretion and risk.



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R

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865  
M A T E R I A L S A F E T Y D A T A S H E E T  
24-HOUR EMERGENCY TELEPHONE -- (908) 859-2151  
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

264 -03  
EFFECTIVE: 05/04/94

CALCIUM ACETATE, MONOHYDRATE

PAGE: 1  
ISSUED: 07/08/94

J.T.BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: CALCIUM ACETATE, MONOHYDRATE  
COMMON SYNONYMS: CALCIUM ACETATE HYDRATE; CALCIUM DIACETATE, MONOHYDRATE  
CHEMICAL FAMILY: CALCIUM COMPOUNDS  
FORMULA: (CH3COO)2CA H2O  
FORMULA WT.: 176.19  
CAS NO.: 5743-26-0  
NIOSH/RTECS NO.: AF7875000  
PRODUCT USE: LABORATORY REAGENT  
PRODUCT CODES: 1266

PRECAUTIONARY LABELING

BAKER SAF-T-DATA\* SYSTEM

HEALTH	-	1	SLIGHT
FLAMMABILITY	-	1	SLIGHT
REACTIVITY	-	0	NONE
CONTACT	-	1	SLIGHT

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT

U.S. PRECAUTIONARY LABELING

CAUTION

MAY CAUSE IRRITATION.  
DURING USE AVOID CONTACT WITH EYES, SKIN, CLOTHING. WASH THOROUGHLY AFTER HANDLING. WHEN NOT IN USE KEEP IN TIGHTLY CLOSED CONTAINER.

INTERNATIONAL LABELING

AVOID CONTACT WITH EYES. AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER. KEEP CONTAINER TIGHTLY CLOSED.

SAF-T-DATA\* STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

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CALCIUM ACETATE, MONOHYDRATE

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SECTION II - COMPONENTS

=====

COMPONENT	CAS NO.	WEIGHT %	OSHA/PEL	ACGIH/TLV
CALCIUM ACETATE, MONOHYDRATE	5743-26-0	99-100	N/E	N/E

THE CAS NUMBER FOR CALCIUM ACETATE, ANHYDROUS IS 62-54-4

=====

SECTION III - PHYSICAL DATA

=====

BOILING POINT: N/A	VAPOR PRESSURE (MMHG): N/A
MELTING POINT: N/A	VAPOR DENSITY (AIR=1): N/A
SPECIFIC GRAVITY: 1.50 (H2O=1)	EVAPORATION RATE: N/A
SOLUBILITY(H2O): APPRECIABLE (>10%)	% VOLATILES BY VOLUME: 0 (21 C)

pH: N/A

ODOR THRESHOLD (P.P.M.): N/A                      PHYSICAL STATE: SOLID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: WHITE POWDER. ODORLESS.

=====

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

=====

FLASH POINT (CLOSED CUP): N/A

AUTOIGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS:    UPPER - N/A                      LOWER - N/A

FIRE EXTINGUISHING MEDIA  
USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

CONTINUED ON PAGE: 3

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CALCIUM ACETATE, MONOHYDRATE

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ISSUED: 07/08/94

=====  
SECTION IV - FIRE AND EXPLOSION HAZARD DATA (CONTINUED)  
=====

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE.

UNUSUAL FIRE & EXPLOSION HAZARDS  
NONE IDENTIFIED.

TOXIC GASES PRODUCED  
CARBON MONOXIDE, CARBON DIOXIDE

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT  
NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE  
NONE IDENTIFIED.

=====  
SECTION V - HEALTH HAZARD DATA  
=====

THRESHOLD LIMIT VALUE (TLV/TWA): NOT ESTABLISHED

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): NOT ESTABLISHED

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR CALCIUM ACETATE, MONOHYDRATE 4280 MG/KG  
CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

CARCINOGENICITY  
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS  
NONE IDENTIFIED.

CONTINUED ON PAGE: 4



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CALCIUM ACETATE, MONOHYDRATE

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=====  
SECTION V - HEALTH HAZARD DATA (CONTINUED)  
=====

EFFECTS OF OVEREXPOSURE

INHALATION:           IRRITATION OF MUCOUS MEMBRANES

SKIN CONTACT:        IRRITATION

EYE CONTACT:         IRRITATION

SKIN ABSORPTION:    NONE IDENTIFIED

INGESTION:           INGESTION OF LARGE QUANTITIES MAY CAUSE GASTROINTESTINAL  
                          IRRITATION

CHRONIC EFFECTS:    NONE IDENTIFIED

TARGET ORGANS

NONE IDENTIFIED

TOXICOLOGICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

NONE IDENTIFIED

PRIMARY ROUTES OF ENTRY

NONE INDICATED

EMERGENCY AND FIRST AID PROCEDURES

INGESTION:           IF SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE  
                          LARGE AMOUNTS OF WATER. GET MEDICAL ATTENTION.

INHALATION:          IF A PERSON BREATHES IN LARGE AMOUNTS, MOVE THE EXPOSED  
                          PERSON TO FRESH AIR.

SKIN CONTACT:        IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH PLENTY OF  
                          SOAP AND WATER FOR AT LEAST 15 MINUTES.

EYE CONTACT:         IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF  
                          WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: NO - CHRONIC: NO   FLAMMABILITY: NO   PRESSURE: NO   REACTIVITY: NO

CONTINUED ON PAGE: 5

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=====

SECTION V - HEALTH HAZARD DATA (CONTINUED)

=====

EXTREMELY HAZARDOUS SUBSTANCE: NO  
CERCLA HAZARDOUS SUBSTANCE: NO  
SARA 313 TOXIC CHEMICALS: NO  
TSCA INVENTORY: YES

=====

SECTION VI - REACTIVITY DATA

=====

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR  
CONDITIONS TO AVOID: HEAT, FLAME  
INCOMPATIBLES: STRONG OXIDIZING AGENTS  
DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE

=====

SECTION VII - SPILL & DISPOSAL PROCEDURES

=====

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE  
WEAR SUITABLE PROTECTIVE CLOTHING. CAREFULLY SWEEP UP AND REMOVE.

DISPOSAL PROCEDURE  
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL  
ENVIRONMENTAL REGULATIONS.

=====

SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

=====

VENTILATION: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION TO  
KEEP FUME OR DUST LEVELS AS LOW AS POSSIBLE.

