

Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300
Poison Center: (800) 562-8236
Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Manganese selenide

Formula: MnSe

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: 133.90

CAS #	OSHA PEL	ACGIH TLV	%
1313-22-0	5mg/m ³	5mg/m ³	0.0100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure: NE

Melting Point: N/A

Vapor Density: NA

Evaporation Rate: N/A

Specific Gravity (water=1): 5.45 gm/cc at 15.0°C

Solubility in water: Insoluble

Flash Point: NA

Appearance and odor: Gray powder pieces, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Non-Flammable

Explosive Media: LEL: N/A

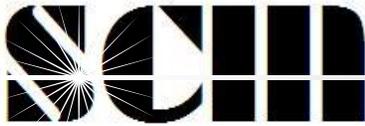
UEL: N/A

Extinguishing Media: Use suitable extinguishing media for surrounding materials and type of fire.

Special Fire Fighting Procedures:

Fire fighters 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: When heated to decomposition, manganese selenide may emit toxic fumes of selenium.



SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid: None

Incompatibility (Materials to avoid): None

Hazardous Decomposition or Byproducts: Fumes of Selenium

Hazardous polymerization: Will not occur

Conditions to Avoid (Hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

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

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

Some manganese compounds are experimental tumorigens. They can cause central nervous and pulmonary system damage by inhalation of fumes and dust. Very few poisonings have occurred from ingestion. Chronic manganese poisoning is a clearly characterized disease which results from inhalation of fumes or dusts of manganese. The central nervous system is the chief site of damage. Exposure to dusts and fumes can possibly increase the incidence of upper respiratory infections and pneumonia. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Selenium compounds are poison by inhalation and intravenous routes. Some selenium compounds are experimental carcinogens. Long-term exposure may be a cause of amyotrophic lateral sclerosis in humans, just as it may cause "blind staggers" in cattle. Elemental selenium has low acute systemic toxicity, but dust or fumes can cause serious irritation of the respiratory tract. Inorganic selenium compounds can cause dermatitis. Garlic odor of breath is a common symptom. Pallor, nervousness, depression, digestive disturbances and death have been reported in cases if chronic exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Signs and Symptoms of overexposure:

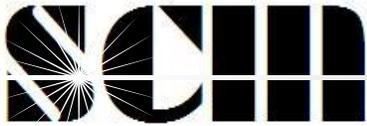
Inhalation: May cause red, dry throat. Acute selenium poisoning may cause: nervousness, fever, vomiting, somnolence, drop in blood pressure, labored breathing and toxic action on the nervous system may lead to respiratory failure. Chronic selenium poisoning may cause: depression, marked pallor, coated tongue, gastrointestinal disorders, garlic odor of the breath. Metal fume fever may cause: chills, fever, muscle aches, headache, and dry throat, and sleepiness, weakness in the legs, muscular twitching, nocturnal leg cramps and slowness of speech. Manganism may cause: a slapping gait, cramps, tremors, slurred speech, hallucinations, insomnia and mental confusion. These symptoms resemble Parkinson's disease. Other symptoms of manganism include: inflammation of the kidneys, cirrhosis of the liver, anorexia, muscular fatigue, sexual impotence, reduction of the white blood cells and anemia.

Ingestion: Chronic selenium poisoning may cause: alkali disease, loss of vitality, lameness, atrophy, cirrhosis of the liver, degeneration and necrosis of the myocardium.

Skin: May cause redness, itching and inflammation.

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

Health Hazards (Acute and Chronic):



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Inhalation:

Acute: DANGER-POISON. May cause irritation of the respiratory tract and mucous membranes and acute selenium poisoning. Inhalation of manganese compounds' fine dusts and fumes may cause metal fume fever.

Chronic: Chronic inhalation of manganese compounds' dust particles, approximately 3 um in size, for a period of a few months may cause pulmonary pneumonitis. However, dust particles approximately 5 um in size, inhaled for about 4 hours daily for three months did not produce pneumonitis, but may cause fibrotic changes in the lungs, decrease in hemoglobin and a change in erythrocyte levels. May cause manganism, psychic and neurological disorders effecting the central nervous system, to develop (manganism is not fatal but, can cause permanent disability). May cause chronic selenium poisoning. Continued intoxication may cause loss of nails and hair, hemolytic anemia, And kidney, liver and spleen damage.

Ingestion:

Acute: DANGER-POISON. May cause gastrointestinal disturbances.

Chronic: May cause chronic selenium toxicity.

Skin:

Acute: May cause irritation.

Chronic: May cause dermatitis.

Eye:

Acute: May cause irritation.

Chronic: Irritant dusts may cause conjunctivitis damage.

Target Organs: May affect the central nervous system, blood, kidneys, respiratory system and liver.

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

Medical Condition Aggravated by Exposure: Pre-existing respiratory disorder.

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, keep warm and quiet, and seek medical attention.

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 if symptoms persist.

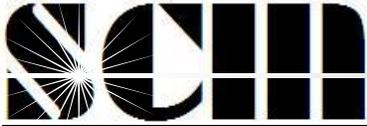
SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

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

Wear appropriate respiratory and protective equipment specified in section VIII-Control Measures. Isolate spill area, provide ventilation. 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.



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Hazard Label Information:

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

Precautions: Avoid breathing dust

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

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

Respiratory Protection (Specify Type) – NIOSH – approved dust respirator.

Ventilation:

Local Exhaust: To maintain concentration at or below the PEL, TLV

Special: Handle in a controlled, enclosed process.

Mechanical (General): Not recommended

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
