

# MATERIAL SAFETY DATA SHEET

**BEST SULFUR PRODUCTS**  
**A Division of Ag Formulators, Inc.**  
**5427 E. Central Avenue**  
**Fresno, CA 93725**

For Emergency Information call (CHEMTREC) 1-800-424-9300  
For Technical Information Call BSP 800-800-4854

**PRODUCT NAME**  
Lime Sulfur Solution

**Effective Date:** March 20, 2003  
**Supersedes:** July 19, 1999

## I. IDENTIFICATION

CHEMICAL NAME OF PRIMARY COMPONENT (S): Calcium Polysulfide  
FORMULA: CaS<sub>x</sub>  
SYNONYMS: Lime Sulfur

## II. INGREDIENTS

| <u>INGREDIENTS (S)</u> | <u>CAS Number</u> | <u>OSHA HAZARD (H)/<br/>NON-HAZARD (NH)</u> | <u>PERCENT</u> |
|------------------------|-------------------|---|----------------|
| Calcium Polysulfide    | 1344-81-6         | H   | 29             |
| Inerts                 |                   |   | 71             |

## III. HAZARDS IDENTIFICATION

### **PRECAUTIONARY STATEMENTS:**

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

| National Fire Protection Association Rating | NFPA   | HMIS                         |
|---|--|------------------------------|
| Hazardous Materials Identification System   | HEALTH 2<br>FIRE 0<br>REACTIVITY 0<br>4=Extreme/Severe 3=High/Serious<br>2=Moderate 1=Slight 0=Minimum | 2<br>0<br>0                  |
| Sara Title III Hazard Classification        | IMMEDIATE (ACUTE) HEALTH<br>DELAYED (CHRONIC) HEALTH<br>FIRE<br>SUDDEN RELEASE OF PRESSURE<br>REACTIVE | Yes<br>No<br>No<br>No<br>Yes |

## IV. EMERGENCY AND FIRST AID PROCEDURES:

Remove the patient from immediate source of exposure and assure that the individual is breathing. If not breathing, use artificial respiration. GET MEDICAL ATTENTION.

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

Skin: 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.

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.

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

## NOTES TO PHYSICIAN:

Probable mucosal damage may contraindicate gastric lavage. For severe hydrogen sulfide poisoning, successful treatment has involved initial inhalation of amyl nitrite pearls for 15 to 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.

## **V. FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT (degrees C (F): n/d  
FLAMMABLE LIMITS IN AIR: n/d  
AUTOIGNITION TEMPERATURE (degrees C (F): n/d  
EXTINGUISHING MEDIA: CO<sub>2</sub> dry chemical foam, water spray.

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 area. Read entire bulletin.

Persons who have been exposed to contaminated smoke should be immediately relieved from duty and checked for symptoms of poisoning. These should not be mistaken for heat ex-haustion or smoke inhalation. See Section IV and XI, Health Hazard Data for symptoms of poisoning, first aid procedures and notes to physician.

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

## **VI. ACCIDENTAL RELEASE MEASURES**

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.

## **VII. HANDLING AND STORAGE**

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.

## **VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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 H<sub>2</sub>S gas cartridge. Use positive pressure self-contained breathing apparatus for emergency or other conditions requiring a higher level of protection.

### VENTILATION:

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

### PROTECTIVE CLOTHING:

Full-body protective clothing, chemical-resistant gloves and boots.

### EYE PROTECTION:

Chemical Worker's Goggles and full-face shield.

### OTHER PROTECTIVE EQUIPMENT:

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

## **IX. PHYSICAL AND CHEMICAL PROPERTIES**

|                         |  |
|-------------------------|--|
| pH:                     | 11.5 - 11.8  |
| SPECIFIC GRAVITY:       | 1.273 @ 20°C   |
| BOILING POINT:          | n/d  |
| MELTING POINT, °C (°F): | n/d  |
| VAPOR PRESSURE:         | n/d  |
| VAPOR DENSITY (AIR=1):  | n/d  |
| SOLUBILITY IN WATER:    | Soluble  |
| APPEARANCE AND ODOR:    | Deep red/orange liquid, pungent odor of rotten eggs. |

## **X. STABILITY AND REACTIVITY**

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

Normal combustion products are carbon dioxide and water vapor. Decomposition may also produce oxides of sulfur. Incomplete combustion or Thermal decomposition can produce carbon monoxide, oxyhydrocarbon derivatives and sulfur derivatives including hydrogen sulfide.

HAZARDOUS POLYMERIZATION: None

## **XI. TOXICOLOGICAL INFORMATION**

| <u>Chemical Name (s)</u> | <u>ACGIH (TLV)</u> | <u>OSHA (TWA)</u> |
|--------------------------|--------------------|-------------------|
| Calcium Polysulfide      | None               | None              |

### TOXICOLOGY DATA:

|   |                                     |
|---|-------------------------------------|
| Oral LD <sub>50</sub> (rat)                         | (M) 820 mg/kg<br>(F) 820 mg/kg      |
| Dermal LD <sub>50</sub> (rabbit):                   | >2000 mg/kg                         |
| Inhalation LC <sub>50</sub><br>(rat-4 hr exposure): | (M) 3.9 mg/L<br>(F) 3.1 mg/L        |
| Skin effects (rabbit):                              | Mildly irritating                   |
| Eye effects (rabbit):                               | Irreversible damage due to high pH. |

CARCINOGENICITY: None determined

### EFFECTS OF AN ACUTE EXPOSURE:

|               |  |
|---------------|--|
| Swallowing:   | This material decomposes in the digestive tract to release sulfur and hydrogen sulfide (H <sub>2</sub> S). 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. |
| Inhalation:   | Symptoms are those of hydrogen sulfide (H <sub>2</sub> S). Inhalation of H <sub>2</sub> S 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.  |
| 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.  |

EFFECTS OF CHRONIC EXPOSURE: None Known

EXISTING MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Skin irritation may be aggravated in individuals with existing skin lesions. Breathing of H<sub>2</sub>S gas may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

**XII. DISPOSAL CONSIDERATIONS**

Contaminated cleanup materials may be hazardous. Refer to Sections IV and VIII of this MSDS sheet before handling. All contaminated materials should be placed in disposable containers and buried in an approved dumping area. Follow all local rules governing waste disposal in your area.

**XIII. TRANSPORT INFORMATION**

Transportation Status: DOT: Not Regulated  
Proper shipping name: N/A  
Hazard Class: n/a  
ID#: NOS  
Packing Group: n/a

National Motor Freight Classification (NMFC): 102180

**XIV. REGULATORY INFORMATION**

TSCA Inventory Status: This product is listed on TSCA inventory  
SARA Title III  
Section 313 Toxic Chemicals: Not listed  
RCRA Hazardous Waste: Not Listed

**XV. OTHER INFORMATION**

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE.