



Material Safety Data Sheet  
Manganese(II) sulfate powder

MSDS# 45328

Section 1 - Chemical Product and Company Identification

MSDS Name:	Manganese(II) sulfate powder
Catalog Numbers:	M118-3
Synonyms:	Manganous sulfate; Manganese(2+) sulfate.
Company Identification:	Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	201-796-7100
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300

Section 2 - Composition, Information on Ingredients

-----  
Risk Phrases:

CAS#:	7487-88-9
Chemical Name:	Magnesium sulfate
%:	7.1
EINECS#:	231-298-2
Hazard Symbols:	

-----  
Risk Phrases:

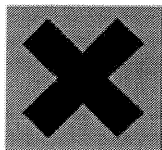
CAS#:	7778-18-9
Chemical Name:	Calcium sulfate
%:	1.2
EINECS#:	231-900-3
Hazard Symbols:	

-----  
Risk Phrases:

CAS#:	7785-87-7
Chemical Name:	Manganese(II) sulfate
%:	90.7
EINECS#:	232-089-9
Hazard Symbols:	

-----  
Text for R-phrases: see Section 16

Hazard Symbols:



Risk Phrases:

XN N



48/20/22 51/53

Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Warning! Hygroscopic (absorbs moisture from the air). May cause central nervous system effects. May cause lung damage. Harmful if inhaled or swallowed. May cause eye, skin, and respiratory tract irritation. Target Organs: Central nervous system, lungs, reproductive system.

### Potential Health Effects

Eye: May cause mild eye irritation.

Skin: May cause skin irritation. Low hazard for usual industrial handling.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: May cause respiratory tract irritation. The lowest exposure concentration of manganese at which early effects on the CNS and the lungs may occur is still unknown. However, once neurological signs are present, they tend to continue and worsen after exposure ends.

Chronic: Chronic inhalation or ingestion may result in manganism characterized by neurological symptoms such as headache, apathy, and weakness of the legs, followed by psychosis and neurological symptoms similar to those of Parkinson's disease. May impair fertility. Other chronic effects from inhaling high amounts of manganese include an increased incidence of cough and bronchitis and susceptibility to infectious lung disease.

### Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Remove contaminated clothing and shoes.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

### Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material will not burn.

Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

Autoignition Temperature: Not available.

Flash Point: Not available

Explosion Limits: Not available  
Lower:

Explosion Limits: Not available  
Upper:

NFPA Rating: health: 1; flammability: 0; instability: 0;

### Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

### Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust.

Storage: Store in a tightly closed container.

### Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Magnesium sulfate	none listed	none listed	none listed

Calcium sulfate	10 mg/m3 (inhalable fraction)	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Manganese(II) sulfate	0.2 mg/m3 TWA (as Mn) (listed under Manganese, inorganic compounds).	1 mg/m3 TWA (as Mn) (listed under Manganese compounds, n.o.s.). 500 mg/m3 IDLH (as Mn) (listed under Manganese compounds, n.o.s.).	5 mg/m3 Ceiling (as Mn) (listed under Manganese compounds, n.o.s.).

OSHA Vacated PELs: Magnesium sulfate: None listed Calcium sulfate: 15 mg/m3 TWA; 5 mg/m3 TWA (respirable fraction) Manganese(II) sulfate: None listed

**Engineering Controls:**

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Exposure Limits**

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear impervious gloves.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a

**Respirators:** NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Section 9 - Physical and Chemical Properties**

Physical State: Solid

Color: not available

Odor: none reported

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not applicable.

Viscosity: Not available

Boiling Point: Not applicable.

Freezing/Melting Point: Not available

Decomposition Temperature: Not available

Solubility in water: Not available.

Specific Gravity/Density: Not available.

Molecular Formula: Mixture

Molecular Weight: 0

**Section 10 - Stability and Reactivity**

**Chemical Stability:** Stable.

**Conditions to Avoid:** Dust generation, moisture, confined spaces.

**Incompatibilities with Other Materials** Not available

**Hazardous Decomposition Products** Oxides of sulfur, oxides of manganese.

**Hazardous Polymerization** Has not been reported.

## Section 11 - Toxicological Information

RTECS#: CAS# 7487-88-9: OM4500000  
CAS# 7778-18-9: WS6920000  
CAS# 7785-87-7: OP1050000

LD50/LC50: RTECS: Not available. RTECS: Not available. RTECS:  
CAS# 7785-87-7: Oral, mouse: LD50 = 2330 mg/kg;  
Oral, rat: LD50 = 2150 mg/kg;

Carcinogenicity: Magnesium sulfate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Calcium sulfate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Manganese(II) sulfate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

## Section 12 - Ecological Information

Not available

## Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

## Section 14 - Transport Information

US DOT

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

## Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N

Risk Phrases:

R 48/20/22 Harmful : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 22 Do not breathe dust.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 7487-88-9: 0

CAS# 7778-18-9: 0

CAS# 7785-87-7: 1

Canada

CAS# 7487-88-9 is listed on Canada's DSL List

CAS# 7778-18-9 is listed on Canada's DSL List

CAS# 7785-87-7 is listed on Canada's DSL List

Canadian WHMIS Classifications: D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 7487-88-9 is not listed on Canada's Ingredient Disclosure List.

CAS# 7778-18-9 is not listed on Canada's Ingredient Disclosure List.

CAS# 7785-87-7 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 7487-88-9 is listed on the TSCA Inventory.

CAS# 7778-18-9 is listed on the TSCA Inventory.

CAS# 7785-87-7 is listed on the TSCA Inventory.

**REVIEWED**

Section 16 - Other Information  
MSDS Creation Date: 9/02/1997  
Revision #6 Date 7/20/2009

DATE: July 18/2012  
*Chuttenford*

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

-----