

# Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 27.10.2006

Printing date 01.07.2013

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

Trade name

**Barium silicon oxide**

Stock number:

15122

Index number:

056-002-00-7

**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 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

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

Xn; Harmful

R20/22; Harmful by inhalation and if swallowed.

Xi; Irritant

R37; Irritating to respiratory system.

**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

Precautionary statements

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

GHS07

Warning

H302 Harmful if swallowed.

H332 Harmful if inhaled.

P261

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

P264

Wash thoroughly after handling.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P312

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

P501

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

**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:

Barium silicon oxide

Identification number(s):

056-002-00-7

Index number:

**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.

After swallowing

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

4.2 Most important symptoms and effects, both acute and delayed

Seek medical treatment.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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

**6.2 Environmental precautions:**

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.

(Contd. on page 2)  
DE/E

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Revision: 27.10.2006

Printing date 01.07.2013

Trade name **Barium silicon oxide**

(Contd. of page 1)

**6.3 Methods and material for containment and cleaning up:****Prevention of secondary hazards:**  
**6.4 Reference to other sections**

Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
No special measures required.  
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.

**Further information about storage conditions:**

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
No further relevant information available.

**7.3 Specific end use(s)****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  
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

Silica, crystalline-quartz  
mg/m<sup>3</sup>  
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  
Switzerland TWA 0.15  
USA PEL 0.5 (value calculated for quartz-respirable dust)

Silica, crystalline-tripoli

(Contd. on page 3)  
DE/E

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 01.07.2013

Revision: 27.10.2006

Trade name **Barium silicon oxide**

(Contd. of page 2)

	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
Barium, and soluble compounds, as Ba	
	mg/m <sup>3</sup>
ACGIH TLV	0.5; Not classified as a human carcinogen
Austria MAK	0.5
Belgium TWA	0.5
Denmark TWA	0.5
Finland TWA	0.5
Germany MAK	0.5 (total dust)
Hungary	0.5-STEEL
Ireland TWA	0.5
Korea TLV	0.5
Netherlands MAC-TGG	0.5
Norway TWA	0.5
Poland TWA	0.5; 1.5-STEEL
Sweden TWA	0.5
Switzerland MAK-W	0.5
United Kingdom LTEL	0.5
USA PEL	0.5

**Barium silicon oxide (100,0%)**

MAK (Germany)	0,5E mg/m <sup>3</sup> als Ba berechnet
PEL (USA)	0,5 mg/m <sup>3</sup> as Ba
REL (USA)	0,5 mg/m <sup>3</sup> as Ba
TLV (USA)	0,5 mg/m <sup>3</sup> as Ba

**Additional information:** No data**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.

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.

**Breathing equipment:****Protection of hands:****Material of gloves****Penetration time of glove material****Eye protection:****Body protection:**

Impervious gloves

Not determined

Safety glasses

Protective work clothing.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:****Form:** Powder**Colour:** White**Smell:** Not determined**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:** Insoluble**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****10.2 Chemical stability****Thermal decomposition / conditions to be avoided:**

No information known.

Stable under recommended storage conditions.

No decomposition if used and stored according to specifications.

**10.3 Possibility of hazardous reactions**

No dangerous reactions known

**10.5 Incompatible materials:**

Halogens

Interhalogens

(Contd. on page 4)  
DE/E

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Revision: 27.10.2006

Printing date 01.07.2013

Trade name **Barium silicon oxide**

**10.6 Hazardous decomposition products:** Barium oxide  
Silicon oxide

(Contd. of page 3)

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

Harmful if inhaled.  
Harmful if swallowed.

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

No data

**Skin irritation or corrosion:**

Irritant for skin and mucous membranes.

**Eye irritation or corrosion:**

Irritant effect.

**Sensitization:**

No sensitizing effect known.

**Germ cell mutagenicity:**

No effects known.

**Carcinogenicity:**

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.  
ACGIH A2: Suspected human carcinogen: Agent is carcinogenic in experimental animals at dose levels, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.  
No effects known.

**Reproductive toxicity:**

No effects known.

**Specific target organ system toxicity - repeated exposure:**

No effects known.

**Specific target organ system toxicity - single exposure:**

May cause respiratory irritation.

**Aspiration hazard:**

No effects known.

**Additional toxicological information:**

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

**SECTION 12: Ecological information****12.1 Toxicity**

No further relevant information available.

**Aquatic toxicity:**

No further relevant information available.

**12.2 Persistence and degradability**

No further relevant information available.

**12.3 Bioaccumulative potential**

No further relevant information available.

**12.4 Mobility in soil**

No further relevant information available.

**Additional ecological information:**

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.

**12.5 Results of PBT and vPvB assessment**

Not applicable.

**PBT:**

Not applicable.

**vPvB:**

No further relevant information available.

**12.6 Other adverse effects****SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

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.

**Uncleaned packagings:**

Disposal must be made according to official regulations.

**SECTION 14: Transport information****UN-Number****ADR, IMDG, IATA**

UN1564

**14.2 UN proper shipping name****ADR****IMDG, IATA**

1564 BARIUM COMPOUND, N.O.S. (barium silicon oxide)  
BARIUM COMPOUND, N.O.S. (barium silicon oxide)

**14.3 Transport hazard class(es)****ADR****Class****Label****IMDG, IATA**

6.1 (T5) Toxic substances.  
6.1

**Class****Label**

6.1 Toxic substances.  
6.1

**Packing group****ADR, IMDG, IATA**

III

**14.5 Environmental hazards:**

Not applicable.

**14.6 Special precautions for user****Kemler Number:**

Warning: Toxic substances.  
60

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC****Code**

Not applicable.

**Transport/Additional information:****ADR****Excepted quantities (EQ):**

E1

**Limited quantities (LQ)**

5 kg

**Transport category**

2

**Tunnel restriction code**

E

**UN "Model Regulation":**

UN1564, BARIUM COMPOUND, N.O.S. (barium silicon oxide), 6.1, III

DE/E

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 01.07.2013

Revision: 27.10.2006

Trade name **Barium silicon oxide**

(Contd. of page 4)

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical**

Substance is not listed.

**Substances****Standard for the Uniform Scheduling of**

Substance is not listed.

**Drugs and Poisons****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.

**Other regulations, limitations and prohibitive****regulations****ELINCS (European List of Notified Chemical****Substances)**

Substance is not listed.

**Substances of very high concern (SVHC)****according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances**

Substance is not listed.

**15.2 Chemical safety assessment:**

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.

**Department issuing data specification sheet:** Health, Safety and Environmental Department.**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)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

DE/E