RESPIRATORY PROTECTION: NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS  
EXIST. IF AIRBORNE CONCENTRATION IS HIGH, USE AN  
APPROPRIATE RESPIRATOR OR DUST MASK.

EYE/SKIN PROTECTION: SAFETY GOGGLES, PROPER GLOVES ARE RECOMMENDED.

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CALCIUM ACETATE, MONOHYDRATE

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=====  
SECTION IX - STORAGE AND HANDLING PRECAUTIONS  
=====

SAF-T-DATA\* STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

STORAGE REQUIREMENTS

KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY GENERAL CHEMICAL STORAGE AREA.

=====  
SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION  
=====

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)  
MARINE POLLUTANTS: NO

AIR (I.C.A.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

U.S. CUSTOMS HARMONIZATION NUMBER: 29152900007

=====  
NOTE: WHEN HANDLING LIQUID PRODUCTS, SECONDARY PROTECTIVE CONTAINERS MUST BE USED FOR CARRYING.

-N/A = NOT APPLICABLE, OR NOT AVAILABLE;

N/E = NOT ESTABLISHED.

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET MEETS THE REQUIREMENTS OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ACT AND REGULATIONS PROMULGATED THEREUNDER (29 CFR 1910.1200 ET. SEQ.) AND THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PERSON TRAINED IN, OR SUPERVISED BY A PERSON TRAINED IN, CHEMICAL HANDLING. THE USER IS RESPONSIBLE FOR DETERMINING THE PRECAUTIONS AND DANGERS OF THIS CHEMICAL FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHING INCLUDING EYE AND FACE GUARDS AND RESPIRATORS MUST BE USED TO AVOID CONTACT WITH MATERIAL OR BREATHING CHEMICAL VAPORS/FUMES.

EXPOSURE TO THIS PRODUCT MAY HAVE SERIOUS ADVERSE HEALTH EFFECTS. THIS CHEMICAL MAY INTERACT WITH OTHER SUBSTANCES. SINCE THE POTENTIAL USES

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CALCIUM ACETATE, MONOHYDRATE

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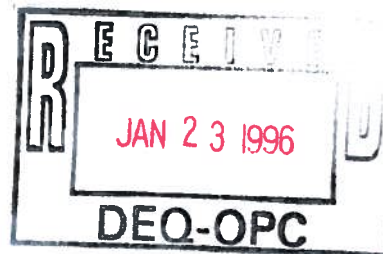
THE USER SHOULD RECOGNIZE THAT THIS PRODUCT CAN CAUSE SEVERE INJURY AND EVEN DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET.

NOTE: CHEMTREC, CANUTEC, AND NATIONAL RESPONSE CENTER EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

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C0407 -04  
EFFECTIVE: 01/04/94

CALCIUM HYDROXIDE

PAGE: 1  
ISSUED: 01/15/94

J.T.BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865

=====  
SECTION I - PRODUCT IDENTIFICATION  
=====

PRODUCT NAME: CALCIUM HYDROXIDE  
COMMON SYNONYMS: CALCIUM HYDRATE; SLAKED LIME  
CHEMICAL FAMILY: CALCIUM COMPOUNDS  
FORMULA: CA(OH)2  
FORMULA WT.: 74.09  
CAS NO.: 1305-62-0  
NIOSH/RTECS NO.: EW2800000  
PRODUCT USE: LABORATORY REAGENT  
PRODUCT CODES: 1374,1372,5143,5033

=====  
PRECAUTIONARY LABELING  
=====

BAKER SAF-T-DATA\* SYSTEM

HEALTH	-	1	SLIGHT
FLAMMABILITY	-	0	NONE
REACTIVITY	-	1	SLIGHT
CONTACT	-	2	MODERATE

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT

U.S. PRECAUTIONARY LABELING

WARNING

HARMFUL IF SWALLOWED. CAUSES SEVERE IRRITATION.  
DO NOT GET IN EYES, ON SKIN, ON CLOTHING. DO NOT BREATHE DUST. KEEP IN  
TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY  
AFTER HANDLING.

INTERNATIONAL LABELING

IRRITATING TO SKIN.  
DO NOT BREATHE DUST. AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF  
SOAP AND WATER.

SAF-T-DATA\* STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

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SECTION II - COMPONENTS

=====

COMPONENT	CAS NO.	WEIGHT %	OSHA/PEL	ACGIH/TLV
CALCIUM HYDROXIDE	1305-62-0	95-100	5 MG/M	5 MG/M

=====

SECTION III - PHYSICAL DATA

=====

BOILING POINT: N/A VAPOR PRESSURE (MMHG): N/A  
MELTING POINT: 580 C (1076 F) VAPOR DENSITY (AIR=1): N/A  
(AT 760 MM HG)  
SPECIFIC GRAVITY: 2.3 EVAPORATION RATE: N/A  
(H2O=1)  
SOLUBILITY(H2O): NEGLIGIBLE (<0.1%) % VOLATILES BY VOLUME: 0  
(21 C)  
pH: N/A

ODOR THRESHOLD (P.P.M.): N/A PHYSICAL STATE: SOLID  
COEFFICIENT WATER/OIL DISTRIBUTION: N/A  
APPEARANCE & ODOR: WHITE CRYSTALS OR POWDER. ODORLESS.

=====

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

=====

FLASH POINT (CLOSED CUP): N/A  
AUTOIGNITION TEMPERATURE: N/A  
FLAMMABLE LIMITS: UPPER - N/A LOWER - N/A  
FIRE EXTINGUISHING MEDIA  
USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.  
SPECIAL FIRE-FIGHTING PROCEDURES  
FIREFIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS WITH FULL  
FACEPIECE OPERATED IN POSITIVE PRESSURE MODE.

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CALCIUM HYDROXIDE

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=====  
SECTION IV - FIRE AND EXPLOSION HAZARD DATA (CONTINUED)  
=====

UNUSUAL FIRE & EXPLOSION HAZARDS  
NONE IDENTIFIED.

TOXIC GASES PRODUCED  
NONE IDENTIFIED

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT  
NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE  
NONE IDENTIFIED.

