

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

Revision: 22.05.2009


Printing date 22.05.2009

**1 Identification of substance****Product details****Trade name****Silica gel****Stock number:**

L14004

**Manufacturer/Supplier:**Alfa Aesar GmbH & Co.KG  
Zeppelinstrasse 7  
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 Harmful by inhalation.  
R 37 Irritating to respiratory system.**GHS label elements**
 **Warning**

3.1/4 - Harmful if inhaled.

3.8/3 - May cause respiratory irritation.

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

Use only outdoors or in a well-ventilated area.

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

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

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

Store locked up.

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

**Prevention:****Response:****Storage:****Disposal:****3 Composition/information on ingredients****Chemical characterization:****Designation: (CAS#)**

Silicon(IV) oxide (CAS# 7631-86-9): 100%

**Identification number(s):**

231-545-4

**EINECS Number:****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.

**After swallowing**

Rinse opened eye for several minutes under running water. Then consult doctor.

**Information for doctor**

Seek immediate medical advice.

**The following symptoms may occur:**Coughing  
Breathing difficulty**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.

**Measures for environmental protection:**

Ensure adequate ventilation

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:**Do not store together with acids.  
Store away from halogens.  
Store away from oxidizing agents.**Further information about storage conditions:**Protect from humidity and keep away from water.  
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:**Silica, crystalline-quartz  
mg/m<sup>3</sup>

ACGIH TLV 0.1

Austria MAK 0.15

Belgium TWA 0.1

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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 dust)

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  
 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

Silica, amorphous-diatomaceous earth mg/m<sup>3</sup>  
 ACGIH TLV 10 (inhalable particulate)  
 3 (respirable particulate)  
 Germany TWA 4 (inhalable fraction of the aerosol)  
 Ireland TWA 1.5  
 United Kingdom TWA 1.2 (respirable dust)  
 USA PEL 20 mppcf

Silica, amorphous mg/m<sup>3</sup>  
 Ireland TWA 3 (respirable); 6 (total inhalable)  
 United Kingdom TWA 2.4 (respirable); 6 (total inhalable)

Silica, amorphous-fused mg/m<sup>3</sup>  
 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 mg/m<sup>3</sup>  
 ACGIH TLV 2 (respirable particulate)  
 Germany TWA 0.3 (respirable fraction of the aerosol)

Silica, amorphous-precipitated and gel mg/m<sup>3</sup>  
 ACGIH TLV 10 (inhalable particulate)  
 Germany TWA 4 (inhalable fraction of the aerosol)  
 USA PEL 20 mppcf  
 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.  
 Use breathing protection with high concentrations.  
 Safety glasses  
 Protective work clothing.

**Breathing equipment:****Eye protection:****Body protection:****9 Physical and chemical properties:****General Information**

**Form:** Powder  
**Colour:** White  
**Smell:** Odourless

**Change in condition**

**Melting point/Melting range:** 1610-1728°C  
**Boiling point/Boiling range:** 2230°C  
**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

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**Steam pressure:** Not determined

**Density at 20°C** 2.17-2.66 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:** Hydrogen fluoride (HF)

Interhalogens

Halogens

Oxidizing agents

Reacts violently with interhalogens.

**Dangerous reactions:** Reacts violently with interhalogens.

**Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

**Acute toxicity:**

**Primary irritant effect:**

**on the skin:**

**on the eye:**

**Sensitization:**

**Other information (about experimental toxicology):**

Irritant for skin and mucous membranes.

Irritant effect.

No sensitizing effect known.

**Additional toxicological information:**

Tumorigenic effects have been observed on tests with laboratory animals.

Reproductive effects have been observed on tests with laboratory animals.

Carcinogenic effects have been observed on tests with laboratory animals.

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

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

**12 Ecological information:**

**General notes:**

Generally not hazardous for water.

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

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


**ICAO/IATA Class:** None

**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 Harmful by inhalation.

37 Irritating to respiratory system.

**Safety phrases:**

9 Keep container in a well-ventilated place.

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:**

Generally not 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)