SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: Silicon dioxide

Product Number: 637238
Brand: Aldrich
REACH No.: 01-2119379499-16-XXXX
CAS-No.: 7631-86-9

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Silicon dioxide

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>O$_2$Si</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>60.08 g/mol</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7631-86-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-545-4</td>
</tr>
</tbody>
</table>

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first-aid measures

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
silicon oxides
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
No special precautionary measures necessary.

6.3 Methods and materials for containment and cleaning up
Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Tightly closed. Dry.

Storage class
Storage class (TRGS 510): 11: Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters

8.2 Exposure controls

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min  
Material tested: KCL 741 Dermatril® L  

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).  

Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0,11 mm  
Break through time: 480 min  
Material tested: KCL 741 Dermatril® L  

**Respiratory protection**  
required when dusts are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.  
Recommended Filter type: Filter type P1  
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.  

**Control of environmental exposure**  
No special precautionary measures necessary.  

---  

**SECTION 9: Physical and chemical properties**  
**9.1 Information on basic physical and chemical properties**  

| a) Appearance | Form: powder  
Color: white |  
| b) Odor | odorless |  
| c) Odor Threshold | Not applicable |  
| d) pH | 3,7 - 4,7 at >= 40 g/l at 25 °C |  
| e) Melting point/freezing point | Melting point/range: > 1.600 °C - lit. |  
| f) Initial boiling point and boiling range | 2.230 °C - lit. |  
| g) Flash point | Not applicable |  
| h) Evaporation rate | No data available |  
| i) Flammability (solid, gas) | No data available |  
| j) Upper/lower flammability or explosive limits | No data available |  
| k) Vapor pressure | No data available |  
| l) Vapor density | No data available |
m) Density 2,2 - 2,6 g/mL at 25 °C
Relative density No data available
n) Water solubility ca.0,076 g/l at 37 °C - OECD Test Guideline 105- slightly soluble
o) Partition coefficient: n-octanol/water Not applicable for inorganic substances
p) Autoignition temperature does not ignite
q) Decomposition temperature No data available
r) Viscosity Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
s) Explosive properties No data available
t) Oxidizing properties none
u) Particle characteristics
  Particle size < 150 µm

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Exothermic reaction with:
- Hydrogen halides
- Halogen oxides
- Alkali hydroxides
- Sodium
- Xenon hexafluoride

10.4 Conditions to avoid
No information available

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
- LD50 Oral - Rat - male and female - > 5,000 mg/kg  
  (OECD Test Guideline 401)
- LC50 Inhalation - Rat - male and female - 4 h - > 5,01 mg/l - aerosol
  
  (OECD Test Guideline 436)
- LD50 Dermal - Rabbit - > 5,000 mg/kg
Remarks: (ECHA)

**Skin corrosion/irritation**
- Skin - Rabbit
  Result: No skin irritation - 4 h  
  (OECD Test Guideline 404)

**Serious eye damage/eye irritation**
- Eyes - Rabbit
  Result: No eye irritation - 24 h  
  (OECD Test Guideline 405)

**Respiratory or skin sensitization**
- in vivo assay - Guinea pig
  Result: Not a skin sensitizer.
  (OECD Test Guideline 406)

**Germ cell mutagenicity**
- Test Type: Ames test
- Test system: Salmonella typhimurium
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 471
  Result: negative
- Test Type: In vitro mammalian cell gene mutation test
- Test system: Chinese hamster ovary cells
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 476
  Result: negative
- Test Type: Chromosome aberration test in vitro
- Test system: Chinese hamster ovary cells
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 473
  Result: negative

- Test Type: gene mutation test
- Species: Rat

Application Route: Inhalation

Result: negative
Remarks: (ECHA)

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available
**Specific target organ toxicity - single exposure**  
No data available  

**Specific target organ toxicity - repeated exposure**  
No data available  

**Aspiration hazard**  
No data available  

11.2 Additional Information  

RTECS: VV7310000  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  

This is a generally physiologically inert substance that displays no hazardous properties after oral intake and skin contact and after inhalation of its dusts as long as the total dust limit for silicic acid is adhered to. Intensive contact with the eye may lead to irritation symptoms.  

Handle in accordance with good industrial hygiene and safety practice.

---

**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish  
static test LC50 - Pimephales promelas (fathead minnow) - > 5.000 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates  
static test EC50 - Daphnia magna (Water flea) - > 5.000 mg/l  
(OECD Test Guideline 202)

Toxicity to algae  
static test ErC50 - Desmodesmus subspicatus (green algae) - > 173,1 mg/l  
(OECD Test Guideline 201)

Toxicity to bacteria  
static test EC50 - activated sludge - > 1.000 mg/l - 3 h  
(OECD Test Guideline 209)

**12.2 Persistence and degradability**  
The methods for determining biodegradability are not applicable to inorganic substances.

**12.3 Bioaccumulative potential**  
No data available

**12.4 Mobility in soil**  
No data available

**12.5 Results of PBT and vPvB assessment**  
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Endocrine disrupting properties**  
No data available
12.7 Other adverse effects
No ecological problems are to be expected when the product is handled and used with due care and attention.

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Product
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information
14.1 UN number
ADR/RID: -  IMDG: -  IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: -  IMDG: -  IATA: -

14.4 Packaging group
ADR/RID: -  IMDG: -  IATA: -

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no

14.6 Special precautions for user
Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information
Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any
damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.