



Rex Lime Sulfur Solution

Safety Data Sheet

Revision Date: May 29th, 2015

1. Identification

1.1 Product Name: REX LIME SULFUR SOLUTION

1.2 Other Identification:

Chemical Family: Calcium Polysulfide
Formula: CaS_x
EPA Registration Number: 71096-6
CAS Number: 1344-81-6
Product: 28% Calcium Polysulfide

1.3 Recommended Uses:

Fungicide, Insecticide, Miticide

1.4 Manufacturer:

OR-CAL Inc.
29454 Meadowview Rd.
Junction City, OR 97448
541-689-4413 (Office)
541-689-5026 (FAX)
www.orcalinc.com
EPA Establishment No. 52251-OR-005

1.5 Emergency Contact:

CHEMTREC
1-800-424-9300 (US and Canada)
National Pesticide Information Center:
1-800-858-7378
American Association of Poison Control Centers:
1-800-222-1222

2. Hazards

2.1 Hazard Classification:

Health:

Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity	Category 4
Skin Corrosion/Irritation	Category 2
Eye Damage/Irritation	Category 2A

GHS Hazard Categories:

1(Severe), 2/A (Serious),
3(Moderate), 4(Slight),
5(Minimal)

Physical: Corrosive to Copper, Aluminum

2.2 Signal Word(s):

Danger (USEPA Stamped Label)
Warning (GHS)

2.2.1 Hazard Statement(s):

Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled
Causes serious eye irritation
Causes skin burns
Corrosive

2.2.2 Symbol(s):



2.2.3 Precautionary Statement:

- Wash hands thoroughly after handling before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside, wash the outside of gloves before removing, then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product.
- As soon as possible, wash thoroughly and change into clean clothing after handling or using this product.
- Have the product label or container with you when calling the poison control center or doctor, or going for treatment.
- Avoid breathing mist and use only outdoors in a well-ventilated area.

2.3 Unclassified Hazard(s): Potential aquatic toxicity
“Due to the rapid dissociation of [lime sulfur] into components with very low toxicity, no mitigation for freshwater fish, mammals or avian species is warranted at the time.” (US EPA RED)

2.4 Unknown Toxicity Ingredient: None

3. Composition/Information on Ingredient

3.1 Product Composition:

Chemical Name	Formula	CAS No.	WT % A.I.	EINECS No.
Calcium Polysulfide	CaS _x or KS _x	1344-81-6	28%	215-709-2
Reaming Components	Trade secret	NA	72%	NA

4. First Aid Measures

4.1 Symptoms/Effects:

Acute: Extremely toxic if swallowed. Decomposition occurs in the digestive tract releasing hydrogen sulfide gas. Causes skin irritation and may produce systemic toxicity by skin absorption. Corrosive to eyes and causes eye irritation and damage. Solution causes alkaline burns

Chronic: No known chronic effects

4.2 Eyes:

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation persists.

4.3 Skin:

If on skin: Rinse off immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Take off contaminated clothing and wash it before reuse.

4.4 Ingestion:

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Rinse mouth. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

4.5 Inhalation:

If inhaled: Move person to fresh air and keep person comfortable. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

5. Firefighting Measures

5.1 Flammable properties: (See section 9 for additional properties)

Do not introduce acids into a vessel containing calcium polysulfide solution. Acids may form highly toxic and extremely flammable hydrogen sulfide gas.

5.2 Extinguishing Media:

5.2.1 Suitable Extinguishing Media:

Water, Foam, Carbon Dioxide, Dry Chemical

5.2.2 Unsuitable Extinguishing Media:

Not Applicable

5.3 Protection of Firefighters:

5.3.1 Specific Hazards Arising from the Chemical
Physical Hazards:

Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases.

Chemical Hazards:

Heating causes release of hydrogen sulfide vapors. Hydrogen sulfide is a highly flammable gas and gas/air mixtures can be explosive. It may travel to sources of ignition and flash back. Vapors are irritating to eyes, nose, throat and respiratory tract.