=====  
SECTION V - HEALTH HAZARD DATA  
=====

THRESHOLD LIMIT VALUE (TLV/TWA): 5 MG/M

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): 5 MG/M

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR CALCIUM HYDROXIDE 7340 MG/KG  
ORAL MOUSE LD50 FOR CALCIUM HYDROXIDE 7300 MG/KG  
CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

CARCINOGENICITY  
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS  
NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: IRRITATION OF UPPER RESPIRATORY TRACT

SKIN CONTACT: SEVERE IRRITATION OR BURNS, PROLONGED CONTACT MAY CAUSE  
DERMATITIS

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CALCIUM HYDROXIDE

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=====  
SECTION V - HEALTH HAZARD DATA (CONTINUED)  
=====

EYE CONTACT: SEVERE IRRITATION OR BURNS

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION: IRRITATION AND BURNS TO MOUTH AND STOMACH, NAUSEA,  
VOMITING, DIARRHEA

CHRONIC EFFECTS: NONE IDENTIFIED

TARGET ORGANS  
EYES, SKIN

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE  
CHRONIC RESPIRATORY DISEASE, SKIN DISORDERS

PRIMARY ROUTES OF ENTRY  
INHALATION, INGESTION, SKIN CONTACT, EYE CONTACT

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF SWALLOWED, DO NOT INDUCE VOMITING. IF  
CONSCIOUS, GIVE LARGE AMOUNTS OF WATER.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE  
ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE  
OXYGEN.

SKIN CONTACT: IN CASE OF CONTACT, FLUSH SKIN WITH WATER.

EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF  
WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: YES CHRONIC: YES FLAMMABILITY: NO PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: NO  
CERCLA HAZARDOUS SUBSTANCE: NO  
SARA 313 TOXIC CHEMICALS: NO  
TSCA INVENTORY: YES

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CALCIUM HYDROXIDE

PAGE: 6  
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=====  
SECTION IX - STORAGE AND HANDLING PRECAUTIONS  
=====

SAF-T-DATA\* STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

STORAGE REQUIREMENTS

KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY GENERAL CHEMICAL STORAGE AREA. ISOLATE FROM INCOMPATIBLE MATERIALS.

=====  
SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION  
=====

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)  
MARINE POLLUTANTS: NO

AIR (I.C.A.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

U.S. CUSTOMS HARMONIZATION NUMBER: 2825900000

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# MATERIAL SAFETY DATA SHEET

*Safety*  
**Magie**  
 Bros Oil Company  
A DIVISION OF PERMEXIL PRODUCTS COMPANY

12-14-90

## PRODUCT IDENTIFICATION

Manufacturer's Name	MAGIE BROTHERS OIL COMPANY	CAS Number: 8042-47-5												
Address	9101 FULLERTON AVENUE P.O. BOX 1089 FRANKLIN PARK, ILLINOIS 60131-1089	MSDS Code: 000079												
		<table border="1"> <tr> <th colspan="2">HMIS Hazard Identification</th> </tr> <tr> <th>Degree of Hazard</th> <th>Hazard Ratings</th> </tr> <tr> <td>Health: 0</td> <td>0 - Least</td> </tr> <tr> <td>Fire: 1</td> <td>1 - Slight</td> </tr> <tr> <td>Reactivity: 0</td> <td>2 - Moderate</td> </tr> <tr> <td></td> <td>3 - High</td> </tr> <tr> <td></td> <td>4 - Extreme</td> </tr> </table>	HMIS Hazard Identification		Degree of Hazard	Hazard Ratings	Health: 0	0 - Least	Fire: 1	1 - Slight	Reactivity: 0	2 - Moderate		3 - High
HMIS Hazard Identification														
Degree of Hazard	Hazard Ratings													
Health: 0	0 - Least													
Fire: 1	1 - Slight													
Reactivity: 0	2 - Moderate													
	3 - High													
	4 - Extreme													
Emergency Telephone No.	(713) 256-6070													
Trade Name	MAGIESOL® 47 OIL													
Synonyms	TECHNICAL WHITE OILS													

## CONTENTS

COMPONENT NAME CAS NUMBER	HAZARDOUS IN BLEND	PERCENTAGE MIN MAX	COMPONENT EXPOSURE LIMITS	UNITS
TECHNICAL WHITE OILS 8042-47-5	NO	100.00	OSHA PEL ACGIH TLV	NO LIMIT NO LIMIT

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BY: ENVIRONMENTAL SAFETY & HEALTH (713) 546-8512 EFFECTIVE DATE: APRIL 13, 1990

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REQUIRED UNDER USDL SAFETY AND HEALTH REGULATIONS FOR SHIP REPAIRING, SHIPBUILDING, AND SHIPBREAKING (29 CFR 1915, 1916, 1917).

**FIRE PROTECTION INFORMATION**

FLASH POINT 215F

TEST METHOD FMCC

AUTOIGNITION TEMPERATURE 420F

TEST METHOD ASTH E-659

FLAMMABLE LIMITS IN AIR % BY VOL

LOWER 1.1

UPPER 6.0

EXTINGUISHING MEDIA

USE DRY CHEMICAL, FOAM, OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES

WATER MAY BE INEFFECTIVE BUT CAN BE USED TO COOL CONTAINERS EXPOSED TO HEAT OR FLAME. CAUTION SHOULD BE EXERCISED WHEN USING WATER OR FOAM AS FROTHING MAY OCCUR, ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID.

UNUSUAL FIRE AND EXPLOSIVE CONDITIONS

DENSE SMOKE MAY BE GENERATED WHILE BURNING. CARBON MONOXIDE, CARBON DIOXIDE, AND OTHER OXIDES MAY BE GENERATED AS PRODUCTS OF COMBUSTION.

STABILITY (THERMAL, LIGHT, ETC.)

STABLE

CONDITIONS TO AVOID

NONE

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR

CONDITIONS TO AVOID

NONE

INCOMPATIBILITY MATERIALS TO AVOID

MAY REACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS

NONE

**STEPS TO BE  
TAKEN IF  
MATERIAL IS  
RELEASED OR  
SPILLED**

CONSULT HEALTH EFFECT INFORMATION IN SECTION III, PERSONAL HEALTH PROTECTION INFORMATION IN SECTION V, FIRE PROTECTION INFORMATION IN SECTION VI, AND REACTIVITY DATA IN SECTION VII. NOTIFY APPROPRIATE AUTHORITIES OF SPILL. CONTAIN SPILL IMMEDIATELY. DO NOT ALLOW SPILL TO ENTER SEWERS OR WATERCOURSES. REMOVE ALL SOURCES OF IGNITION. ABSORB WITH APPROPRIATE INERT MATERIAL SUCH AS SAND, CLAY, ETC.. LARGE SPILLS MAY BE PICKED UP USING VACUUM PUMPS, SHOVELS, BUCKETS, OR OTHER MEANS AND PLACED IN DRUMS OR OTHER SUITABLE CONTAINERS.

