

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/23/1999

Reviewed on 04/15/1999

## 1 Identification of substance:

### o Product details:

o Trade name: Manganese (II) nitrate, 50% solution

o Stock number: 33340

### o Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog  
Company, Inc. 30 Bond Street Ward Hill, MA 01835-8099 Emergency  
Phone: (978) 521-6300 CHEMTREC: (800) 424-9300 Web Site: [www.alfa.com](http://www.alfa.com)

o Information department: Health, Safety and Environmental Department

### o Emergency information:

During normal hours the Health, Safety and Environmental Department.  
After normal hours call Chemtrec at (800) 424-9300.

## 2 Composition/Data on components:

### o Chemical characterization:

Description: (CAS#)

Manganese (II) nitrate (CAS# 10377-66-9), 50%  
Water (CAS# 7732-18-5), 50%

## 3 Hazards identification

### o Hazard description:

Xn Harmful

O Oxidizing

### o Information pertaining to particular dangers for man and environment

R 8 Contact with combustible material may cause fire.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 40 Possible risks of irreversible effects.

## 4 First aid measures

### o After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

### o After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

- **After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing** Seek immediate medical advice.

- **Information for doctor**

- **The following symptoms may occur:** Gastric or intestinal disorders.

- **5 Fire fighting measures**

- **Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

- **Special hazards caused by the material, its products of combustion or**

**resulting gases:**

In case of fire, the following can be released:

Nitrogen oxides (NOx)

- **Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

- **6 Accidental release measures**

- **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

- **Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

- **Measures for cleaning/collecting:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Absorb with liquid-binding material.

- **Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- **7 Handling and storage**

- **Handling**

- **Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

- **Information about protection against explosions and fires:**

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

- **Storage**

- o **Requirements to be met by storerooms and receptacles:**  
No special requirements.
- o **Information about storage in one common storage facility:**  
Store away from flammable substances.  
Store away from reducing agents.
- o **Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.

## 8 Exposure controls and personal protection

- o **Additional information about design of technical systems:**  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

### Components with limit values that require monitoring at the workplace:

Manganese, elemental & inorganic compounds (as Mn)

	mg/m3 ACGIH TLV	0.2 Belgium TWA
1; 3-STEL (fume) Denmark TWA		2.5; 1 (fume)
Finland TWA	2.5; 1 (fume) France TWA	1 (fume)
Germany MAK	0.5 (inhalable fraction of the aerosol) Ireland	
TWA	5; 1-STEL (fume) Netherlands TWA	1; 3-STEL Sweden
TWA	2.5 Switzerland TWA	1 (fume); 5 United Kingdom
TWA	5 USA PEL	5-Ceiling

- o **Additional information:** No data
- o **Personal protective equipment**
- o **General protective and hygienic measures**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- o **Breathing equipment:**  
Use suitable respirator when high concentrations are present.
- o **Protection of hands:** Impervious gloves
- o **Eye protection:**  
Safety glasses  
Tightly sealed goggles  
Full face protection
- o **Body protection:** Protective work clothing.

## 9 Physical and chemical properties:

- o **Form:** Solution
- o **Color:** Pink
- o **Odor:** Acidic

o

Value/Range Unit Method

- o **Change in condition**

o <b>Melting point/Melting range:</b>	Not determined	
o <b>Boiling point/Boiling range:</b>	100 ° C	(approx)
o <b>Sublimation temperature / start:</b>	Not determined	
o <b>Flash point:</b>	Not applicable	
o <b>Flammability (solid, gaseous)</b>	Contact with combustible material may cause fire.	
o <b>Ignition temperature:</b>	Not determined	
o <b>Decomposition temperature:</b>	Not determined	
o <b>Explosion limits:</b>		
o <b>Lower:</b>	Not determined	
o <b>Upper:</b>	Not determined	
o <b>Vapor pressure:</b>	Not determined	
o <b>Density:</b>	at 20 ° C	1.24-1.27 g/cm3
o <b>Solubility in / Miscibility with</b>		
o <b>Water:</b>	Soluble	

