



Safety Data Sheet

In compliance with n°1907/2006/EC and US GHS

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Silicium

Revision date: 06/02/2019

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

1.1. Product identifier

| | |
|------------------------|-----------|
| Commercial name | Silicium |
| Description | Si |
| CAS number | 7440-21-3 |
| EC number | 231-130-8 |

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

Identified uses of the substance: X-ray monochromator

Not recommended uses of the substance: Other than the identified uses indicated above.

1.3. Details of the supplier of the safety data sheet

| | |
|---------------------|---|
| Company/undertaking | Saint-Gobain Cristaux & Détecteurs |
| Address | 104, Route de Larchant |
| Zip code | F-77140 Saint-Pierre-Les-Nemours. |
| Country | France |
| Telephone | 0033 (0) 1 64 45 10 10 |
| Website | http://crystals.saint-gobain.com |

1.4. Emergency telephone number

London, Medical toxicology information service (NHS). Tel (24 hour): 020 7188 0300

Section 2: Hazards identification

2.1. Classification of the substance or mixture

| | |
|-----------------------------|-----------------|
| CLP regulation EC 1272/2008 | Not classified. |
| OSHA GHS (US) | Not classified |

2.2. Label elements

Not required under Regulation EC 1272/2008 and OSHA GHS (US).

2.3. OTHER HAZARDS

Si does not fulfil the criteria for the classification as PBT or vPvB.

| | |
|---------------------|---|
| NFPA Hazard Rating: | Reactivity: 0 Flammability: 0 Health: 0 |
|---------------------|---|

| | |
|-------|---------------|
| WHMIS | Not hazardous |
|-------|---------------|

Section 3: Composition/information on ingredients

3.1. Substances

| | |
|---------------|-----------|
| Description | Silicium |
| CAS number | 7440-21-3 |
| EC number | 231-130-8 |
| Concentration | 100% |

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Section 4: First aid measures

4.1. Description of first aid measures

As a general rule, in case of doubt or if symptoms persist, always call a doctor.
NEVER induce swallowing by an unconscious person.

| | |
|--------------|--|
| Inhalation | Mechanical irritation caused by dust in the airways: Remove person from Silicon - dust-exposed area. |
| Skin contact | Wash skin with water and/or a mild detergent. Seek medical attention if needed |
| Eye contact | Rinse eyes with water/saline solution. See a physician upon persistent discomfort. |
| Ingestion | Remove source of further ingestion. See inhalation |

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

Not applicable

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

No specific treatment required

Section 5: Fire fighting measures

5.1. Extinguishing media

| | |
|------------------------------|----------------------------------|
| General information | Not inflammable, not combustible |
| Suitable extinguishing media | Dry sand, CO2 or dry powder.. |

5.2. Special hazards arising from the substance or mixture

Although flammability test under REACH (EC guideline) show silicon to be non flammable, small silicon particles (up to 40 micrometer) can be ignited and propagate flame that extinguish quickly.
Addition of wet material to molten Silicon, may cause explosions due to formation of flammable hydrogen gas.
Silicon-particles suspended in air, may under certain conditions cause dust explosions.
The flammability and intensity of the blast increases gradually as particle size decreases.

5.3. Advice for firefighters

| | |
|---------------------------------------|---|
| <u>Specific fire fighting methods</u> | Does not require any particular methods |
| <u>Protection of fire-fighters</u> | Use appropriate protective equipment. |

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid handling that generates dust build-up. Use disposable (P2 as a minimum) dust protection mask

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Released material should be collected in suitable containers. Damp or wet product must be kept away from dry, and must not be collected and stored in closed containers.
Silicon in the form of dry fine dust should be vacuumed, using a spark-proof vacuuming system, rather than swept up

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6.4. Reference to other sections

See also section 7 and 8.

Section 7: Handling and storage

7.1. Precautions for safe handling

Technical measures

Ensure areas are well ventilated. Avoid generation of dust.

Precautions to be taken

Wear protective clothing, gloves, and goggles. Wear suitable respiratory protection where applicable

Avoid generating sparks or other ignition sources (e.g. welding) in areas with high dust concentrations.
Addition of wet material to molten Silicon may cause explosions due to formation of flammable hydrogen gas.

