

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

***Iron (III) chloride on silica, Catalyst***

Stock number:

30480

**1.2 Relevant identified uses of the substance or mixture and uses advised against.**

Identified use:

SU24 Scientific research and development

**1.3 Details of the supplier of the safety data sheet**

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
A Johnson Matthey Company  
Zeppelinstr. 7b  
76185 Karlsruhe / Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300  
Email: tech@alfa.com  
www.alfa.com

Informing department:

Product safety Tel + +049 (0) 7275 988687-0

**1.4 Emergency telephone number:**

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Xn; Harmful

R20: Harmful by inhalation.

 Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

**Information concerning particular hazards for human and environment:**

Not applicable

**Other hazards that do not result in classification**

No information known.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008**

Hazard pictograms

Signal word

Hazard statements

The substance is classified and labelled according to the CLP regulation.

GHS07

Warning

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.

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

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

P321 Specific treatment (see on this label).

P405 Store locked up.

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

**Precautionary statements****2.3 Other hazards**

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

CAS# Designation:

Iron (III) chloride on silica, Catalyst

**SECTION 4: First aid measures****4.1 Description of 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 medical treatment.

**4.2 Most important symptoms and effects, both acute and delayed**

Coughing

Breathing difficulty

**4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

**5.2 Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

**5.3 Advice for firefighters**

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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<b>6.2 Environmental precautions:</b>	Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach sewage system or water bodies. Do not allow to enter the ground/soil.
<b>6.3 Methods and material for containment and cleaning up:</b>	Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation.
<b>Prevention of secondary hazards:</b>	No special measures required.
<b>6.4 Reference to other sections</b>	See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

**SECTION 7: Handling and storage**

**7.1 Precautions 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

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage Requirements to be met by storerooms and containers:** No special requirements.

**Information about storage in one common storage facility:** Store away from halogens.  
Store away from oxidizing agents.

**Further information about storage conditions:** Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.

**7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/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.

**8.1 Control parameters Components with critical values that require monitoring at the workplace:**

Silica, amorphous-diatomaceous earth	
ACGIH TLV	10 (inhalable particulate)
Germany TWA	3 (respirable particulate)
Ireland TWA	4 (inhalable fraction of the aerosol)
United Kingdom TWA	1.5
USA PEL	1.2 (respirable dust)
	20 mppcf
Silica, amorphous	
Ireland TWA	3 (respirable); 6 (total inhalable)
United Kingdom TWA	2.4 (respirable); 6 (total inhalable)
Silica, amorphous-fused	
ACGIH TLV	0.1 (respirable particulate)
Finland TWA	5
Germany TWA	0.3 (respirable fraction of the aerosol)
Ireland TWA	0.1 (respirable)
United Kingdom TWA	0.3 (respirable dust)
Silica, amorphous-fume	
ACGIH TLV	2 (respirable particulate)
Germany TWA	0.3 (respirable fraction of the aerosol)
Silica, amorphous-precipitated and gel	
ACGIH TLV	10 (inhalable particulate)
Germany TWA	4 (inhalable fraction of the aerosol)
USA PEL	20 mppcf
Silica, crystalline-quartz	
ACGIH TLV	0.1
Austria MAK	0.15
Belgium TWA	0.1
Finland TWA	0.2
France VME	10/(X+2)
Germany MAK	0.15
Korea TLV	0.1
Netherlands MAC-TGG	0.075
Norway TWA	0.3 (total dust)
	0.1 (resp. dust)
Russia	14-STEL
Sweden NGV	0.1 (resp. dust)
Switzerland MAK-W	0.15
United Kingdom TWA	0.3 (respirable)
USA PEL	10/(% resp. SiO <sub>2</sub> +2)
	30/(% SiO <sub>2</sub> +2) (total sust)
Silica, crystalline-tridymite and cristobalite	mg/m <sup>3</sup>
ACGIH TLV	0.05 (respirable particulate)
Belgium TWA	0.05
Denmark TWA	0.05
Finland TWA	0.1
France TWA	10
Germany TWA	0.15 (respirable fraction of the aerosol)
Ireland TWA	0.4 (respirable)
Netherlands TWA	0.075 (respirable)
Sweden TWA	0.05

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Switzerland TWA 0.15  
USA PEL 0.5 (value calculated for quartz-respirable dust)

Silica, crystalline-tripoli  
mg/m<sup>3</sup>  
ACGIH TLV 0.1 (of contained respirable quartz)  
Belgium TWA 0.1  
Germany TWA 0.15 (respirable fraction of the aerosol)  
Ireland TWA 0.4 (respirable)  
USA PEL See quartz

Iron salts, soluble (as Fe)  
mg/m<sup>3</sup>  
ACGIH TLV 1  
Finland TWA 1  
Korea TLV 1  
Norway TWA 1  
Switzerland MAK-W 1  
United Kingdom LTEL 1; 2-STEL  
No data

**Additional information:****8.2 Exposure controls****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.

Maintain an ergonomically appropriate working environment.

Use breathing protection with high concentrations.

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

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Impervious gloves

Not determined

Safety glasses

Face protection

Protective work clothing.

