

Material Safety Data Sheet

Identity: Manganese fluoride

Formula: MnF₂

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM 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 ³	0.2mg/m ³	0.0-100%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

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

Melting Point: 856.0 °C

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

Evaporation Rate: N/A

Percent Volatile: N/A

Solubility in water: Insoluble

Specific Gravity (H₂O=1): 3.98gm/cc

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

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point: N/A

Explosive Limits: LEL: N/A UEL: N/A

Method Used: 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

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? No Eyes? No Ingestion? No Other? Yes

Signs and symptoms of Overexposure:

Inhalation: May cause dry red throat, ulcers of upper respiratory tract, sclerosis of the bones, calcification of the ligaments. The teeth are mottled and there is osteosclerosis and ostemalacia. Large doses can cause very severe nausea, vomiting, diarrhea aggravate asthma and severe bone changes making normal movements painful. Some signs of pulmonary fibrosis are noted along with enzyme system effects. Metal fume fever may cause chills, muscle aches, weakness in legs and muscular twitching.

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

Skin: May cause redness, itching and burning.

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

Health Hazards (Acute and Chronic):

Some manganese compounds are experimental tutoragees. They can cause central nervous and pulmonary system damage by inhalation of fumes and dust. Very few poisonings have occurred from ingestion. Inorganic fluorides are generally highly irritating and toxic. Chronic fluorine poisoning occurs among miners of cryolite, and consists of sclerosis of the bones, cause 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, diarrhea aggravate asthma and severe bone changes making normal movements painful. Some signs of pulmonary fibrosis are noted along with enzyme system effects. Symptoms of intoxication include gastric, intestinal, circularity, respiratory and nervous complaints with rashes. (Sax, Dangerous Properties of Industrial Materials, eight editions.

Inhalation:

Acute: May cause irritation of respiratory tract and mucous membranes.

Chronic: May cause pulmonary pneumonitis, changes in lungs; decrease in hemoglobin and in erythrocyte levels.

Ingestion:

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

Chronic: May affect 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:

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?

Medical Conditions Aggravated by Exposure:

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.

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:

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