5.3.2 Protective Equipment and Precautions for Firefighters:

Wear MSHA/NIOSH approved self-contained breathing apparatus due to the possible presence of gases and the irritating nature of the product.

5.4 Additional Information:

National Fire Protection Association (NFPA) Ratings:

Health	2
Flammability	0
Reactivity	0
Special	NA

Hazard Rating: 4 (severe), 3 (serious), 2 (moderate), 1 (slight), 0 (minimal.)

6. Accidental Release Measures

6.1 Personal Precautions:

Use Personal Protective Equipment specific in section 8. Remove contaminated clothing and wash affected skin areas with soap and water.

6.2 Environmental Precautions:

Keep spill out of open bodies of water and municipal sewers unless allowed under NPDES (National Pollutant Discharge Elimination System) permit. Avoid release to the aquatic environment because of potential aquatic toxicity.

6.3 Methods of Containment

Small Release:

Absorb spillage onto sand, earth or any suitable absorbent material. Shovel up absorbed material and place in drums for disposal as a chemical waste.

Large Release:

Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbent material to prevent runoff into surface waterways (potential aquatic toxicity).

6.4 Method for Cleanup:

Small Release:

For small areas shovel up absorbed material and place in drums for disposal as a chemical waste.

Large Release:

Dike and contain the spill with neutral or alkaline material (e.g. sand, earth, etc.). Transfer as much liquid as possible to containers for recovery using portable pumps and hoses. Transfer contaminated diking material to treatment facility making sure to follow NPDES permit requirements.

7. Handling and Storage

7.1 Handling:

Avoid prolonged or repeated contact with the skin. Avoid contact with eyes. See section 8 for a complete list of PPE to wear when handling this product.

7.2 Storage:

Store product in a secure locked place, inaccessible to children, pets, and livestock. Store in a cool, dry place. Keep container tightly closed with no exposure to air when not in use. Store at a maximum temperature of 110°F and minimum temperature of 7°F. Do not store adjacent to acids. Label solution as an alkaline liquid with proper warning use and handling. Check with the USEPA or OSHA to make sure you are compliant with their regulations.

8. Exposure Control/Personal Protection

8.1 Exposure Guidelines:

- 8.1.1 OSHA (TWA, STEL):
< 20 ppm of hydrogen sulfide
- 8.1.2 ACGIH (TLV, STEL):
< 10 ppm of hydrogen sulfide

8.2 Engineering Controls:

Use adequate exhaust ventilation to prevent inhalation of product vapors. Keep eye wash/safety shower in areas where commonly used.

8.3 Personal Protective Equipment (PPE):

- 8.3.1 Eye/Face Protection:
Goggles or faceshield
- 8.3.2 Skin Protection:
Coveralls over long-sleeved shirt and long pants, chemical resistant gloves made of

any waterproof material, chemical resistant footwear plus socks, chemical resistant apron when mixing, loading or cleaning equipment, and chemical-resistant headgear for overhead exposure.

8.3.3 Respiratory Protection:

NIOSH approved respirator.

8.3.4 Hygiene Considerations:

Wash hands thoroughly after handling this product before eating, drinking, chewing gum, using tobacco, or using the toilet. Change clothing immediately after finished handling this product.

