

MATERIAL SAFETY DATA SHEET

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LAST REVISION DATE: 10-12-99 APPROVAL: JJF
CURRENT REVISION DATE: 06-01-04
EMERGENCY PHONE: U.S.: 800-613-6803

IDENTIFICATION

PRODUCT NAME: Tramfloc® Calcium Polysulfide Solution

TSCA INVENTORY/CAS. NO.: 1344-81-6

CHEMICAL NAME: CALCIUM POLYSULFIDE

HAZARDOUS INGREDIENTS - % COMPOSITION - OSHA-TWA,ppm - ACGIH-TWA,ppm

CALCIUM POLYSULFIDE	29	NE	NE
INERTS	71		

PHYSICAL DATA

BOILING POINT (F/C): n/d SPECIFIC GRAVITY : 1.273 @ 20°C

VAPOR PRESSURE (mm Hg): n/d MELTING POINT: n/d

VAPOR DENSITY (Air - 1): n/d SOLUBILITY IN WATER: Soluble

TYPICAL pH: 11.5-11.8

APPEARANCE AND ODOR: Deep red/orange liquid, pungent odor of rotten eggs.

SPECIAL HAZARD DESIGNATIONS

NFPA: HEALTH * FLAMMABILITY * REACTIVITY
2 0 0

KEY: 0-MINIMAL, 1-SLIGHT, 2-MODERATE, 3-SERIOUS, 4-SEVERE

NR: NOT REQUIRED, NE: NOT ESTABLISHED, NA: NOT APPLICABLE
FIRE AND EXPLOSION DATA

FLAMMABLE LIMITS IN AIR, % BY VOLUME: UPPER: NA; LOWER: NA
FLASH POINT (TEST METHOD): TAG CLOSED CUP (ASTM D56): 200° F
TAG OPEN CUP (ASTM D1310): NE

PRODUCT NAME: Tramfloc® Calcium Polysulfide Solution

SPECIAL FIRE FIGHTING PROCEDURES: Smoke from fires may present unusual hazards, avoid breathing smoke. Avoid contact with fall out and runoff. Minimize amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Prevent unauthorized entry to fire areas. Read entire bulletin.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep fire-exposed containers cool with water spray.

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REACTIVITY DATA

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STABILITY: Stable to boiling point, will lose water above this temperature.

HAZARDOUS POLYMERIZATION: None.

CONDITIONS TO AVOID: Elevated temperatures can cause containers to burst.

MATERIALS TO AVOID: Avoid contact with acids. Hydrogen sulfide gas will be generated, dangerous to inhale, explosive at critical concentration.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Normal combustion products are carbon dioxide and water vapor. Decomposition may also product oxides of sulfur. Incomplete combustion or thermal decomposition can produce carbon monoxide, oxyhydrocarbon derivatives and sulfur derivatives including hydrogen sulfide.

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HEALTH HAZARD DATA

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ROUTES OF ENTRY/EFFECTS OF EXPOSURE:

INGESTION (SWALLOWING): This material decomposes in the digestive tract to release sulfur and hydrogen sulfide (H₂S). Signs and symptoms of toxicity may include headache, nausea, vomiting drowsiness, amnesia, tremors, depressed respiration, convulsions, cyanosis and death due to respiratory paralysis. Severe irritation of the digestive tract may also occur.

SKIN CONTACT: Chemically burned skin as from calcium hydroxide (lye), may produce systemic toxicity by skin absorption.

EYE CONTACT: Chemically burned eye tissue as from calcium hydroxide (lye), may produce severe membrane irritation with corneal damage.

INHALATION: Symptoms are those of hydrogen sulfide (H₂S). Inhalation of H₂S is irritating to the respiratory tract. If respiratory irritation or any signs or symptoms described in this bulletin occur, move the person to fresh air. If these effects continue, see a medical doctor immediately.

TARGET ORGAN EFFECT: NE; DELAYED EFFECTS: NE; CARCINOGENICITY: NE

TOXICITY: Dermal LD 50 - Male rabbit >2000 gm/Kg

Inhalation LC 50 - Rat >5.93 mg/liter

Oral LD 50 - Female Rats: 820 gm/Kg; Male Rats: 820 gm/Kg

EMERGENCY AND FIRST AID DATA

DANGER - MAY BE FATAL IS SWALLOWED: CORROSIVE TO SKIN: CAUSES IRREVERSIBLE EYE DAMAGE AND SKIN BURNS.

INGESTION: Drink promptly a large quantity of milk, egg white, or gelatin solution of if these are not available, large quantities of water. Get medical attention. Do not induce vomiting. (See note to Physician below.)

SKIN CONTACT: Wash all affected areas with plenty of soap and water while under a safety shower for at least 15 minutes, while removing contaminated clothing and shoes. Do not attempt to neutralize with chemical agents. Seek medical attention immediately. Discard any contaminated clothing and shoes.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes using eyewash fountain, if available. Lift upper and lower lids and rinse under them with copious amounts of water. GET MEDICAL ATTENTION.

