Creating Value Through Innovative Solutions

# Safety Data Sheet
# Lime Sulfur Solution

**SDS Number:** 2900 **Revision:** 5/17/2013

## Section 1: Identification

**1a. Product Name** **Lime Sulfur Solution EPA Reg No 61842-30**

**1b. Other Identification:**

| | |
|---|---|
| Chemical Family | Inorganic salt solution |
| Formula | $CaS_x$ |
| EC Pre-Registration #: | 05-2118202566-47-0000 |

**1c. Recommended Use of Chemical:** Agricultural Industry, Pesticide - Fungicide

**1d. Manufacturer**

Tessenderlo Kerley Inc.
2255 N. 44th Street, Suite 300
Phoenix, Arizona 85008-3279

Information (602) 889-8300

**1e. Emergency Contact**

| | |
|---|---|
| Tessenderlo Kerley, Inc. | (800) 877-1737 |
| CHEMTREC | (800) 424-9300 (Domestic) |
| | (703) 527-3887 (International) |

## Section 2: Hazard(s) Identification

**2a. 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 2B |
| Physical | None | |

**2b. Signal Word** Warning

**Hazard Statement(s):**

Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled
Causes skin irritation
Causes eye irritation

**Symbol(s):**

**Precautionary Statement(s):**

Wash thoroughly with soap and water after handling.
If swallowed, get medical attention/contact Poison Control Center immediately.

Wear protective gloves/protective clothing when handling product.
If contact with the skin: Was immediately with water for 15 minutes.
Avoid breathing product vapors/mist.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do so. Continue rinsing.
Use/store in cool, well ventilated areas.
Keep away from any sources of heat or flames.
Store totes or small containers out of direct sunlight.
Do not allow release to aquatic waterways.

**2c. Unclassified Hazard(S):** Potential aquatic toxicity.

**2d. Unknown Toxicity Ingredient:** None

## Section 3: COMPOSITION/ INFORMATION ON INGREDIENTS

**3.1 Chemical Ingredients** (See Section 8 for exposure guidelines)

| Chemical | Synonym Common Name | CAS No. | EINECS No. | % by Wt. |
|---|---|---|---|---|
| Calcium polysulfide, $CaS_x$ | Lime sulfur, calcium sulfide | 1344-81-6 | 215-709-2 | 24 - 29 |
| Water | Water | 7732-18-5 | 231-791-2 | 71 - 76 |

## Section 4: FIRST AID MEASURES

**4.1 Symptoms/Effects**

Acute: Eye contact may cause eye irritation. Repeated or prolonged skin contact may cause skin irritation. Ingestion may irritate the gastrointestinal tract.

Chronic: No known chronic effects.

**4.2 Eyes:** Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to insure thorough flushing of the entire area of the eye and lids. Obtain medical attention if irritation occurs.

**4.3 Skin:** Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Obtain medical attention if irritation occurs.

**4.4 Ingestion:** If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Obtain medical attention.

**4.5 Inhalation:** Remove victim from contaminated atmosphere. If breathing is labored, administer oxygen. If breathing has ceased, clear airway and start mouth to mouth resuscitation. If heart has stopped beating, external heart massage should be applied. Obtain medical attention.

## Section 5: FIRE FIGHTING MEASURES

**5.1 Flammable Properties:** (See Section 9, for additional flammable properties)

Heating this product will evolve hydrogen sulfide vapors.

**5.2 Extinguishing Media:**

**5.2.1 Suitable Extinguishing Media:** Not flammable, use media suitable for combustibles involved in fire.

**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. Vapors are irritating to eyes, skin and respiratory tract.

**5.3.2: Protective equipment and precautions for firefighters:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear. Keep containers/storage vessels in fire area cooled with water spray.

## Section 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal Precautions**

Use personal protective equipment specified in Section 8. Isolate the release area and deny entry to unnecessary, unprotected and untrained personnel.

**6.2 Environmental Precautions**

This product is not a water pollutant in accordance with the Clean water Act, but should be kept out of "waters of the US" because of potential aquatic toxicity (See Section 12).

**6.3 Methods of Containment**

**Small releases:** Confine and absorb small releases on sand, earth or other inert absorbent.

**Large releases:** Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbent 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:** Recover as much of the spilled product using portable pump and hoses. Treat remaining material as a small release (above).

## Section 7: HANDLING and STORAGE

**7.1 Handling:** Avoid contact with eyes. Use only in a well ventilated area. Wash thoroughly after handling. Avoid prolonged or repeated breathing of vapors. Avoid prolonged or repeated contact with the skin.

**7.2 Storage:** Store in well ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store tote and smaller containers out of direct sunlight at moderate temperatures. (See Section 10.5, for materials of construction)

## Section 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

| **8.1 Exposure Guidelines:** | OSHA | | ACGIH | |
|---|---|---|---|---|
| | TWA | STEL | TLV | STEL |
| Hydrogen sulfide | 20 ppm (ceiling) | | 10 ppm (ceiling) | |

**8.2 Engineering Controls:** Use adequate exhaust ventilation to prevent inhalation of product vapors.

**8.3. Personnel Protective Equipment (PPE)**

**8.3.1 Eye/Face Protection:** Chemical goggles and a full face shield.

**8.3.2 Skin Protection:** Neoprene rubber gloves and apron should be worn to prevent repeated or prolonged contact with the liquid. Wash contaminated clothing prior to reuse.

**8.3.3 Respiratory Protection:** Have self-contained breathing apparatus, positive pressure, MSHA/NIOSH (approved or equivalent) available in case of spillage or equipment failure.