9. Physical and Chemical Properties

9.1 Appearance: Ruby red liquid

9.2 Odor: Rotten eggs

9.3 Odor Threshold: Not Available

9.4 pH: 11-12

9.5 Melting Point/Freezing Point: Not applicable/ 5 degrees F

9.6 Boiling Point: 215 °F

9.7 Flash Point: Not Available

9.8 Evaporation Rate: (Butyl Acetate=1) Not Available

9.9 Flammability: Not applicable

9.10 Upper/Lower Flammability Limits: Not Applicable

9.11 Vapor Pressure: Not Available

9.12 Vapor Density: (Air=1) Not Available

9.13 Relative Density: 1.250-1.280 (10.6 lbs. per gal.)

9.14 Solubility: Very soluble in water

9.15 Partition Coefficient: Not Available

9.16 Auto-ignition Temperature: >200 degrees F

9.17 Decomposition Temperature: 165°F

9.18 Viscosity: 1.76-1.88 cts

9.19 Storage life: At recommended conditions a minimum of 2 years

10. Stability and Reactivity

10.1 Reactivity: Strong oxidizers and acids

10.2 Chemical Stability: Stable if undiluted and not mixed with other chemicals. Storage life at recommended conditions:

10.3 Possibility of Hazardous Reactions: The introduction of acids may form toxic and highly flammable hydrogen sulfide gas. Do not use Aluminum and Copper fittings as they will corrode.

10.4 Conditions to Avoid: Direct sunlight, excessive heat and freezing conditions.

OR-CAL Inc. | Rex Lime Sulfur Solution

10.5 Incompatible Materials: Oxidizing agents, acids, zinc, and corrosive to Aluminum and Copper

10.6 Hazardous Decomposition Products: Hydrogen sulfide

11. Toxicological Information

11.1 Oral: Oral Rat (female) LD50: > 920 mg/kg

11.2 Dermal: Dermal Rabbit LD50: >2000 mg/kg.

11.3 Inhalation: INH-Rat LC50: 3.6 mg/l (4 ½ hr. exposure)

11.4 Eye: Corrosive >41.3 Maximum Avg. Score (Wash) in Rabbits

11.5 Chronic/Carcinogenicity: Data not available

11.6 Teratology: Data not available

11.7 Reproduction: Data not available

11.8 Mutagenicity: Data not available

11.9 Other: "...it has been determined that the use of products containing calcium polysulfide as the sole active ingredient would not present a human health hazard to the general public." (USEAP, RED)

12. Ecological Information

12.1 Ecotoxicity:

Green Algae EC 50: 14.1 ppm

Honey Bee LD 50: >25 µg ai/Bee

Avian LD 50: 560 ai/kg

Bobwhite Quail Dietary LC 50: >5000 ai/ppm

Mallard Duck LC 50: >5000 ai/ppm

12.2 Persistence & Degradability: "Calcium Polysulfide present in moist soils and/or on moist foliage is expected to dissociate rapidly; therefore, run-off and erosion into surface water, as present calcium polysulfide, should be negligible." (USEPA, RED)

12.3 Bioaccumulative Potential: This product is not bioaccumulative

12.4 Mobility in Soil: No data available

12.5 Other Adverse Effects: None known at this time

Note: Ecological Information derived from

United States. Environmental Protection Agency.

Reregistration Eligibility Document for Inorganic Polysulfides.
30 September.

2005< http://www.epa.gov/pesticides/reregistration/REDs/inorganic_polysulfides_red.pdf .>

13. Disposal Considerations

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of

Federal Law. If these wastes cannot be disposed of according to label instructions, contact your State Pesticide or Environmental Control Agency. Consult International, Federal, State, and local agencies for disposal regulations.

14. Transport Information

14.1 Basic Shipping Description:

- 14.1.1 UN Number: Not listed
- 14.1.2 UN proper shipping name: Rex Lime Sulfur Solution (Not regulated by DOT)
- 14.1.3 Class: Not Applicable
- 14.1.4 Packing Group: Not applicable
- 14.1.5 Hazardous Substance: No

