

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

Revision: 13.07.2010

Printing date 13.07.2010

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

**Trade name** Manganese (III) fluoride  
**Stock number:** 13069  
**Manufacturer/Supplier:** Alfa Aesar GmbH & Co.KG  
 Benzstrasse 3  
 D-76185 Karlsruhe / Germany

E-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****GHS label elements****Prevention:****Response:****Storage:****Disposal:**

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

**Warning**

H302 - Harmful if swallowed.  
 H332 - Harmful if inhaled.  
 H315 - Causes skin irritation.  
 H319 - Causes serious eye irritation.  
 H335 - May cause respiratory irritation.  
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 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).  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**3 Composition/information on ingredients****Chemical characterization:****Designation: (CAS#)****Identification number(s):****EINECS Number:**

Manganese (III) fluoride, anhydrous (CAS# 7783-53-1), 100%  
 232-006-6

**4 First aid measures****After inhalation****After skin contact****After eye contact****After swallowing**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
 Seek immediate medical advice.  
 Instantly wash with water and soap and rinse thoroughly.  
 Seek immediate medical advice.  
 Rub in Ca-gluconate solution or Ca-gluconate gel immediately.  
 Rinse opened eye for several minutes under running water. Then consult doctor.  
 Seek immediate medical advice.

**5 Fire fighting measures****Suitable extinguishing agents****Special hazards caused by the material, its products of combustion or flue gases:****Protective equipment:**

Use fire fighting measures that suit the environment.  
 Can be released in case of fire:  
 Hydrogen fluoride (HF)  
 Toxic metal oxide smoke  
 Wear self-contained breathing apparatus.  
 Wear full protective suit.

**6 Accidental release measures****Person-related safety precautions:****Measures for environmental protection:****Measures for cleaning/collecting:****Additional information:**

Wear protective equipment. Keep unprotected persons away.  
 Ensure adequate ventilation  
 Do not allow material to be released to the environment without proper governmental permits.  
 Dispose of contaminated material as waste according to item 13.  
 Ensure adequate ventilation.  
 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:****Information about protection against explosions and fires:****Storage****Requirements to be met by storerooms and containers:****Information about storage in one common storage facility:****Further information about storage conditions:**

Keep containers tightly sealed.  
 Store in cool, dry place in tightly closed containers.  
 Ensure good ventilation/exhaustion at the workplace.  
 The product is not flammable  
 No special requirements.  
 Do not store together with acids.  
 Store away from water.  
 Protect from humidity and keep away from water.  
 This product is hygroscopic.  
 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:****Components with critical values that require monitoring at the workplace:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Fluorides (as F)

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	mg/m <sup>3</sup>
ACGIH TLV	2.5
Austria MAK	2.5
Belgium TWA	2.5
Finland TWA	2.5
France TWA	2.5
Germany MAK	2.5
Hungary TWA	1; 2-STEL
Netherlands MAC-K	3.5
Norway TWA	0.6
Poland TWA	1; 3-STEL
Sweden NGV	2
Switzerland MAK-W	1.5; 3-KZG-W
United Kingdom TWA	2.5
Russia TWA	2
Denmark TWA	2.5
USA PEL	2.5

Manganese, elemental &amp; 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)
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)
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**

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.

**Breathing equipment:****Eye protection:**

Safety glasses

**Body protection:**

Face protection

Protective work clothing.

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

<b>Form:</b>	Crystalline powder
<b>Colour:</b>	Violet
	Red
<b>Smell:</b>	Not determined

**Change in condition**

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	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:**

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined

**Steam pressure:** Not determined**Density at 20°C** 3.54 g/cm<sup>3</sup>**Solubility in / Miscibility with Water:** Decomposes**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**Materials to be avoided:**Acids  
Water/moisture**Dangerous reactions:**

No dangerous reactions known

**Dangerous products of decomposition:**Hydrogen fluoride (HF)  
Toxic metal oxide smoke**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:**

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

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

<b>ADR/RID-GGVS/E Class:</b>	6.1 (T5) Toxic substances.
<b>Kemler Number:</b>	60
<b>UN-Number:</b>	3288
<b>Packaging group:</b>	III
<b>Label</b>	6.1
<b>Designation of goods:</b>	3288 TOXIC SOLID, INORGANIC, N.O.S. (manganese (III) fluoride)
<b>Limited quantities (LQ)</b>	LQ9
<b>Transport category</b>	2
<b>Tunnel restriction code</b>	E

**Maritime transport IMDG/GGVSea:**

<b>IMDG/GGVSea Class:</b>	6.1
<b>UN Number:</b>	3288
<b>Label</b>	6.1
<b>Packaging group:</b>	III
<b>Marine pollutant:</b>	No
<b>Correct technical name:</b>	TOXIC SOLID, INORGANIC, N.O.S. (manganese (III) fluoride)

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

<b>ICAO/IATA Class:</b>	6.1
<b>UN/ID Number:</b>	3288
<b>Label</b>	6.1
<b>Packaging group:</b>	III
<b>Correct technical name:</b>	TOXIC SOLID, INORGANIC, N.O.S. (manganese (III) fluoride)

**UN "Model Regulation":**

UN3288, TOXIC SOLID, INORGANIC, N.O.S., 6.1, III

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


Xn Harmful

**Risk phrases:**
 20/22 Harmful by inhalation and if swallowed.  
 36/37/38 Irritating to eyes, respiratory system and skin.
**Safety phrases:**
 9 Keep container in a well-ventilated place.  
 17 Keep away from combustible material.  
 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)