**WASTE DISPOSAL  
METHOD**

ALL DISPOSALS MUST COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS. THE MATERIAL, IF SPILLED OR DISCARDED, MAY BE A REGULATED WASTE. REFER TO STATE AND LOCAL REGULATIONS. CAUTION: IF REGULATED SOLVENTS ARE USED TO CLEAN UP SPILLED MATERIAL, THE RESULTING WASTE MIXTURE MAY BE REGULATED. DEPARTMENT OF TRANSPORTATION (DOT) REGULATIONS MAY APPLY FOR TRANSPORTING THIS MATERIAL WHEN SPILLED. WASTE MATERIAL MAY BE LANDFILLED OR INCINERATED AT AN APPROVED FACILITY. MATERIALS SHOULD BE RECYCLED IF POSSIBLE.

**HANDLING AND  
STORAGE  
REQUIREMENTS**

DO NOT TRANSFER TO UNMARKED CONTAINERS. STORE IN CLOSED CONTAINERS AWAY FROM HEAT, SPARKS, OPEN FLAME, OR OXIDIZING MATERIALS. THIS PRODUCT IS NOT CLASSIFIED AS HAZARDOUS UNDER DOT REGULATIONS. FIRE EXTINGUISHERS SHOULD BE KEPT READILY AVAILABLE. SEE NFPA 30 AND OSHA 1910.106--FLAMMABLE AND COMBUSTIBLE LIQUIDS.

**ADDITIONAL  
INFORMATION**

NOT A CONTROLLED PRODUCT UNDER THE CANADIAN WHMIS.

**PHYSICAL PROPERTIES**

BOILING POINT	464F - 525F	PERCENT VOLATILE	100
MELTING POINT	NO DATA	VAPOR DENSITY (AIR=1)	6.72
COLOR	CLEAR LIQUID.	EVAPORATION RATE (EE=1)	NO DATA
ODOR	ODORLESS.	SPECIFIC GRAVITY	0.8003 @ 60/60F
VAPOR PRESSURE	< 0.1MM HG @ 70F	MOLECULAR WEIGHT	195
SOLUBILITY	INSOLUBLE IN WATER. SOLUBLE IN HYDROCARBONS.		

**PERSONAL PROTECTIVE EQUIPMENT****EYE PROTECTION**

EYE PROTECTION IS NOT REQUIRED UNDER CONDITIONS OF NORMAL USE. IF MATERIAL IS HANDLED SUCH THAT IT COULD BE SPLASHED INTO EYES, WEAR PLASTIC FACE SHIELD OR SPLASH-PROOF SAFETY GOGGLES.

**SKIN PROTECTION**

NO SKIN PROTECTION IS REQUIRED FOR SINGLE, SHORT DURATION EXPOSURES. FOR PROLONGED OR REPEATED EXPOSURES, USE IMPERVIOUS CLOTHING (BOOTS, GLOVES, APRONS, ETC.) OVER PARTS OF THE BODY SUBJECT TO EXPOSURE. IF HANDLING HOT MATERIAL, USE INSULATED PROTECTIVE CLOTHING (BOOTS, GLOVES, APRONS, ETC.).

**RESPIRATORY PROTECTION**

RESPIRATORY PROTECTION IS NOT REQUIRED UNDER CONDITIONS OF NORMAL USE. IF VAPOR OR MIST IS GENERATED WHEN THE MATERIAL IS HEATED OR HANDLED, USE AN ORGANIC VAPOR RESPIRATOR WITH A DUST AND MIST FILTER. ALL RESPIRATORS MUST BE NIOSH CERTIFIED. DO NOT USE COMPRESSED OXYGEN IN HYDROCARBON ATMOSPHERES.

**VENTILATION**

IF VAPOR OR MIST IS GENERATED WHEN THE MATERIAL IS HEATED OR HANDLED, ADEQUATE VENTILATION IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE MUST BE PROVIDED TO MAINTAIN CONCENTRATIONS BELOW THE SPECIFIED EXPOSURE OR FLAMMABLE LIMITS.

**OTHER**

CONSUMPTION OF FOOD AND BEVERAGE SHOULD BE AVOIDED IN WORK AREAS WHERE HYDROCARBONS ARE PRESENT. ALWAYS WASH HANDS AND FACE WITH SOAP AND WATER BEFORE EATING, DRINKING, OR SMOKING.

**EYE CONTACT**

THIS PRODUCT IS MINIMALLY IRRITATING TO THE EYES UPON DIRECT CONTACT. BASED ON TESTING OF SIMILAR PRODUCTS AND/OR COMPONENTS.

**SKIN CONTACT**

THIS PRODUCT IS NOT EXPECTED TO CAUSE ANY SKIN IRRITATION UPON DIRECT SINGLE OR REPEATED AND PROLONGED CONTACT; HOWEVER, SIMILAR CHEMICAL COMPOSITION PRODUCTS APPLIED TO THE SKIN OF LABORATORY ANIMALS RESULTED IN MINIMAL TO SLIGHT DERMAL IRRITATION.

**INHALATION**

THIS PRODUCT HAS A LOW VAPOR PRESSURE AND IS NOT EXPECTED TO PRESENT AN INHALATION HAZARD AT AMBIENT CONDITIONS. CAUTION SHOULD BE TAKEN TO PREVENT AEROSOLIZATION OR MISTING OF THIS PRODUCT; THE PERMISSIBLE EXPOSURE LIMIT (PEL) AND THRESHOLD LIMIT VALUE (TLV) FOR THIS PRODUCT AS OIL MIST IS 5 MG/M3. EXPOSURES BELOW 5 MG/M3 APPEAR TO BE WITHOUT SIGNIFICANT HEALTH RISK. THE SHORT-TERM EXPOSURE LIMIT FOR THIS PRODUCT AS AN OIL MIST IS 10 NG/M3. SEE HEALTH DATA SECTION BELOW.

**INGESTION**

INGESTION IS RELATIVELY NON-TOXIC UNLESS ASPIRATION OCCURS. THIS PRODUCT HAS LAXATIVE PROPERTIES AND MAY RESULT IN ABDOMINAL CRAMPS AND DIARRHEA. SEE HEALTH DATA SECTION BELOW.