#### • **10 Stability and reactivity**

- o **Thermal decomposition / conditions to be avoided:**  
Decomposition will not occur if used and stored according to specifications.
- o **Materials to be avoided:**  
Reducing agents, easily oxidized materials  
Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.
- o **Dangerous reactions**  
Reacts with reducing agents  
Reacts with flammable substances
- o **Dangerous products of decomposition:**  
Nitrogen oxides  
Metal oxide fume

#### • **11 Toxicological information**

- o **Acute toxicity:**
- o **Primary irritant effect:**
- o **on the skin:** Irritant to skin and mucous membranes.
- o **on the eye:** Irritating effect.
- o **Sensitization:** No sensitizing effects known.
- o **Subacute to chronic toxicity:**  
Chronic exposure to manganese may cause impairment to the central nervous system. Symptoms include sluggishness, sleepiness, muscle weakness, loss of facial muscle control, edema, emotional disturbances, spastic gait and falling. Chronic manganese poisoning may develop after as little as three months of heavy exposure but

usually cases develop after one to three years of exposure, Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse.

o **Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

• **12 Ecological information:**

o **General notes:**

Do not allow material to be released to the environment without proper governmental permits.

• **13 Disposal considerations**

o **Product:**

o **Recommendation**

Consult state, local or national regulations for proper disposal.

o **Uncleaned packagings:**

o **Recommendation:**

Disposal must be made according to official regulations.

• **14 Transport information**

o **DOT regulations:**

o **Hazard class:** 5.1

o **Identification number:** UN3218

o **Packing group:** III

o **Proper shipping name (technical name):**

n.o.s., Nitrates, inorganic, aqueous solution,  
manganese (II) nitrate

o **Land transport ADR/RID (cross-border)**

o **ADR/RID class:** 5.1 Substances with an igniting effect  
(oxidizing).

o **Item:** 22c

o **Danger code (Kemler):** 50

o **UN-Number:** 3218

o **Description of goods:** Nitrates, inorganic, aqueous solution,  
n.o.s.,

manganese (II) nitrate

o **Maritime transport IMDG:**

o **IMDG Class:** 5.1

o **UN Number:** 3218

o **Packaging group:** III

o **Proper shipping name:** Nitrates, inorganic, aqueous solution,  
n.o.s.,



manganese (II) nitrate

◦ **Air transport ICAO-TI and IATA-DGR:**

◦ **ICAO/IATA Class:** 5.1

◦ **UN/ID Number:** 3218

◦ **Packaging group:** III

◦ **Proper shipping name:** Nitrates, inorganic, aqueous solution,  
n.o.s.,

manganese (II) nitrate

• **15 Regulations**

◦ **Product related hazard informations:**

◦ **Hazard symbols:**

Xn Harmful O Oxidizing

◦ **Risk phrases:**

8 Contact with combustible material may cause fire.

36/37/38 Irritating to eyes, respiratory system and skin.

40 Possible risks of irreversible effects.

◦ **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty  
of water and seek medical advice.

36/37 Wear suitable protective clothing and gloves.

◦ **National regulations**

All components of this product are listed in the U.S. Environmental  
Protection Agency Toxic Substances Control Act Chemical Substance  
Inventory.

◦ **Information about limitation of use:**

For use only by technically qualified individuals.

This product contains manganese and is subject to the reporting  
requirements of section 313 of the Emergency Planning and Community  
Right to Know Act of 1986 and 40CFR372.

• **16 Other information:**

Employers should use this information only as a supplement to other  
information gathered by them, and should make independent judgement  
of suitability of this information to ensure proper use and protect  
the health and safety of employees. This information is furnished  
without warranty, and any use of the product not in conformance with  
this Material Safety Data Sheet, or in combination with any other  
product or process, is the responsibility of the user.

◦ **Department issuing MSDS:** Health, Safety and Environmental Department.

◦ **Contact:** Darrell R. Sanders