INHALATION: Remove victim to fresh air. If not breathing, administer cardiopulmonary resuscitation or artificial respiration. If breathing is difficult or irritation develops, GET MEDICAL ATTENTION.

PHYSICIANS NOTE: Probable mucosal damage may contraindicate gastric lavage. For severe hydrogen sulfide poisoning, successful treatment has involved initial inhalation of amyl nitrite pearls for 15-30 seconds of each minute until 10 mls of a 3% solution of sodium nitrite can be administered intravenously at 2.5 to 5 mls per minute. The nitrate-induced methemoglobin is thought to bind the toxic hydro-sulfide ion.

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SPILL OR LEAK PROCEDURES

PRODUCT NAME: Tramfloc® Calcium Polysulfide Solution

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STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Follow the spill procedures on the container. DO NOT USE ACIDIC CLEANING MATERIALS. Cover spill with generous amount of absorbent such as clay or loam soil. Use a stiff broom to mix thoroughly. Sweep up and place in a disposable container. Scrub contaminated area with detergent soap and water using a stiff broom. Pick up liquid with more absorbent and place in disposable container.

WASTE DISPOSAL METHOD:

Hazardous waste. Follow all local, state, and federal regulations for waste disposal. RCRA ID No. D002

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Do not heat drums with any welding equipment as explosion may occur. Avoid breathing gas. Do not get in eyes, on skin, or on clothing. Store in a cool, dry place in properly designed vessels.

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SPECIAL PROTECTION INFORMATION

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PROTECTIVE EQUIPMENT SHOULD BE USED DURING THE FOLLOWING PROCEDURES:

- Manufacture or formulation of this product.
- Repair and maintenance of contaminated equipment.
- Clean up of leaks and spills.
- Any other activity that may result in hazardous exposures.

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved full-face respirator with H₂S has cartridge. Use positive pressure self-contained breathing apparatus for emergency or other conditions requiring a higher level of protection.

VENTILATION PROTECTION: Use local exhaust as needed to maintain airborne exposure below exposure limits.

PROTECTIVE GLOVES: Yes.

EYE PROTECTION: Chemical Worker's Goggles and full-face shield.

OTHER PROTECTION: Maintain a sink, safety shower and eyewash fountain in the work area. Have oxygen readily available.

WORK/HYGIENIC PRACTICES: Follow normal hygienic practices for handling chemicals.

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SARA-TITLE III INGREDIENT INFORMATION

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INGREDIENTS

NAME: Calcium Polysulfide
CAS NO.: 1344-81-6
APPLICABLE SARA SUBSECTIONS: 304
THRESHOLD PLANNING QUANTITY: NONE
THRESHOLD REPORTING QUANTITY: 100 LBS.

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NEW JERSEY/PENNSYLVANIA RTK TOTAL INGREDIENTS LABEL

TITLE 8

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PRODUCT NAME: Tramfloc® Calcium Polysulfide Solution
CAS NO.\NJEIN TRADE SECRET COMMON NAME\COMMENTS

1344-81-6 Calcium Polysulfide

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FOR CALIFORNIA CUSTOMERS ONLY

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CALIFORNIA PROPOSITION 65: This product does contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

PRODUCT INFORMATION: Pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) we are providing this information to you. In part, this law requires that "clear and reasonable warning" be given to any individual, knowingly or intentionally exposed to any substances identified by the state as being cancer or reproductive hazards, unless it can be shown that the exposure poses "no significant risk." It has not been feasible to carry out the detailed analysis that would be required to determine whether each of the materials on the list of chemicals known to cause cancer or reproductive toxicity associated with the Act, is present in detectable amounts in our products. Based on available data, the following chemicals listed by Proposition 65 may be present in this product:

CARBON DISULFIDE	75-15-0	HEADSPACE	>95 PPM
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Please read the entire MSDS before using a product and always use it as directed by the Material Safety Data Sheet. Of course, you may wish to conduct further evaluation based on your specific end-use. The warning above is the result of compliance with Proposition 65. There is no new scientific or technical evidence which suggests an increased risk associated with using this product. We are continuing to monitor proposition 65 activity and will keep you informed of any pertinent changes.

CALIFORNIA RULE 443.1 VOC'S:

Volatile Organic components (VOC'S) = Substances with vapor pressure of
=> 0.5 mm Hg at 219.2⁰ F

This product contains <1.0 g/liter VOC'S and <1.0 g/liter VOC'S (less water and exempt compounds).

The information contained herein is to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, Tramfloc, Inc. makes no guarantee for results obtained, and assumes no responsibility for damages incurred by use of this product. It is the responsibility of the user to comply with all federal, state, and local laws and regulations.