**HEALTH DATA**

EXPOSURE TO A LARGE SINGLE DOSE, OR REPEATED SMALL DOSES OF MINERAL OIL BY INHALATION, ASPIRATION OR INGESTION LEADING TO ASPIRATION CAN LEAD TO LIPID PNEUMONIA OR LIPID GRANULOMA. THESE ARE LOW-GRADE, CHRONIC, LOCALIZED TISSUE REACTIONS. SHORTNESS OF BREATH AND COUGH ARE THE MOST COMMON SYMPTOMS. \*\*\*\*\* THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CONCLUDED THAT HIGHLY REFINED MINERAL OILS ARE GROUP 3 SUBSTANCES, "NOT CLASSIFIABLE AS TO THEIR CARCINOGENICITY TO HUMANS," BASED ON INADEQUATE HUMAN AND INADEQUATE ANIMAL EVIDENCE. IARC HAS ALSO CONCLUDED THAT THERE IS NO EVIDENCE FOR THE CARCINOGENICITY TO EXPERIMENTAL ANIMALS OF WHITE OILS WHEN ADMINISTERED BY ROUTES OTHER THAN BY INTRAPERITONEAL INJECTION. THIS SUBSTANCE IS NOT CARCINOGENIC ACCORDING TO THE OSHA HAZARD COMMUNICATION STANDARD. \*\*\*\*\* ASPIRATION MAY LEAD TO CHEMICAL PNEUMONITIS WHICH IS CHARACTERIZED BY PULMONARY EDEMA AND HEMORRAGE, AND MAY BE FATAL. SIGNS OF LUNG INVOLVEMENT INCLUDE INCREASED RESPIRATION RATE, INCREASED HEART RATE, AND A BLuish DISCOLORATION OF THE SKIN. COUGHING, CHOKING, AND GAGGING ARE OFTEN NOTED AT THE TIME OF ASPIRATION. GASTROINTESTINAL DISCOMFORT MAY DEVELOP, FOLLOWED BY VOMITING, WITH A FURTHER RISK OF ASPIRATION.



**EMERGENCY FIRST AID PROCEDURES**

**EYE CONTACT**

IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER AND CONTINUE FLUSHING UNTIL IRRITATION SUBSIDES. IF MATERIAL IS HOT, TREAT FOR THERMAL BURNS AND TAKE VICTIM TO HOSPITAL IMMEDIATELY.

**SKIN CONTACT**

REMOVE CONTAMINATED CLOTHING. IF MATERIAL IS HOT, SUBMERGE INJURED AREA IN COLD WATER. IF VICTIM IS SEVERELY BURNED, REMOVE TO A HOSPITAL IMMEDIATELY.

**INHALATION**

THIS MATERIAL HAS A LOW VAPOR PRESSURE AND IS NOT EXPECTED TO PRESENT AN INHALATION EXPOSURE AT AMBIENT CONDITIONS.

**INGESTION**

DO NOT INDUCE VOMITING.

HERCULES INCORPORATED  
Hercules Plaza  
Wilmington, Delaware, 19894

MATERIAL SAFETY DATA SHEET

MSDS No.: 862 3190 0100-1  
Date: 04/25/86  
Page: 1 of 3

Phone Number: (302) 594-5000 (all hours)

I. PRODUCT IDENTIFICATION

CAUTION! FLAMMABLE DUST WHEN FINELY DIVIDED AND SUSPENDED IN AIR.

PENTREX™ 816 Synthetic resin

HMIS\*

Rating

Health hazard:	0 Minimal
Flammability hazard:	1 Slight
Reactivity hazard:	0 Minimal

Appearance and odor: Amber-colored solid or flake; typical rosin odor

II. HAZARDOUS INGREDIENTS & EXPOSURE LIMITS

None of the components of this product are listed in 29CFR1910 Subpart Z and they do not appear in the current Threshold Limit Values for Chemical Substances in the Work Environment adopted by the American Conference of Governmental Industrial Hygienists (ACGIH).

If these materials are used in a manner that could generate particulates (dust), Hercules recommends that the resin dust be treated as a nuisance particulate according to the American Conference of Governmental Industrial Hygienists (ACGIH).

III. TYPICAL PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling point:	N/A	Solubility in water:	Negligible
Vapor pressure @ 20°C:	Not determined	Specific gravity:	1.14
Vapor density:	N/A	pH:	N/A
% volatile (vol.):	Negligible at 20°C	Evaporation rate:	Slower than butyl acetate
Softening point:	152°C (306°F)		

IV. FIRE, EXPLOSION, & REACTIVITY HAZARD DATA

CAUTION! FLAMMABLE DUST WHEN FINELY DIVIDED AND SUSPENDED IN AIR.

Flash point:	> 149°C (300°F) COC	Flammable limits:	N/A
Autoignition temperature:	Not determined		
Extinguishing media:	Water spray, dry chemical, foam, or carbon dioxide		
Special fire-fighting procedures:	None		
Unusual fire & explosion hazards:	Flammable dust when finely divided and suspended in air.		

Continued...

\*HMIS (Hazardous Materials Identification System) Rating for the product as it is supplied.  
N/A - not applicable

We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combination for their own purposes. Unless otherwise agreed in writing, we sell the products without warranty, and buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of our products, whether used alone or in combination with other products.

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**IV. FIRE, EXPLOSION, & REACTIVITY HAZARD DATA**

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...Continued

Stability considerations: Stable

Incompatibility with: None

Hazardous decomposition products: Carbon monoxide, carbon dioxide

Hazardous products of combustion: Carbon monoxide, carbon dioxide and smoke. Depending on conditions, some aliphatic aldehydes and carboxylic acids also may be formed.

Hazardous polymerization: Will not occur.

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**V. HEALTH HAZARD DATA**

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Signs & symptoms of overexposure in the workplace:

Eyes: Dust may cause irritation by mechanical abrasion.  
Skin: Prolonged and repeated contact may cause a skin sensitization reaction in susceptible individuals (see below - "Medical conditions generally recognized as being aggravated by exposure").  
Inhalation: None known. None expected.  
Ingestion: None known.

EMERGENCY & FIRST AID PROCEDURES:

**EYES:** In case of contact, immediately flush with plenty of low pressure water for at least 15 minutes. Remove any contact lenses to ensure thorough flushing. Call a physician.

