

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Revision: 14.07.2010

Printing date 14.07.2010

**1 Identification of substance****Product details**

Trade name

**Manganese (III) oxide**

Stock number:

87791

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com  
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification**

Hazard designation:



Xn Harmful

Information pertaining to particular dangers for man and environment

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
R 36/37/38 Irritating to eyes, respiratory system and skin.

GHS label elements

**Warning**H302 - Harmful if swallowed.  
H312 - Harmful in contact with skin.  
H332 - Harmful if inhaled.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.

Prevention:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

Response:

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**3 Composition/information on ingredients**

Chemical characterization:

Designation: (CAS#)

Manganese (III) oxide (CAS# 1317-34-6), 100%

Identification number(s):

EINECS Number:

215-264-4

**4 First aid measures**

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.  
Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.  
Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek immediate medical advice.

**5 Fire fighting measures**

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

Protective equipment:

Wear self-contained breathing apparatus.  
Wear full protective 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 of contaminated material as waste according to item 13.  
Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.**7 Handling and storage**

Handling

Information for safe handling:

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

The product is not flammable

Storage

Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

No information known.

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 critical values that require monitoring at the workplace:

Manganese, elemental & inorganic compounds (as Mn)  
mg/m<sup>3</sup>

ACGIH TLV 0.2

Austria MAK 5

Belgium TWA 1; 3-STEL (fume)

Denmark TWA 2.5

Finland TWA 0.5

France VME 1 (fume)

(Contd. on page 2)  
GB

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(Contd. of page 1)

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-STEL (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-STEL (fume)  
 USA PEL 5-Ceiling (fume)  
 No data

**Additional information:****Personal protective equipment****General protective and hygienic measures****Breathing equipment:****Eye protection:****Body protection:**

The usual precautionary measures should be adhered to in handling the chemicals.  
 Keep away from foodstuffs, beverages and food.  
 Instantly remove any soiled and impregnated garments.  
 Wash hands during breaks and at the end of the work.  
 Avoid contact with the eyes and skin.  
 Use breathing protection with high concentrations.  
 Safety glasses  
 Face protection  
 Protective work clothing.

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

**Form:** Powder  
**Colour:** Black  
**Smell:** Odourless

**Change in condition**  
**Melting point/Melting range:** 1080°C ((dec))  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

**Danger of explosion:** Product is not explosive.

**Critical values for explosion:**  
**Lower:** Not determined  
**Upper:** Not determined

**Steam pressure:** Not determined

**Density at 20°C** 4.5 g/cm<sup>3</sup>

**Solubility in / Miscibility with Water:** Insoluble

**10 Stability and reactivity**

**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.  
**Materials to be avoided:** No information known.  
**Dangerous reactions:** No dangerous reactions known  
**Dangerous products of decomposition:** Metal oxide

**11 Toxicological information**

**Acute toxicity:**  
**Primary irritant effect:**  
**on the skin:** Irritant for skin and mucous membranes.  
**on the eye:** Irritant effect.  
**Sensitization:** No sensitizing effect known.  
**Additional toxicological information:** Danger by skin resorption.  
 To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
 No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information:**

**Additional ecological information:**  
**General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water.  
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies 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 for proper disposal.  
 Hand over to disposers of hazardous waste.  
 Must be specially treated under adherence to official regulations.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

**Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**  
**ADR/RID-GGVS/E Class:** None  
**Maritime transport IMDG/GGVSea:**  
**IMDG/GGVSea Class:** None  
**Marine pollutant:** No  
**Air transport ICAO-TI and IATA-DGR:**  
**ICAO/IATA Class:** None

(Contd. on page 3)  
GB

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(Contd. of page 2)

**Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulatory information****Designation according to EC guidelines:****Code letter and hazard designation of product:**

Xn Harmful

**Risk phrases:**20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
36/37/38 Irritating to eyes, respiratory system and skin.**Safety phrases:**26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
36 Wear suitable protective clothing.**National regulations****Information about limitation of use:**Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.**Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

**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 data specification sheet:** 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

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

EINECS: European Inventory of Existing Commercial Chemical Substances

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

GB