



# 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 8<sup>th</sup>, 2019

## SAFETY DATA SHEET

Identity: Manganese fluoride

Formula:  $MnF_2$

### 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: 92.93

CAS #	OSHA PEL	ACGIH TLV	%
7782-64-1	5mg/m <sup>3</sup>	0.2mg/m <sup>3</sup>	0.0-100.0%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Melting Point: 856.00°C

Evaporation Rate: N/A

Solubility in water: Insoluble

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

Specific Gravity ( $H_2O=1$ ): 3.98gm/cc

Vapor Density (vs. air=1): N/A

Flash Point: N/A

*Appearance and odor:* Red powder and pieces, no odor.

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

*Method Used:* N/A

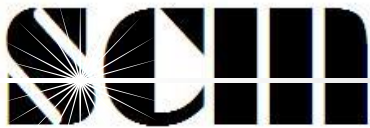
*Explosive Limits:* LEL: N/A

UEL: N/A

*Extinguishing Media:* Use suitable extinguishing agent for surrounding materials 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:* When heated to decomposition, manganese fluoride may emit fumes of fluorine



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## SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (stability):* None

*Incompatibility:* None recorded

*Hazardous Decomposition or Byproducts:* Fumes of fluorine

*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 manganese fluoride 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.

Inorganic fluorides are generally highly irritating and toxic. Chronic fluorine poisoning, or "fluorosis," occurs among miners of cryolite, and consists of sclerosis of the bones, caused by fixation of the calcium by fluorine. There may also be some calcification of the ligaments. The teeth are mottled, and there is osteosclerosis and ostemalacia. Large doses can cause very severe nausea, vomiting, and diarrhea; aggravate attacks of asthma and severe bone changes, making normal movements painful. Some signs of pulmonary fibrosis are noted. Some enzyme system effects are reported. Irritants to the eyes, skin and mucous membranes. Loss of weight, anorexia, anemia, wasting and cachexia and dental defects are among the common findings in chronic fluorine poisoning. There may be an eosinophilia and impairment of growth in young workers. Symptoms of intoxication include gastric, intestinal, circulatory, respiratory and nervous complaints and rashes. (Sax, Dangerous Properties of Industrial Materials, eighth edition).

### Signs and symptoms of Overexposure:

*Inhalation:* May cause red, dry throat, ulcers of the upper respiratory tract, excessive salivation, vomiting, thirst, sweating, colic and diarrhea. Fibrosis may cause: sclerosis of the bones, calcification of ligaments, mottled teeth, osteosclerosis, and ostemalacia, loss of weight, anorexia, anemia, wasting, cachia and dental defects. 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. Manganese may cause: a slapping gait, cramps, tremors, slurred speech, hallucinations, insomnia and mental confusion. These symptoms resemble Parkinson's disease. Other symptoms of manganese include: inflammation of the kidneys, cirrhosis of the liver, anorexia, muscular fatigue, sexual impotence, reduction of the white blood cells and anemia.

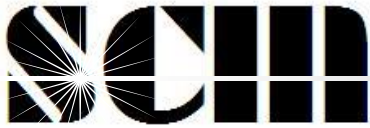
*Ingestion:* May cause nausea, vomiting, diarrhea, abdominal burning, cramp-like pain, a stiff spine, calcification of ligaments of the ribs and pelvis.

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

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

### Health Hazards (Acute and Chronic):

*Inhalation:*



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**Acute:** May cause irritation of the respiratory tract and mucous membranes. May cause metal fume fever, asthma attacks, excessive salivation, thirst, sweating, vomiting, colic, diarrhea and lung granulomas.

**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 fluorosis, severe bone changes, pulmonary fibrosis, manganese, psychic and neurological disorders effecting the central nervous system, to develop (manganism is not fatal but, can cause permanent disability).

### *Ingestion:*

**Acute:** May cause gastrointestinal irritation, nausea, vomiting, diarrhea and cramp-like pains.

**Chronic:** May affect the circulatory, enzyme and nervous system.

### *Skin:*

**Acute:** May cause irritation, rashes and skin granulomas.

**Chronic:** May cause dermatitis.

### *Eye:*

**Acute:** May cause irritation.

**Chronic:** Irritant dusts may cause conjunctivitis damage.

**Target Organ:** May affect the skeleton, central nervous system, kidneys, respiratory system, and liver.

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

**Medical Conditions 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 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-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.

### *Hazard Label Information:*

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

**Precautions:** Avoid breathing dust



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SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*

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

*Ventilation:*

Local Exhaust: If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Mechanical (General): 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