

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 oxide

Formula: MnO₂

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: 86.94

CAS #	OSHA PEL	ACGIH TLV	%
1313-13-9	5mg/m ³	0.2mg/m ³	0.0-100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure: N/A

Melting Point: 535°C

Specific Gravity (Water=1): 5.026 gm/cc

Percent Volatile: N/A

Flash Point: NA

Solubility in water: Insoluble/
soluble in nitric and sulfuric acid

Appearance and odor: Black powder, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

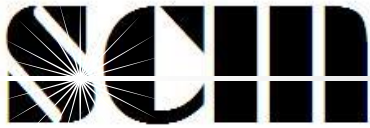
Method Used: N/A

Explosive Limits: LEL: N/A

UEL: N/A

Extinguishing Media: Use graphite, dry sodium chloride, dry chemical, carbon dioxide or an agent for metal fires.

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



Super Conductor Materials, Inc.

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

Unusual Fire and Explosion Hazards:

- Oxidizer
- Flammable by chemical reaction.
- Violent thermite reaction when heated with aluminum; Potentially explosive reaction with hydrogen peroxide.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): None

Incompatibility – (Materials to Avoid): Strong oxidizer. Do not heat or rub in contact with easily oxidizable materials. Avoid contact with hydrogen peroxide, sulfuric acid, sodium peroxide, chlorates and heat, organic materials, combustible materials, aluminum powder and sulfur, hydrogen sulfide, peroxomonosulfuric acid, anilinium perchlorate, diboron tetrafluoride, oxidizers, warmed potassium azide, chlorine trifluoride, rubidium acetylide, hydroxylaminium chloride

Hazardous Decomposition or Byproducts: Manganese may react with water to produce hydrogen and unsaturated hydrocarbons in the event of combustion.

Hazardous Polymerization: Will not occur

Conditions to avoid: None

SECTION VI - HEALTH HAZARD DATA

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

Signs and Symptoms of Exposure:

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. 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: 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: Inhalation of Manganese compounds is considered the primary route of exposure, they may cause irritation of the respiratory tract and mucous membranes. 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. Manganese compounds may also cause manganism, psychic and neurological disorders effecting the central nervous system, to develop (magnesium is non-fatal, but can cause permanent disability).

Ingestion:

Acute: Absorption of manganese compounds from the gastrointestinal tract is poor under normal conditions.

Chronic: No chronic health effects recorded.



Super Conductor Materials, Inc.

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

Skin:

Acute: May cause irritation. Moderately toxic by subcutaneous route.

Chronic: May cause dermatitis.

Eye:

Acute: May cause irritation.

Chronic: Irritant salts may cause conjunctivitis damage.

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

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

Medical Conditions Aggravated by Exposure: It has been recorded that when exposed to manganese dust and fumes, there is a higher incidence of upper respiratory infection and pneumonia compared to the general population.

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 immediately.

Ingestion: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediately. 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 immediately.

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

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. 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. Use non-sparking tools.

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 dusts and use adequate ventilation.

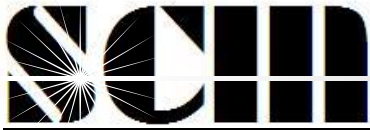
SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

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

Ventilation:

Local Exhaust: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits



Super Conductor Materials, Inc.

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

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