**General Hygiene Considerations:** Common good industrial hygiene practices should be followed, such as, washing thoroughly after handling and before eating or drinking.

## Section 9: PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| **9.1 Appearance/State/odor:** | Ruby-red/liquid/strong odor of rotten eggs. |
| **9.2 Odor Threshold:** | 0.13 ppm faint, but easily noticeable at 0.77 ppm. |
| **9.3 pH :** | 11.5 – 11.7 |
| **9.4 Freezing Point:** | Not determined. |
| **9.5 Boiling Point:** | Not determined. |
| **9.6 Flash Point: :** | Not applicable. |
| **9.7 Evaporation Rate:** | Not determined. |
| **9.8 Flammability:** | Not applicable. |
| **9.9 Flammability Limits:** | Not applicable. |
| **9.10 Vapor Pressure:** | None at ambient temperatures. |
| **9.11 Vapor Density:** | Not determined |
| **9.12 Specific gravity:** | 1.27 (10.6 lbs/gal) |
| **9.13 Solubility:** | Dissolves with precipitation of elemental sulfur. |
| **9.14 Partition Coefficient:** | Data not available. |
| **9.15 Auto-ignition Temperature:** | Not applicable. |
| **9.16 Decomposition Temperature:** | Not determined. |
| **9.17 Viscosity:** | 2.95 cSt @ 20°C, 2.5 cSt @ 30°C. |

## Section 10: STABILITY and REACTIVITY

**10.1 Reactivity:** Strong oxidizers and acids

**10.2 Chemical Stability:** This is a stable product under conditions of ambient temperatures and pressure.

**10.3 Possibility of hazardous reactions:** Interaction with strong oxidizers, acids or acidic materials.

**10.4 Conditions to Avoid:** Interaction with strong oxidizers or acidic materials (evolution of hydrogen sulfide vapors).

**10.5 Incompatible :** Strong oxidizers can cause explosive mixtures if heated to dryness.
Acids, acidic materials and dilution with water will cause the release of highly toxic hydrogen sulfide vapors.

**10.6 Hazardous Decomposition Products:** Hydrogen sulfide and oxides of sulfur.

## Section 11: TOXICOLOGICAL INFORMATION

**11.1 Oral:** Oral Rat $LD_{50}$: 820 mg/kg

**11.2 Dermal:** Dermal Rabbit $LD_{50}$: > 2,000 mg/kg.

**11.3 Inhalation:** INH-Rat $LC_{50}$: 3.6 mg/L (4 hr. exposure)

**11.4 Chronic/Carcinogenicity:** Not listed in NTP, IARC or by OSHA.

**11.5 Teratology:** Data not available

**11.6 Reproduction:** Data not available

**11.7 Mutagenicity:** Data not available

## Section 12: ECOLOGICAL INFORMATION

**12.1 Ecotoxicity** Green Algae, $EC_{50}$: 16.4 mg/l

Water Flea, $EC_{50}$: 13.7 mg/l.

Bluegill, $LC_{50}$: 52.9 mg/l.

Flathead Minnow, $LC_{50}$: 42.9 mg/l

Rainbow trout, $LC_{50}$: 8.8mg/l.

**12.2 Persistence & Degradability** No data is available.

**12.3 Bioaccumulative potential** This product is not bioaccumulative.

**2.4 Mobility in Soil** No data available.

**12.5 Other Adverse Effects** None

## Section 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it should be checked for reactive sulfides prior to disposal. Consult state and local regulations for different or more restrictive disposal regulations.

## Section 14: TRANSPORT INFORMATION

### 14.1 Basic Shipping Description

**14.1.1 Proper Shipping Name:** *(Not regulated by DOT)*
**14.1.2 Hazard Class(s):** NA
**14.1.3 Identification Number:** NA
**14.1.4 Packing Group:** NA
**14.1.5 Hazardous Substance:** No
**14.1.6 Marine Pollutant:** No

### 14.2 Additional Information

**14.2.1 Other DOT Requirements**

**14.2.1.1 Reportable Quantity:** No
**14.2.1.2 Placard(s):** NA
**14.2.1.3 Label(s):** NA

**14.2.2 USCG Classification:** Not determined.

**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 – See US DOT Section 14.1.1.

**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)

**14.2.4 Emergency Response Guide:** Not applicable

**14.2.5 ERAP - Canada:** Not applicable

**14.2.6 Special Precautions:** Not applicable

## Section 15: REGULATORY INFORMATION

### 15.1 US 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:** Product is contained in USEPA Toxic Substance Control Act Inventory

**15.1.3 CERLA:** Reportable Quantity – Not applicable

**15.1.4 SARA Title III**

**15.1.4.1 Extremely Hazardous Substance (EHS):** Not Applicable

**15.1.4.2 Section 312 (Tier II) ratings:**

| | |
|---|---|
| Immediate (acute) | Yes |
| Fire | No |
| Sudden release | No |
| Reactivity | No |
| Delayed (chronic) | No |

**15.1.4.3 Section 313 (FORM R):** Not applicable

**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**

**15.2.1Canada**

| | | |
|---|---|---|
| 15.2.1.1 | **WHIMIS:** | Not determined |
| 15.2.1.2 | **DSL/NDSL:** | Listed in NDSL, Record No. 28636 |

**NFPA: Health - 2 Flammability - 0 Reactivity - 0**

## Section 16: OTHER INFORMATION

**REVISIONS:** The entire SDS was reformatted to comply with ANSI Standard Z400.1-2004, and OSHA Hazard Communications Act (GHS), by Tessenderlo Kerley, Inc., Regulatory Affairs.

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