



# Super Conductor Materials, Inc.

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Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

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

## SAFETY DATA SHEET

Identity: Manganese Oxide

Formula: MnO

### 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: 70.94

CAS #	OSHA PEL	ACGIH TLV	%
1344-43-0	5 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	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: 1650.00 C (3002.0 F)

Density: 5.45 g/cm<sup>3</sup>

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Soluble in acids

*Appearance and odor:* Green powder and pieces, no 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:*

- Violent reaction with hydrogen peroxide, calcium oxychloride and fluorine.
- Manganese oxide converts to manganese tetroxide if heated in air.



SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (instability):* None

*Incompatibility (materials to avoid):* Strong Oxidizing agents

*Hazardous Decomposition or Byproducts:* Magnesium fume

*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 oxide 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).

Signs and Symptoms of Overexposure:

*Inhalation:* May cause red, dry throat. 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:* No acute or chronic health effects recorded.

*Skin:* May cause redness, itching.

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

Health Hazards (Acute and Chronic):

*Inhalation:*

Acute: May cause irritation of the respiratory tract and mucous membranes, increase the incidence of upper respiratory tract and pulmonary infections. May cause metal fume fever. May also cause emphysema and acute pulmonary edema.

Chronic: May cause pulmonary pneumonitis, manganism (psychosis and neurological disorders affecting the central nervous system).

*Ingestion:*

Acute: Absorption of manganese compounds from the gastrointestinal tract is poor under normal conditions. May cause abdominal pain and nausea.



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Chronic: May cause manganism.

*Skin:*

Acute: May cause irritation.  
Chronic: May cause dermatitis.

*Eye:*

Acute: May cause irritation.  
Chronic: Irritant salts may cause conjunctivitis damage.

*Target Organs:* May affect the central nervous system, respiratory system, liver and reproductive system.

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

*Medical Conditions Generally Aggravated by Exposure:* Pre-existing respiratory 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.

## SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*

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

*Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.  
Mechanical (General): Recommended.

*Work/Hygienic/Maintenance Practices:*



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

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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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