



# Super Conductor Materials, Inc.

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Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revisions Date: January 8<sup>th</sup>, 2019

## SAFETY DATA SHEET

Identity: Lithium Sulfide

Formula: Li<sub>2</sub>S

### SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 45.95

CAS #	OSHA PEL	ACGIH TLV	%
12136-58-2	NE	NE	0.0 – 100.0%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 900.00°C – 975.00°C

Density: 1.66 gm/cc

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Very soluble

*Appearance and odor:* White-yellow, deliquescent powder, may have rotten egg odor.

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Method Used:* Unknown

*Explosive Limits:* LEL: N/A

UEL: N/A

*Extinguishing Media:* Use suitable extinguishing agent for surrounding material and type of fire

#### *Special Fire Fighting Procedures:*

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

#### *Unusual Fire and Explosion Hazards:*

- Flammable when exposed to flame or by spontaneous chemical reaction.
- When heated to decomposition, lithium sulfide may emit toxic fumes of hydrogen sulfide.
- Reacts with water, moisture or steam to evolve toxic and flammable hydrogen sulfide.
- May ignite easily in air at room temperature.



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-May ignite violently on contact with powerful oxidizing agents.

## SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (instability):* None

*Incompatibility:* Acids, water, moisture, steam and oxidizing agents.

*Hazardous Decomposition or Byproducts:* Hydrogen sulfide and oxides of sulfur

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

## SECTION VI - HEALTH HAZARD DATA

*Routes of entry:* Inhalation? Yes      Skin? Yes      Eyes? Yes      Ingestion? Yes      Other? No

To the best of our knowledge the chemical, physical and toxicological properties of lithium sulfide have not been thoroughly investigated and recorded.

The toxicity of lithium compounds is a function of their solubility in water. Lithium ion has central nervous system toxicity. The initial effects of lithium exposure are tremors of the hands, nausea, micturition, slurred speech, sluggishness, sleepiness, vertigo, thirst and increased urine volume. Effects from continued exposure are apathy, anorexia, fatigue, lethargy, muscular weakness, and changes in ECG. Long-term exposure leads to hypothyroidism, leukocytosis, edema, weight gain, and polydipsia/polyuria (increased water intake leading to increased urinary output: memory impairment, seizures, kidney damage, shock, hypotension, cardiac arrhythmias, coma, and death. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Sulfides have variable toxicity. The alkaline sulfides (potassium, calcium, ammonium, and sodium) are similar in action to alkalies. They cause softening and irritation of the skin. If ingested they are corrosive and irritating through the liberation of hydrogen sulfide and free alkali. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

### Signs and Symptoms of Overexposure:

*Inhalation:* May cause tremors of the hands, nausea, micturition, slurred speech, sluggishness, sleepiness, vertigo, thirst increased, urine volume, apathy, anorexia, fatigue, lethargy muscular weakness, changes in ECG, liver and kidney damage, altered respiratory rate, convulsions, hypothyroidism, leukocytosis, edema, weight gain, polydipsia/polyuria, memory impairment, seizures, shock hypotension and cardiac arrhythmias.

*Ingestion:* May cause nausea, vomiting and stomach cramps.

*Skin:* May cause redness, burning sensation, inflammation and itching.

*Eye:* May cause redness, burning sensation, itching and watering.

### Health Hazards (Acute and Chronic):

#### *Inhalation:*

Acute: May cause tremors of the hands, nausea, micturition, slurred speech, sluggishness, sleepiness, vertigo, thirst, increased urine volume, apathy anorexia, fatigue, lethargy muscular weakness, changes in ECG, altered respiratory rate, convulsions, liver and kidney damage.



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Chronic: May cause hypothyroidism, leukocytosis, edema, weight gain, polydipsia/polyuria memory impairment, seizures, kidney damage, shock hypotension, cardiac arrhythmias, coma and death.

*Ingestion:*

Acute: May cause gastrointestinal irritation.

Chronic: No chronic health effects recorded.

*Skin:*

Acute: May be a severe irritant.

Chronic: No chronic health effects recorded.

*Eye:*

Acute: May be a severe irritant.

Chronic: No chronic health effects recorded.

*Target Organs:* May affect the central nervous system.

*Carcinogenicity:* NTP? No IARC Monographs? No OSHA Regulated? No

*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory and skin disorders.

*Emergency and First Aid Procedures:*

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

*Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention.

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

*Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

*Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

*Precautions:* Lithium sulfide may react with water, moisture and steam. Handle and store in a controlled environment and an inert gas, such as argon.

## SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*



## **Super Conductor Materials, Inc.**

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NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

*Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels

Special: Handle in a controlled atmosphere

Mechanical (General): Not recommended

Other: Handle in an inert gas such as argon

*Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area.

Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
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