

MATERIAL SAFETY DATA SHEET

Revision Date: December 8, 2010

Revision No: 11

Valid until Dec. 2012

SECTION 1 - Chemical Product and Company Identification

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EC Registry Number: 231-130-8
CAS Registry Number: 7440-21-3
CAS Name: Silicon

Substance: SILICON

TRADE NAME/
trade SYNONYMS (S) SILICON POWDER, POLYCRYSTALLINE; **SICOMILL™** (our mark)

Chemical Family: Silicon
Area of Use: Raw material when manufacturing engineering ceramics and other industrial applications.

SECTION 2 - Composition, Information on Ingredients

Component Substance: SILICON
Component Per Cent: Min. 98 %
CAS Registry Number: 7440-21-3
Component Substance: SILICON DIOXIDE
Component Per Cent: Max. 2 %
CAS Registry Number: 7631-86-9

SECTION 3 - Hazards Identification

Potential Health Effects Inhalation: May cause irritation when inhaling.

Points of Environment Hazard: No information is available.

Points of Other Hazard: Risk for dust explosion.

SECTION 4 - First Aid Measures

- Inhalation:** Remove from exposure area to fresh air immediately.
- Skin Contact:** Remove contaminated clothing and shoes immediately. Wash with soap or mild detergent and large amounts of water.
- Eye Contact:** Wash eyes immediately with large amounts of water.
- Ingestion:** Rinse mouth with water.

SECTION 5 - Fire Fighting Measures

- Extinguishing Media:** Use dry sand or dry powder, alternatively carbon dioxide extinguisher. Do not apply water to burning material.
- Firefighting:** Move container from fire area if possible. Cool down the outside of container. Avoid breathing vapours or dusts; keep up-wind.
- Point of Hazard:** Silicon-dust in air may under certain conditions cause dust explosions. See section 10.

SECTION 6 - Accidental Release Measures

- Occupational Spill:** Shut off ignition sources. For small spills, sweep up with a minimum of dusting. For larger spills, wet down with water and dike for later disposal. No smoking, flames or flares in hazard area.
- Personal protective Equipment:** If needed use protective inhalation and protective gloves.

SECTION 7 - Handling and Storage

- Handling:** Observe all federal, state and local regulations when storing or disposing of this substance.
- Storage:** Keep product dry.
- Unsuitable Material:** No special restrictions.

SECTION 8 - Exposure Controls, Personal Protection

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| Inhalation: | If needed use suitable protective inhalation. |
| Skin Contact: | Protective clothes and protective gloves are recommended. |
| Eye Contact: | Wear dust-resistant safety goggles. Eyewash is provided. |
| Hygiene Limiting Value: | 5 mg/m ³ OSHA TWA (respirable dust). |
| Ventilation: | Provide local exhaust ventilation system to meet published exposure limits. Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapour or fume are present. |

SECTION 9 - Physical and Chemical Properties

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| Description: | Dark black to brown powder |
| Structure: | Crystalline |
| Molecular Weight: | 28 |
| Molecular Formula: | Si |
| Melting Point: | 1410°C |
| Specific Gravity: | 2.300 kg/m ³ |
| Bulk Density: | 650 - 1,200 kg/m ³ depending on milling grade |
| Water Solubility: | Insoluble |
| Explosion area in air: | 100 g/m ³ to 5,000 g/m ³ |

SECTION 10 - Stability and Reactivity

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| Hazard Fragmentary: | Stable under normal temperatures and pressures. |
| Hazard Reactivity: | During heating material can react with water while hydrogen gas can be produced. It is also possible to get hydrogen gas during milling in water. It can react with oxidizing agent. |
| Conditions to Avoid: | Prevent dispersion of dust in air. Keep sparks or flames away from the product. |

Hazardous Decomposition products: Reaction with hydrofluoric acid (HF) and nitric acid (HNO₃) may lead to the formation of toxic gases like silicon tetrafluoride (SiF₄) or nitrous gases (NO_x). Silicon may react with acids forming flammable gases such as hydrogen (H₂) and silane (SiH₄). Wet silicon powder will form flammable hydrogen gas, due to decomposition of water.

SECTION 11 - Toxicological Information

Acute effects:

Inhalation: Fine dust particles may irritate and dehydrate mucous membranes.
Skin contact: Dust may irritate and dehydrate skin.
Eye contact: Dust may irritate and cause dryness.
Ingestion: Dust may irritate and dehydrate mucous membranes.

Chronic effects: No chronic effects are known. Silicon powder is not known to be a reproductive toxin or mutagen.

SECTION 12 - Ecological Information

Silicon powder is not characterized as dangerous for the environment.

SECTION 13 - Disposal Considerations

Dispose of in accordance with applicable federal, state, and local regulations. Silicon powder is not listed as RCRA Hazardous Waste (40 CFR 261).

SECTION 14 - Transport Information

No other information is currently available for this record.

SECTION 15 - Regulatory Information

No other information is currently available for this record.

SECTION 16 - Other Information

No other information is currently available for this record.