**SKIN:** Wash with soap and running water.

**MOLTEN RESINS:** If molten material comes in contact with the skin, cool under a running stream of water. Do NOT attempt to remove the resin from the skin. Removal could result in severe tissue damage. Get medical attention.

**INHALATION:** Remove to fresh air. Treat any irritation symptomatically. Call a physician.

**INGESTION:** If swallowed, do NOT induce vomiting. Call a physician.

**NOTE TO PHYSICIAN:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

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Medical conditions generally recognized as being aggravated by exposure: This product contains rosin or a rosin derivative. Rosin and some of its derivatives have been reported to cause skin sensitization in susceptible individuals. Individuals sensitized to other rosin derivatives may also react when exposed to this product.

Primary Routes of Entry: Eyes, skin

None of the components of this product are listed as carcinogens by the National Toxicology Program (NTP). They have not been regulated as carcinogens by the Occupational Safety and Health Administration (OSHA) and have not been evaluated by the International Agency for Research on Cancer (IARC).

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**VI. SPILL & LEAK PROCEDURES**

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**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:** If material is not contaminated, scoop into clean containers for use. If contaminated, scoop into containers for disposal.

**Waste Disposal Method:** Incineration of waste material in a permitted facility in accordance with local, state, and federal regulations is the recommended disposal method. Landfilling in a licensed facility is a suitable alternative.

This product is not listed in federal hazardous waste regulations 40CFR261.33 paragraphs (e) or (f), i.e. chemical products that are considered hazardous if they become wastes. It does not exhibit any of the hazardous characteristics listed in 40CFR261 Subpart C. State or local hazardous waste regulations may apply if different from the federal.

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**VII. APPLICABLE CONTROL MEASURES**

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- Appropriate hygienic practices:** Do not allow eye or skin contact.  
Avoid breathing dust.  
Wash thoroughly after handling, and before eating, drinking or smoking.
- Personal protective equipment:** Impervious gloves  
Safety glasses  
Appropriate respirator selected and used in accordance with OSHA Subpart I (29CFR1910.134) required when exposure to airborne contaminant is likely to exceed acceptable limits.  
Appropriate protective clothing when handling molten product.
- Work practices:** Eyewash fountains and safety showers should be easily accessible.
- Handling and storage precautions:** Keep away from sparks and open flame.  
Flaked forms are prone to gradual oxidation. Control inventory.  
Use oldest material first.
- Engineering controls:** Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits.
- Protective measures during repair & maintenance:** Eliminate sources of ignition.
-

SEPARATE PAGE USED ONLY TO DEVELOP THE LABEL TEXT, BUT NOT DISTRIBUTED AS PART OF MSDS.

---

VIII PRECAUTIONARY LABELING

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PENTREX™ 816 Synthetic resin

HMIS\*

Rating

Health hazard:	0	Minimal
Flammability hazard:	1	Slight
Reactivity hazard:	0	Minimal

CAUTION! FLAMMABLE DUST WHEN FINELY DIVIDED AND SUSPENDED IN AIR.

Keep away from sparks and open flame.  
Use with adequate ventilation.

STORAGE: Flaked forms are prone to gradual oxidation. Control inventory. Use oldest material first.

SPIILLS & LEAKS: If material is not contaminated, scoop into clean containers for use. If contaminated, scoop into containers for disposal.

---

NOTES: \*HMIS (Hazardous Materials Identification System) Rating for the product as it is supplied.

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fnc 2579s

HERCULES INCORPORATED  
Hercules Plaza  
Wilmington, DE 19894  
Phone #: (302) 594-5000 (24 hrs)

HERCULES\* RES 1-2428  
Synthetic resin solution

MSDS No.: RES 1-2428A

Date: 08/27/93

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I. PRODUCT IDENTIFICATION

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CAUTION! MAY CAUSE EYE AND SKIN IRRITATION.

HERCULES\* RES 1-2428  
Synthetic resin solution

CASRN: Mixture

HMIS RATINGS: (1)

Health hazard:	1	Slight
Flammability hazard:	1	Slight
Reactivity hazard:	0	Minimal

CHEMICAL & COMMON NAME: Rosin ester in petroleum hydrocarbon oil

APPEARANCE AND ODOR: Viscous, amber-colored liquid; naphthenic odor

\* Registered Trademark of Hercules Incorporated

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(1) Explanation of acronyms:

HMIS: Hazardous Materials Identification System rating for product as supplied.

CASRN: Chemical Abstracts Service Registry Number

AIHA WEEL: American Industrial Hygienists Association - Workplace  
Environmental Exposure Level.

OSHA: Occupational Safety and Health Administration.

TLV: Registered trademark of American Conference of Governmental Industrial  
Hygienists for Threshold Limit Values.

TWA: Time Weighted Average

STEL: Short term exposure limit (See 29 CFR 1910.1048, March 1, 1989, revision)

C: Ceiling exposure concentration (See 29 CFR 1910.1000, March 1, 1989, rev.)

SKIN: May be absorbed through skin (See 29 CFR 1910.1048, March 1, 1989, rev.)

N/A: Not applicable

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 II. HAZARDOUS INGREDIENTS & EXPOSURE LIMITS
 

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As Hercules interprets the U.S. Occupational Safety and Health Act and Regulations, including the Hazard Communication Standard 29 CFR 1910.1200 dated August 24, 1987, this product should NOT be considered a health hazard. However, this product contains 33 weight percent petroleum hydrocarbon oil. If this product is to be used in a manner that could generate an oil mist, the following airborne limits should be observed:

	RECOMMENDED AIRBORNE LEVELS (1)		
	OSHA-TWA	1992-1993 TLV-TWA	TLV-STEL
Oil mist, mineral	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

If this product is heated to temperatures sufficient to produce smoke or fumes, the TLV-TWA of 0.1 mg/m<sup>3</sup> (as formaldehyde), for rosin core solder pyrolysis products should be observed.

