

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/11/2009

Reviewed on 05/11/2009

1 Identification of substance:

Product details:

Product name: Manganese (II) nitrate, 50% solution

Stock number: 33340

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

Information Department: Health, Safety and Environmental Department

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:

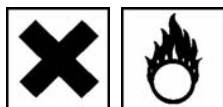
Chemical characterization:

Description: (CAS#)

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

3 Hazards identification

Hazard description:



Xn Harmful
O Oxidizing

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 Limited evidence of a carcinogenic effect.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	0
REACTIVITY	1

Health (acute effects) = 1
Flammability = 0
Reactivity = 1

GHS label elements



Danger

2.13/2 - May intensify fire; oxidizer.



Warning

3.6/2 - Suspected of causing cancer.



Warning

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

3.8/3 - May cause respiratory irritation.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep/Store away from clothing/combustible materials.

Take any precaution to avoid mixing with combustibles.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.

Response:

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash before reuse.

In case of fire: Use for extinction: CO₂, powder or water spray.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

After inhalation

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

Seek immediate medical advice.

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 (NO_x)

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.

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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

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from flammable substances.

Store away from reducing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

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/m ³
ACGIH TLV	0.2
Austria MAK	5
Belgium TWA	1; 3-STEEL (fume)
Denmark TWA	2.5
Finland TWA	0.5
France VME	1 (fume)
Germany MAK	0.55
Japan OEL	0.3 (respirable dust)
Korea TLV	0.2
Netherlands MAC-TGG	1; 3-MAC-K
Norway TWA	1
Russia	0.2-STEEL (fume)
Sweden NGV	1; 2.5-TGV (resp. dust)
	2.5; 5-TGV (total dust)
Switzerland MAK-W	5
	1 (fume)
United Kingdom TWA	5
	1; 3-STEEL (fume)
USA PEL	5-Ceiling (fume)

Additional information: No data

Personal protective equipment**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.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Solution
Color:	Pink
Odor:	Acidic

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	100°C (212°F) (approx)
Sublimation temperature / start:	Not determined

Flash point: Not determined

Flammability (solid, gaseous) Contact with combustible material may cause fire.

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Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	1.24-1.27 g/cm ³

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

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.

Dangerous reactions

Reacts with reducing agents

Reacts with flammable substances

Dangerous products of decomposition:

Nitrogen oxides

Metal oxide fume

11 Toxicological information

Acute toxicity:
Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

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.

Additional toxicological information:

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

12 Ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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

13 Disposal considerations

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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14 Transport information

DOT regulations:



Hazard class: 5.1
Identification number: UN3218
Packing group: III
Proper shipping name (technical name): NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.
Label: 5.1

Land transport ADR/RID (cross-border)



ADR/RID class: 5.1 (01) Oxidizing substances
Danger code (Kemler): 50
UN-Number: 3218
Packaging group: III
Description of goods: 3218 NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (manganese (II) nitrate)

Maritime transport IMDG:



IMDG Class: 5.1
UN Number: 3218
Label: 5.1
Packaging group: III
Proper shipping name: NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 5.1
UN/ID Number: 3218
Label: 5.1
Packaging group: III
Proper shipping name: NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.

UN "Model Regulation": UN3218, NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S., 5.1, III

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 Limited evidence of a carcinogenic effect.

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.

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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:** Zachariah Holt**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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