14.2 Additional Information:

- 14.2.1 Other DOT Requirements: (not regulated by DOT)
 - 14.2.1.1 Reportable Quantity: No
 - 14.2.1.2 Placard(s): Not Applicable
 - 14.2.1.3 Labels(s): Not Applicable
- 14.2.2 USCG Classification:
- 14.2.3 International Transportation:
 - 14.2.3.1 IMO:
Environmentally hazardous substance
liquid, n.o.s. (calcium polysulfide)
 - 14.2.3.2 IATA:
Non-hazardous under IATA regulations
 - 14.2.3.3 TDG (Canada):
Not regulated
 - 14.2.3.4 ADR (Europe):
Environmentally hazardous substance
liquid, n.o.s (Calcium polysulfide)
 - 14.2.3.5 ADG (Australia):
Environmentally hazardous substance,
liquid, n.o.s. (Calcium polysulfide)
 - 14.2.3.6 RR STCC:
2899980
- 14.2.4 Emergency Response Guide: Not Listed
- 14.2.5 ERAP-Canada: Not Required
- 14.2.6 Special Precautions: As stated by the US EPA, "due to the rapid dissociation of calcium polysulfides to components with very low toxicity, no mitigation for freshwater fish, mammals or avian species is warranted at the time." (USEPA, RED)

15. Regulatory Information

15.1 U.S. Federal Regulations:

- 15.1.1 OSHA: This product meets the criteria of the Federal OSHA Hazard Communication Standard 29 CFR §1910.1200
- 15.1.2 TSCA: This product is listed
- 15.1.3 CERCLA: Reportable Quantity- Not Applicable
- 15.1.4 SARA Title III:
 - 15.1.4.1 Extremely Hazardous Substance (EHS): No
 - 15.1.4.2 Section 312 (Tier II) Ratings:
Fire: No
Sudden Release: No
Reactivity: Yes
Immediate (acute): Yes
Delayed (chronic): No
 - 15.1.4.1 Section 313 (FORM R): No
- 15.1.5 RCRA (Resource Conservation & Recovery Act) Status: Not Applicable
- 15.1.6 CAA (Hazardous Air Pollutant/HAP): Not Applicable

15.2 International Regulations:

- 15.2.1 Canada:
 - 15.2.1.1 WHMIS: Class E
 - 15.2.1.2 DSL/NDSL: Listed on NDSL, Record No. 28636

15.3 State Regulations:

- CA Proposition 65: Not Applicable

16. Other Information

16.1 Use of Substance/Preparation:

- 16.1.1 Rex Lime Sulfur Solution is used as a Fungicide, Insecticide, and Miticide for Listed Fruits, Nuts, Ornamentals, Roses, and Livestock. It's not for residential use or application to residential sites. Consult the Label for listed application sites. You must read the entire label before use. The label is the Law, noncompliance will result in civil or criminal penalties.
- 16.1.2 Rex Lime Sulfur Solution is prepared by mixing water to make a ½ to 10% spray solution as determined by the label instructions. You must read the entire label before use.

16.2 Abbreviations:

- ACGIH: American Conference of Gov. Industrial Hygienists
- ADG: Australian Dangerous Goods
- ADR: Carriage of Dangerous Goods by Road (Europe)
- A.I. Active Ingredient
- CAA: Clean Air Act

CAS: Chemical Abstracts Service Registry Number
CERCLA: Comprehensive Environmental Response
Compensation and Liability Act
DSL/NDSL: Domestic/Non-Domestic Substance List
ERAP: Emergency Response Assistance Plan (Canada)
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
GHS: Globally Harmonized System of Classification
IATA: Integrated Approaches to Testing and Assessment
IMO: International Maritime Organization
NA: Not Applicable
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
STCC: Standard Transportation Commodity Code
TDG: Transportation of Dangerous Goods (Canada)
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act Inventory

TWA: Time Weighted Average (8 hours)
USEPA: United States Environmental Protection Agency
WHMIS: Workplace Hazardous Materials information System

Revisions: This SDS was reformatted to comply with the new Hazard Communication Standard dated May 29th, 2015, by the Regulatory Department of OR-CAL Inc.

The information compiled in this safety data sheet is believed to be accurate and is given in good faith, but it is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. No warranty or guarantee, expressed or implied, is made regarding performance, stability or otherwise, of this product, as the manner and conditions of use, handling, storage and other factors may involve other additional safety or performance considerations. No suggestions for use are intended as, and nothing herein shall be constructed as a recommendation to infringe any existing patents or violate International, Federal, State, Tribal, or local laws.