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 III. TYPICAL PHYSICAL & CHEMICAL CHARACTERISTICS
 

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BOILING POINT: Not determined	SOLUBILITY IN WATER: Negligible
VAPOR PRESSURE AT 20 C: Not determined	SPECIFIC GRAVITY: 0.91
VAPOR DENSITY: Heavier than air (2)	pH: N/A
VOLATILE (WT.),%: 33	EVAPORATION RATE: Slower than butyl acetate
FREEZING POINT: Not determined	

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 IV. FIRE, EXPLOSION, & REACTIVITY HAZARD DATA
 

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FLASH POINT: 95 C (215 F) Pensky-Martins

FLAMMABLE LIMITS, IN AIR, % BY VOLUME: Lower: 1.1, Upper: 6.0 (2)

AUTOIGNITION TEMPERATURE: 218 C (424 F) (2)

EXTINGUISHING MEDIA:  
Water spray, dry chemical, foam, carbon dioxide, or halon

(2) Indicates property of solvent. Property of product may be different.

Continued...

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**IV. FIRE, EXPLOSION, & REACTIVITY HAZARD DATA**

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...Continued

**SPECIAL FIREFIGHTING PROCEDURES:**

Cool containers with water if exposed to fire.  
Use self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

STABILITY CONSIDERATIONS: Stable

INCOMPATIBILITY WITH: None

HAZARDOUS DECOMPOSITION PRODUCTS: None

**HAZARDOUS PRODUCTS OF COMBUSTION:**

Carbon monoxide and carbon dioxide. Depending on conditions, some aliphatic aldehydes and carboxylic acids also may be formed.

HAZARDOUS POLYMERIZATION: Will not occur.

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**V. HEALTH HAZARD DATA**

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**CAUTION! MAY CAUSE EYE AND SKIN IRRITATION.**

**SIGNS & SYMPTOMS OF OVEREXPOSURE IN THE WORKPLACE:**

**EYES:** Redness, stinging, itching.

**SKIN:** Redness and itching. Repeated or prolonged contact may cause dryness and chapping. See below: **MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE.**

**INHALATION:** An unlikely route of exposure.

**INGESTION:** An unlikely route of exposure.

**EMERGENCY & FIRST AID PROCEDURES:**

**EYES:** In case of contact, immediately flush with plenty of low-pressure water for at least 15 minutes. Remove any contact lenses to ensure thorough flushing. Call a physician.

**SKIN:** Promptly wash with soap and running water. Remove contaminated clothing. Wash clothing before reuse.

**INHALATION:** (Mist) Remove to fresh air. Treat any irritation symptomatically. Call a physician.

Continued...



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**V. HEALTH HAZARD DATA**

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...Continued

**MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE:**

This product contains rosin or a rosin derivative. Rosin and some of its derivatives have been reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged skin contact. Hercules Incorporated is unaware of any allergic skin reactions caused by industrial exposure to this product or similar materials. A thorough search of Hercules medical records has disclosed no case of skin sensitization to rosin or its derivatives from industrial exposure in our workers. None have been reported by our customers.

**PRIMARY ROUTES OF ENTRY:** Eyes, skin

**CANCER INFORMATION:**

**PETROLEUM HYDROCARBON OIL:** The petroleum hydrocarbon oil in this product is a severely hydrotreated middle distillate. Some middle distillates have produced tumors in mouse skin-painting studies. The International Agency for Research on Cancer (IARC) considers severely treated middle distillates as not classifiable as to their carcinogenicity to humans (Group 3). Severely treated middle distillates are not carcinogenic according to the criteria of the OSHA Hazard Communications Standard and are not listed as carcinogens by NTP.

The other components of this product are not listed as carcinogens by the National Toxicology Program (NTP). They are not regulated as carcinogens by the Occupational Safety and Health Administration (OSHA) and have not been evaluated by the International Agency for Research on Cancer (IARC).

**REPORTED HUMAN EFFECTS:**

**ROSIN ESTER:** Prolonged exposure to smoke or fumes generated by heating this product may cause respiratory irritation with throat discomfort, coughing or breathing difficulty. Repeated exposure may lead to respiratory sensitization (asthma). See SECTION 11.

**PETROLEUM HYDROCARBON OIL:** This component is a severely hydrotreated middle distillate similar to kerosene. Defatting of the skin may lead to irritation, infection, and dermatitis. This petroleum distillate is not sufficiently volatile at ambient temperatures to constitute an acute inhalation hazard. However, high vapor concentrations (greater than 700 ppm, attainable only at temperatures well above ambient) are irritating to the eyes and the respiratory tract, may cause headache and dizziness, are anesthetic, and may have other central nervous system effects, including death.

Continued...

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**V. HEALTH HAZARD DATA**

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...Continued

**REPORTED ANIMAL EFFECTS:**

ROSIN ESTER: Acute peroral rat LD50 greater than 20 g/kg based on a similar resin. 90-Day rat feeding study-no significant adverse effects at 1% based on similar resin.

PETROLEUM HYDROCARBON OIL: Similar products have a low order of acute toxicity. The acute oral LD50 (rabbit) is greater than 5 g/kg of body weight and the acute dermal LD50 (rabbit) is greater than 3 g/kg of body weight.

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**VI. SPILL PROCEDURES & WASTE DISPOSAL**

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**SPILL PROCEDURES:**

Small Spills: Add absorbent, sweep up, and discard. Large Spills: Dike to contain and pump into drums for use or disposal.

**WASTE DISPOSAL METHOD:**

Incineration of combustible wastes in permitted facilities is the preferred disposal method.

Refer to Section VIII for specific Federal Environmental and Regulatory Data regarding use or disposal of this product.

---

**VII. APPLICABLE CONTROL MEASURES**

---

**APPROPRIATE HYGIENIC PRACTICES:**

Do not allow eye or skin contact.  
Avoid breathing vapor or mist.  
Wash thoroughly after handling, and before eating, drinking or smoking.  
Remove contaminated clothing promptly and clean thoroughly before reuse.

**PERSONAL PROTECTIVE EQUIPMENT:**

Safety glasses  
Impervious gloves  
Appropriate respiratory protection required when exposure to airborne contaminant is likely to exceed acceptable limits. Respirators should be selected and used in accordance with OSHA Subpart I (29 CFR 1910.134) and manufacturer's recommendations.

**WORK PRACTICES:**

Eyewash fountains and safety showers should be easily accessible.

Continued...

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VII. APPLICABLE CONTROL MEASURES

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...Continued

**HANDLING AND STORAGE PRECAUTIONS:**

Keep containers closed.

**ENGINEERING CONTROLS:**

Adequate ventilation should be provided to keep vapor or mist concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

**PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE:**

Eliminate ignition sources.

