

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/27/2007

Reviewed on 03/27/2007

1 Identification of substance:**Product details:****Product name:** Manganese(II) sulfate tetrahydrate**Stock number:**

B22081

L13670

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) sulfate tetrahydrate (CAS# 10101-68-5): 100%

Identification number(s):**EINECS Number:** 232-089-9**3 Hazards identification****Hazard description:**

Xn Harmful

N Dangerous for the environment

Information pertaining to particular dangers for man and environment

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

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

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.

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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.**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:

Metal oxide fume

Sulfur oxides (SO_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.

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.

Prevent formation of dust.

Information about protection against explosions and fires:

The product is not flammable

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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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/m³

ACGIH TLV	0.2
Austria MAK	5
Belgium TWA	5
Denmark TWA	2.5
Finland TWA	0.5
Hungary TWA	0.3; 0.6-STEL
Germany MAK	0.55
Japan OEL	0.3 (respirable dust)
Korea TLV	0.2
Netherlands MAC-TGG	1; 3-MAC-K
Norway TWA	2.5
Poland TWA	0.3; 5-MAC
Russia	0.2-STEL (fume)
Sweden NGV	1; 2.5-TGV (respirable dust) 2.5; 5-TGV (total dust)
United Kingdom TWA	5
USA PEL	5-Ceiling

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.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline
Color:	Pink
Odor:	Not determined

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined

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Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined

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: Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

Metal oxide fume

Sulfur oxides (SO_x)

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.

Additional toxicological information:

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

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

12 Ecological information:**Ecotoxicological effects:**

Remark: Toxic for fish

General notes:

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

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Do not allow material to be released to the environment without proper governmental permits.
Toxic for aquatic organisms

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.

14 Transport information

DOT regulations:



Hazard class:	9
Identification number:	UN3077
Packing group:	III
Proper shipping name (technical name):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese(II) sulfate tetrahydrate)
Label	9

Land transport ADR/RID (cross-border)



ADR/RID class:	9 (M7) Miscellaneous dangerous substances and articles
Danger code (Kemler):	90
UN-Number:	3077
Packaging group:	III
Description of goods:	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese(II) sulfate tetrahydrate)

Maritime transport IMDG:



IMDG Class:	9
UN Number:	3077
Label	9
Packaging group:	III

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Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
SOLID, N.O.S. (Manganese(II) sulfate
tetrahydrate)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 9
UN/ID Number: 3077
Label 9
Packaging group: III
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
SOLID, N.O.S. (Manganese(II) sulfate
tetrahydrate)

15 Regulations**Product related hazard informations:****Hazard symbols:**

Xn Harmful

N Dangerous for the environment

Risk phrases:48/20/22 Harmful: danger of serious damage to health by prolonged
exposure through inhalation and if swallowed.51/53 Toxic to aquatic organisms, may cause long-term adverse effects
in the aquatic environment**Safety phrases:**

22 Do not breathe dust.

61 Avoid release to the environment. Refer to special instructions/Safety
data sheets**National regulations**All components of this product are listed in the U.S. Environmental
Protection Agency Toxic Substances Control Act Chemical substance
Inventory.All components of this product are listed on the Canadian Domestic
Substances List (DSL).**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:** Paul V. Connolly