

# Safety data sheet

according to 1907/2006/EC, Article 31

Date Printed 27.02.2019

Version number 1

Revision Date 30.03.2015

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

- **1.1 Product identifier**
- **Trade name: Silicon Monoxide (SiO) Chips**
- **Article number:** AGR1277
- **EC number:**  
233-232-8
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the preparation:** No further relevant information available.
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier.**  
Agar Scientific Ltd  
Parsonage Lane  
Stansted CM24 8GF  
United Kingdom  
sales@agarscientific.com  
Tel: +44 (0) 1279 813 519
- **Further information obtainable from:** Technical Support
- **1.4 Emergency telephone number:** 24 hours: +44 (0)1856 407333

## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.
- **Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear eye protection / face protection.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Labelling of packages where the contents do not exceed 125 ml**
- **Hazard statements**  
Potential health effects: To the best of our knowledge the chemical, physical and toxicological properties of silicon monoxide have not been fully investigated.

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Eye: May cause abrasive irritation, characterised by redness, itching and watering.

Skin: May cause abrasive irritation, characterised by redness.

Ingestion: No acute health effects recorded.

Inhalation: May cause irritation to the respiratory system, characterised by coughing, shortness of breath, wheezing, change in breathing capacity and cyanosis.

Chronic: Chronic inhalation may cause pneumoconiosis, pulmonary fibrosis.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
Silicon Monoxide (SiO) Chips
- **Identification number(s)**
- **EC number:** 233-232-8

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:**  
Remove victim to fresh air. Give oxygen if breathing is difficult. Seek medical attention if symptoms persist.
- **After skin contact:**  
Remove contaminated clothing. Brush material off skin and wash affected area with mild soap and water. Seek medical attention if symptoms persist.
- **After eye contact:**  
Rinse opened eye under running water. If symptoms persist, consult a doctor.  
Flush eyes with lukewarm water, lifting eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.
- **After swallowing:** No acute or chronic health effects are known by ingestion.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **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 extinguishing methods suitable to surrounding conditions.  
Use suitable extinguishing media for surrounding materials and type of fire.
- **5.2 Special hazards arising from the substance or mixture**  
Silicon monoxide may emit toxic fumes if involved in a fire. May be flammable and possibly pyrophoric on contact with air at extremely elevated temperatures.
- **5.3 Advice for firefighters**
- **Protective equipment:**  
Fire fighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous.
- **Additional information** Isolate runoff to prevent environmental pollution.

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## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear appropriate respiratory and protective equipment.
- **6.2 Environmental precautions:** Dispose of in accordance with local regulations.
- **6.3 Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Isolate spill area. Provide ventilation. Vacuum up spill using high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal.  
Do not raise dust.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Wash thoroughly after handling.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities** Store in cool, dry area.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:**  
Use local exhaust to maintain concentration at low exposure levels.

· **8.1 Control parameters**

<b>Ingredients with limit values that require monitoring at the workplace:</b>	
<b>Silicon Monoxide (SiO) Chips</b>	
PEL	Long-term value: 15 mg/m <sup>3</sup> (total dust)
OEL	Long-term value: 10 mg/m <sup>3</sup> (total dust)

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.  
NIOSH approved respirator.

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**Protection of hands:**


Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

**Material of gloves**

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.

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Not applicable.

**Eye protection:**


Tightly sealed goggles

**Body protection:** Clothing, suitable to prevent skin contact.

## SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**
**General Information**
**Appearance:**

<b>Form:</b>	Powder
<b>Colour:</b>	Black
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not determined.

**pH-value:** Not applicable.

**Change in condition**

<b>Melting point/freezing point:</b>	1,702 °C
<b>Initial boiling point and boiling range:</b>	1,880 °C

**Flash point:** Not applicable.

**Flammability (solid, gas):** Product is not flammable.

**Decomposition temperature:** Not determined.

**Auto-ignition temperature:** Not determined.

**Explosive properties:** Product does not present an explosion hazard.

**Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

**Vapour pressure:** Not applicable.

<b>Density at 20 °C:</b>	2.13 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not applicable.

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· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with water:</b>	Insoluble.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· <b>9.2 Other information</b>	Molecular Formula: SiO Molecular Weight: 44.08

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** Strong acids and bases.
- **10.6 Hazardous decomposition products:** Silicon dioxide.

## SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Skin corrosion/irritation** May be irritant.
- **Serious eye damage/irritation**  
Causes serious eye irritation.  
May be irritant.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**  
May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **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:**
- **General notes:** Not hazardous for water.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods** Disposal must be made according to official regulations.
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

- |                                                                                  |                 |
|----------------------------------------------------------------------------------|-----------------|
| · <b>14.1 UN-Number</b>                                                          | -               |
| · <b>14.2 UN proper shipping name</b>                                            | -               |
| · <b>14.3 Transport hazard class(es)</b>                                         | -               |
| · <b>14.4 Packing group</b>                                                      | -               |
| · <b>14.5 Environmental hazards:</b>                                             |                 |
| · <b>Marine pollutant:</b>                                                       | No              |
| · <b>14.6 Special precautions for user</b>                                       | Not applicable. |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | Not applicable. |

## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge and should assist the user with the safe handling of this material when properly applied. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Sales department
- **Contact:**  
sales@agarscientific.com  
Tel: +44 (0) 1279 813 519
- **Abbreviations and acronyms:**  
GHS: Globally Harmonised 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)  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3