**Breathing equipment:****Protection of hands:****Material of gloves****Penetration time of glove material****Eye protection:****Body protection:****SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form: Powder  
Colour: Grey  
Smell: Odourless  
Odour threshold: Not determined.

pH-value: Not applicable.

**Change in condition**

Melting point/Melting range: Not determined  
Boiling point/Boiling range: Not determined  
Sublimation temperature / start: Not determined

Flash point: Not applicable  
Inflammability (solid, gaseous): Not determined.  
Ignition temperature: Not determined  
Decomposition temperature: Not determined  
Self-inflammability: Not determined.

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

**Critical values for explosion:**

Lower: Not determined  
Upper: Not determined  
Steam pressure: Not applicable.  
Density: Not determined  
Relative density: Not determined.  
Vapour density: Not applicable.  
Evaporation rate: Not applicable.

**Solubility in / Miscibility with**

Water: Partly soluble  
Partition coefficient (n-octanol/water): Not determined.  
Viscosity:  
dynamic: Not applicable.  
kinematic: Not applicable.

**9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity****10.1 Reactivity**

No information known.

**10.2 Chemical stability**

Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**10.3 Possibility of hazardous reactions**

Reacts violently with interhalogens.

**10.5 Incompatible materials:**

Hydrogen fluoride (HF)  
Interhalogens  
Halogens  
Oxidizing agents

**10.6 Hazardous decomposition products:**

Alkali metals  
Hydrogen chloride (HCl)  
Metal oxide

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity:**

Harmful if inhaled.

**LD/LC50 values that are relevant for classification:**

No data

**Skin irritation or corrosion:**

Causes skin irritation.

**Eye irritation or corrosion:**

Causes serious eye irritation.

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<b>Sensitization:</b>	No sensitizing effect known.
<b>Germ cell mutagenicity:</b>	No effects known.
<b>Carcinogenicity:</b>	IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity. NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals. The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.
<b>Reproductive toxicity:</b>	No effects known.
<b>Specific target organ system toxicity - repeated exposure:</b>	No effects known.
<b>Specific target organ system toxicity - single exposure:</b>	May cause respiratory irritation.
<b>Aspiration hazard:</b>	No effects known.
<b>Other information (about experimental toxicology):</b>	Mutagenic effects have been observed on tests with laboratory animals. Reproductive effects have been observed on tests with laboratory animals. Tumorigenic effects have been observed on tests with laboratory animals.
<b>Additional toxicological information:</b>	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**SECTION 12: Ecological information**

<b>12.1 Toxicity</b>	
<b>Aquatic toxicity:</b>	No further relevant information available.
<b>12.2 Persistence and degradability</b>	No further relevant information available.
<b>12.3 Bioaccumulative potential</b>	No further relevant information available.
<b>12.4 Mobility in soil</b>	No further relevant information available.
<b>Additional ecological information:</b>	
<b>General notes:</b>	Do not allow material to be released to the environment without proper governmental permits. 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. Avoid transfer into the environment.
<b>12.5 Results of PBT and vPvB assessment</b>	
<b>PBT:</b>	Not applicable.
<b>vPvB:</b>	Not applicable.
<b>12.6 Other adverse effects</b>	No further relevant information available.

**SECTION 13: Disposal considerations**

<b>13.1 Waste treatment methods</b>	
<b>Recommendation</b>	Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.
<b>Uncleaned packagings:</b>	
<b>Recommendation:</b>	Disposal must be made according to official regulations.

**SECTION 14: Transport information**

<b>UN-Number</b>	
<b>ADR, IMDG, IATA</b>	None
<b>14.2 UN proper shipping name</b>	
<b>ADR, IMDG, IATA</b>	None
<b>14.3 Transport hazard class(es)</b>	
<b>ADR, IMDG, IATA</b>	
<b>Class</b>	None
<b>Packing group</b>	
<b>ADR, IMDG, IATA</b>	None
<b>14.5 Environmental hazards:</b>	Not applicable.
<b>14.6 Special precautions for user</b>	Not applicable.
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	Not dangerous according to the above specifications.

**SECTION 15: Regulatory information**

<b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>Australian Inventory of Chemical Substances</b>	Substance is not listed.
<b>Standard for the Uniform Scheduling of Drugs and Poisons</b>	Substance is not listed.
<b>National regulations</b>	
<b>Information about limitation of use:</b>	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
<b>Water hazard class:</b>	Water hazard class 1 (Self-assessment): slightly hazardous for water.
<b>Other regulations, limitations and prohibitive regulations</b>	
<b>ELINCS (European List of Notified Chemical Substances)</b>	Substance is not listed.
<b>Substances of very high concern (SVHC) according to REACH, Article 57</b>	Substance is not listed.
<b>REACH - Pre-registered substances</b>	Substance is not listed.
<b>15.2 Chemical safety assessment:</b>	A Chemical Safety Assessment has not been carried out.

**SECTION 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.

<b>Department issuing data specification sheet:</b>	Health, Safety and Environmental Department.
<b>Abbreviations and acronyms:</b>	RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) 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) ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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Printing date 01.07.2013

Revision: 01.04.2009

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CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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