7.2. Conditions for safe storage, including any incompatibilities

Keep dry

7.3. Specific end use(s)

See section 1.1

Section 8: Exposure control / personal protection

8.1. Control parameters

- France (INRS - ED984:2007 and French Order of 30/06/2004):

| CAS | VME-ppm: | VME-mg/m3: | VLE-ppm: | VLE-mg/m3: | Notes: | TMP No.: |
|-----------|----------|------------|----------|------------|--------|----------|
| 7440-21-3 | - | 10 | - | - | - | - |

- Switzerland (SUVA 2009):

| CAS | VME-mg/m3: | VME-ppm: | VLE-mg/m3: | VLE-ppm: | Temps: | RSB: |
|-----------|------------|----------|------------|----------|--------|------|
| 7440-21-3 | 3a | - | - | - | - | - |

- UK / WEL (Workplace exposure limits, EH40/2005, 2007):

| CAS | TWA: | STEL: | Ceiling: | Definition: | Criteria: |
|-----------|----------|-------|----------|-------------|-----------|
| 7440-21-3 | 10 mg/m3 | - | - | - | TI |

8.2. Exposure control

Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using.
Ensure that there is adequate ventilation, especially in confined areas.

EYE/FACE PROTECTION

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

SKIN PROTECTION

Hand protection: Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

RESPIRATORY PROTECTION

Avoid breathing dust.

Type of FFP mask: Wear a disposable half-mask dust filter in accordance with standard EN149.

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Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------------------|----------------|
| Physical state: | solid, crystal |
| Odor: | None |
| Color: | Grey black |
| Solubility in water : | Insoluble |
| Density: | 2.33 |
| Boiling point: | 2355°C |
| Melting point: | 1410°C |
| Explosive properties: | Not applicable |
| Explosion limit: | Not applicable |
| Spontaneous combustibility: | Not applicable |
| Oxidizing properties: | Not applicable |

9.2. Other information

No data available

Section 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

This substance is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

Avoid: heating/ heat/ formation of dusts
Dusts can form an explosive mixture with air.

10.5. Incompatible materials

Keep away from: combustible material, acids, oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form: silicon oxide

Section 11: Toxicological information

11.1. Information on toxicological effects

Repeated or prolonged contact with the substance may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

Section 12: Ecological information

12.1. Toxicity. No aquatic toxicity data available for the substance

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12.2. Persistence and degradability . No data available.

12.3. Bioaccumulative potential . No data available.

12.4. Mobility in soil. No data available.

12.5. Results of PBT and vPvB assessment . no PBT or vPvB substance

12.6. Other adverse effects. No data available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Not classified as hazardous waste; observe local bye-laws. Do not pour into drains or waterways.

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company. Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Packaging Empty container completely. Keep label(s) on container.
Give to a certified disposal contractor.

Section 14: Transport information

Exempt from transport classification and labelling.

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2011 - IMDG 2010 - ICAO/IATA 2011).

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Si is not classified as a hazardous substance.

Labelling according to Regulation EC 1272/2008 and OSHA GHS (US) is not required.

The substance is listed on TSCA (Toxic Substance Control Act).

None of the substances are listed in Proposition 65 (California).

15.2 Chemical Safety Assessment

Not relevant

Section 16: Other information

Restrictions of use This product must not be used for applications other than those indicated in section 1.

Replace sheet 02/09/2011

Information concerning the modifications:

- removal of mentions to Directives 67/548/EEC and 1999/45/CE in sections 2 and 15
- new information in sections 4,5,6,7 from the registration dossier



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This sheet completes the technical sheets but it does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith.

The attention of the user is drawn to the risks possibly incurred by using the product for any other purpose than that for which it was intended.

This does not in any way excuse the user from knowing and applying all the regulations governing his activity.

It is the sole responsibility of the user to take all precautions required in handling the product.

The mandatory regulations mentioned are only intended to help the user to fulfil his obligations regarding the use of hazardous products.

This listing must not be considered exhaustive. It does not exonerate the user from ensuring that other legal obligations than those mentioned do not exist, relating to the use and storage of the product for which he solely is responsible.
