



XI'AN FUNCTION MATERIAL GROUP CO., LTD  
Material Safety Data Sheet  
Manganese Fluoride

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1. Product and Company Identification

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Trade Name: Manganese Fluoride  
Chemical Formula:  $MnF_3$   
Recommended Use: Scientific research and development

Manufacturer/Supplier: XI'AN FUNCTION MATERIAL GROUP CO., LTD  
Street: No. 69, Gazelle Valley, High-Tech Zone  
City: XI'AN  
State: Shannxi  
Zip Code: 710077  
Country: China  
Tel #: +86-29-88993870/+86-13519132051

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2. Hazards Identification

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Signal Word: Danger

Hazard Statements: H272: May intensify fire; oxidizer  
H301: Toxic if swallowed  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H330: Fatal if inhaled  
H335: May cause respiratory irritation

Precautionary Statements: P221: Take any precaution to avoid mixing with combustibles  
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing  
P320: Specific treatment is urgent (Review SDS before handling this material)  
P405: Store locked up  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):  
Health: 3  
Flammability: 3  
Physical: 2

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### 3. Composition

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Chemical Family:	Ceramic
Additional Names:	Manganese trifluoride, Manganese (III) Fluoride, Manganic Fluoride
Manganese Fluoride (MnF <sub>3</sub> ):	
Percentage:	100 wt%
CAS #:	7783-53-1
EC #:	232-006-6

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### 4. First Aid Procedures

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General Treatment:	Immediately remove any clothing soiled by the product. Remove breathing apparatus only after contaminated clothing has been completely removed. Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	Causes skin irritation Causes serious eye irritation Fatal if inhaled Toxic if swallowed
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Give one to two glasses of water. Do not induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.
Skin:	Wash affected area with soap and water immediately. Rub in calcium gluconate solution or calcium gluconate gel immediately. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Consult a doctor.

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### 5. Firefighting Measures

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Flammability:	This material is classified as an oxidizer, and its heat of reaction with reducing agents or combustibles may cause ignition.
Extinguishing Media:	Use CO <sub>2</sub> , extinguishing powder, or foam. Water may be ineffective but may be used for cooling exposed containers.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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### 6. Accidental Release Measures

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If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust. Keep unprotected persons away.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

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## 7. Handling and Storage

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Handling Conditions:	Handle under dry protective gas. Material is hygroscopic. Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Open and handle with care. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	N/A
Threshold Limit Value:	N/A
Special Equipment:	None
Respiratory Protection:	Respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls.
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles with side shields
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color:	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	N/A
Water Solubility:	Decomposes
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	3.54 g/cc at 20°C
Molecular weight:	111.938 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Reducing agents Flammable Substances
Incompatible Conditions:	Flammable Substances Reducing agents Water/Moisture Organic Materials Metal Powders
Hazardous Decomposition Products:	Metal oxide fume Hydrogen Fluoride (HF) Manganese oxides

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	Causes irritation
Skin:	Irritation to skin and mucous membranes
Ingestion:	Toxic if swallowed
Inhalation:	Fatal if inhaled
Chronic:	The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple does toxicity data for this substance.

Signs & Symptoms: N/A

Aggravated Medical Conditions: N/A

Median Lethal Dose: LD50: 86 mg/kg for mouse by mouth (oral)  
LC50: 320 mg/m<sup>3</sup> for mouse by inhalation (inhalative)

Carcinogen: ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.  
EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

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## 12. Ecological Information

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Aquatic Toxicity: N/A  
Persistent Bioaccumulation Toxicity: No  
Very Persistent, Very Bioaccumulative: No  
Notes: Do not allow material to be released to the environment without proper governmental permits.  
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.  
Avoid transfer to the environment.

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## 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations. Disposal must be made according to official regulations.

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## 14. Transportation Data

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Hazardous: Hazardous for transportation.



Hazard Class: 5.1 Oxidizing Substance  
Secondary Class: 6.1 Toxic Substance  
Packing Group: II  
UN Number: UN 3087  
Proper Shipping Name: Oxidizing solid, toxic, n.o.s. (Manganese (III) fluoride)

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### 15. Regulatory Information

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Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	No

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### 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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