Completely isolate and thoroughly clean all equipment, piping or vessels before beginning maintenance or repairs.

Keep area clean. Product will burn.

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 VIII. ENVIRONMENTAL & REGULATORY DATA  
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The following environmental and regulatory data are provided to assist users of this product in defining their regulatory environmental compliance obligations.

## A. PRODUCT COMPOSITION

PRODUCT (P) or COMPONENT NO.	TRADE NAME or CHEMICAL COMPONENT	CASRN	WT. PERCENT
P	HERCULES* RES 1-2428 Synthetic resin solution	Mixture	100
1	Petroleum hydrocarbon oil	Proprietary	33

## B. SARA TITLE III (See footnotes)

COMPONENT NO.	SEC. 304 EHS RQ (lbs)	SEC. 302 EHS TPQ (lbs)	SEC. 311/312 HAZARD CATEGORY	SEC. 313 TOXIC CHEMICAL (YES, NO)
P	N/A	N/A	HC-1, HC-3	N/A
1	N/A	N/A	HC-1	NO

## C. CERCLA (40 CFR 302.4 HAZARDOUS SUBSTANCE &amp; REPORTABLE QUANTITIES)

This product does NOT contain any hazardous substances listed in 40 CFR 302.4.

## D. RCRA INFORMATION

This product is not listed in federal hazardous waste regulation 40 CFR 261.33, paragraph (e) or (f) - i.e., chemical products that are considered hazardous if they become wastes. It does not exhibit any of the hazardous characteristics listed in 40 CFR 261, Subpart C. State or local hazardous waste regulations may apply if they are different from the federal regulation.

## E. OTHER

This product contains a petroleum hydrocarbon. Prevent runoff from spills or leaks entering navigable waters, streams or other bodies of water. If runoff occurs, notify the National Response Center (NRC) at 800-424-8802.

- The components of this product are included on the EPA TSCA Chemical Substance Inventory.

Continued...

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VIII. ENVIRONMENTAL REGULATORY DATA  
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...Continued

## FOOTNOTES:

SEC. 302 - Threshold Planning Quantity, Extremely Hazardous Substance (EHS) (40 CFR 355 Emergency Planning and Notification regulations)

N/A: This chemical is not an EHS. Therefore, there is no Threshold Planning Quantity (TPQ).

SEC. 304 - Reportable Quantity for Releases of an EHS (40 CFR 355, Appendix A)

N/A: This chemical is not an EHS. Therefore, there is no Reportable Quantity (RQ).

SEC. 311/312 - 40 CFR 370 Hazardous Chemical Reporting Requirements "Hazard Categories"

- HC-1 Immediate (acute) health hazard
- HC-2 Delayed (chronic) health hazard
- HC-3 Fire hazard
- HC-4 Sudden release of pressure hazard
- HC-5 Reactive hazard
- NHH Not a health hazard
- NPH Not a physical hazard

SEC. 313 - 40 CFR 372 Toxic Chemical Release Reporting Requirements

NO: This component is NOT 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 Toxic Chemical Reporting requirements.

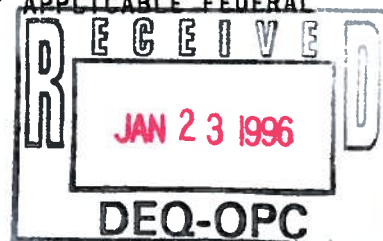
YES: This component is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 Toxic Chemical Reporting requirements. Percent composition (or estimated range) is listed above.

N/A: This product is a mixture. As such, it is not listed as a Toxic Chemical under 40 CFR 372, Section 313 reporting requirements. Reportable constituents are listed individually where they exceed threshold concentration limits.

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HERCULES INCORPORATED HAS COMPILED THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS MATERIAL SAFETY DATA SHEET FROM SOURCES BELIEVED TO BE RELIABLE AND TO REPRESENT THE MOST REASONABLE CURRENT OPINION ON THE SUBJECT WHEN THE MSDS WAS PREPARED. NO WARRANTY, GUARANTY OR REPRESENTATION IS MADE AS TO THE CORRECTNESS OR SUFFICIENCY OF THE INFORMATION. THE USER OF THIS PRODUCT MUST DECIDE WHAT SAFETY MEASURES ARE NECESSARY TO SAFELY USE THIS PRODUCT, EITHER ALONE OR IN COMBINATION WITH OTHER PRODUCTS, AND DETERMINE ITS ENVIRONMENTAL REGULATORY COMPLIANCE OBLIGATIONS UNDER ANY APPLICABLE FEDERAL OR STATE LAWS.

Doc. No. 8861s



R  
ELF ATOCHEM  
FUNCTIONAL POLYMERS DIV.  
2000 MARKET STREET  
PHILADELPHIA, PA 19103

MATERIAL SAFETY  
DATA SHEET

EMERGENCY PHONE NUMBERS  
8:30 am - 4:30 pm  
(215) 582 - 1551  
(800) 328 - 2811  
CHEMTREC:  
(800) 424 - 9300

NAME USED ON LABEL: LOTADER 6600  
CHEMICAL NAME (if single substance): N/A  
CHEMICAL FAMILY: Terpolymer of ethylene-acrylic ester - maleic anhydride  
PRODUCT USE: Hot melt adhesive. Modifier for polymers, rubbers and asphalt.

Section I: Ingredients

Identity	CAS No.	%	PEL	TLV
2-PROPENOIC ACID, ETHYL ESTER, POLYMER WITH ETHENE AND 2,5-FURANDIONE	41171-14-6	100	NE	NE

PEL and TLV values are reported as TWA unless otherwise noted.

Section II: Physical Data

Boiling Point, C: N/A	Melting Point, C: 80
Specific Gravity: 0.94	Vapor Pressure @ 20 C: N/A
Vapor Density: N/A air=1	Evaporation Rate: N/A Butyl acetate=1
% Volatiles: N/A	Solubility in Water: Insoluble
Appearance and Odor: Colorless pellets with faint acrylic odor	

Section III - Fire and Explosion Data

Flash Point (Test Method) N/A	Autoignition Temperature >450C/892F	Flammable Limit LEL= N/A UEL= N
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Extinguishing Media:

Water spray, carbon dioxide, foam, or dry chemical.

Special Fire Fighting Procedures:

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

PCODE: AT273

Page 1

NE - Not Established N/A - Not Applicable \* - See Misc. (Section IX)