GNPGraystar
Specialty Materials

# SDS (Safety Data Sheet)

acc. to OSHA HCS (29 CFR 1910.1200)

## Trade Name: Beta Silicon Carbide

## 1 IDENTIFICATION

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|---|---|
| **Product Identifier:** | Beta Silicon Carbide, various grades |
| **Synonyms:** | Beta SiC, β-Silicon Carbide, β-SiC |
| **CAS No. / EC No.:** | 409-21-2 / 206-991-8 |
| **Recommended Use:** | Product is intended for use in ceramics or refractories, or as an abrasive. |
| **Use(s) Advised Against:** | Contact manufacturer if using product outside of recommended use cases. |
| **Manufacturer/Supplier:** | GNPGraystar<br>37 John Glenn Dr.<br>Amherst, NY 14228<br>Ph: 716-759-6600 |
| | GNPGraystar<br>9 Simmonsville Road<br>Bluffton, SC 29910<br>Ph: 843-815-5600 |
| **Emergency Telephone No.:** | CHEMTREC (US): 1-800-424-9300 |
| | All other regions contact your local poison control center or local chemical authority. |

## 2 HAZARD(S) IDENTIFICATION

**Classification of the substance or mixture:**

Classification has been determined in accordance with United States OSHA HCS (29 CFR 1910.1200) requirements and any corresponding Globally Harmonized System (GHS) classification parameters.

**Additional Information:**

**LABEL ELEMENTS**

**GHS Label Elements**

*Carcinogenicity* — *Category 1A*

Pictograms:

Signal Word: Danger

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| **Hazard-determining components of labeling:** | See Section 3 for more information. | |
| **Hazard Statements:** | H350 | May cause cancer via inhalation. |
| **Precautionary Statements:** | P102 | Keep out of reach of children. |
| | P203 | Obtain, read and follow all safety instructions before use. |
| | P280 | Wear face protection when inhalation of dust is possible. |
| | P318 | If exposed or concerned, get medical advice. |
| | P405 | Store locked up. |
| | P501 | Dispose of contents in accordance with all local/regional/ national/international regulations. Do not burn or pulverize for disposal. |

**HMIS Ratings (scale 0-4):**

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| Health: | *1 |
| Fire: | 0 |
| Reactivity: | 0 |
| PPE: | t |

**NFPA Ratings (scale 0-4):**

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|---|---|
| Health: | 1 |
| Fire: | 0 |
| Reactivity: | 0 |
| Specific Hazard: | N/A |

**Legend**

**4 - Extreme**
**3 - Serious**
**2 - Moderate**
**1 - Slight**
**0 - Minimal**

** Indicates a long-term health hazard from repeated or prolonged exposures*

**Long-Term Health Hazard:** Quartz ($SiO_2$), CAS# 14808-60-7

**Additional Information:** Product form is granules. Silicon carbide whiskers and granules are both listed under the CAS number 409-21-2; silicon carbide *whiskers* are considered to be a Group 2A carcinogen by IARC, whereas silicon carbide *granules* are not. Similarly, ACGIH parameters distinguish between fibrous silicon carbide (including whiskers) and nonfibrous silicon carbide, with different TLV-TWA values for respective inhalable and respirable particulate levels. All information contained within this SDS is based on the product's granular state.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization: Substance

Physical form: Granules

| Identifier | Chemical Name/Description | GHS Hazard(s) | Wt. % |
|---|---|---|---|
| CAS No.: 409-21-2<br>EC No.: 206-991-8 | Silicon carbide, SiC | Not classified as hazardous. | > 97 |
| CAS No.: 14808-60-7<br>EC No.: 238-878-4 | Silicon dioxide, crystalline silica (quartz form), $SiO_2$ | Carcinogenicity, Cat. 1A | < 1 |

Traces of other mineral components may be present as contaminants. Trace mineral contaminants may be hazardous on their own but present in concentrations below reporting and hazard classification levels. Classified hazard categories for this product are based on repeated and/or long-term exposures to respirable dusts of the product.

## 4 FIRST AID MEASURES

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| **General Information:** | No special measures required. |
| **After inhalation:** | Supply fresh air; get medical advice if symptoms occur. Provide oxygen treatment if affected person has difficulty breathing. |
| **After contact with eyes:** | Not considered to be an eye irritant. Irrigate with large quantities of water for at least 10 minutes. Remove contact lenses if present and easy to do so. Seek medical help if persistent irritation or tissue damage occur. |
| **After skin contact:** | Wash with plenty of soap and water. Skin irritation or sensitization is not anticipated to be a common symptom of exposure. If skin symptoms occur and persist, get medical help. |
| **After swallowing:** | Rinse mouth with water and seek medical advice. Material is not intended for ingestion: preparation and consumption of food or drink should not be allowed in work areas. |
| **Key symptoms and effects, both acute and delayed:** | Coughing or other difficulty breathing may occur after severe or prolonged inhalation of product dusts. Pain, difficulty breathing, or other symptoms may be felt after long-term exposures. Product dusts may cause cancer via long-term inhalation exposure. |

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| **Indication(s) of need for immediate medical help:** | Seek immediate medical help if any of the above key symptoms occur. Cancer may lead to fatigue/exhaustion or unintentional changes in body weight: seek immediate medical advice if these symptoms occur. |

## 5 FIREFIGHTING MEASURES

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| **Flash point:** N/A | **UEL:** N/A | **LEL:** N/A |
| **Auto-ignition temperature:** | Not applicable to this product. | |
| **Flammability:** | Not flammable or combustible. Product will not burn. | |
| **Extinguishing media:** | Use any suitable media for the environment in which the fire or conflagration is taking place. Be mindful of any surrounding flammable/combustible materials. High volume water jet not preferred due to potential to spread fire. | |
| **Hazardous decomposition products:** | None anticipated. | |
| **Firefighting instructions:** | Firefighters and other involved individuals should wear self-contained breathing apparatuses and be aware of any flammable/combustible substances involved in the fire. | |

## 6 ACCIDENTAL RELEASE MEASURES

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| **Personal precautions, protective equipment, and emergency procedures:** | No special measures required. Per general best practices: wear protective clothing, ensure adequate ventilation, avoid dust formation, use respiratory protective devices when anticipating fumes or dusts, and avoid contact with the eyes and skin where possible. For large spills, take precautions against dust inhalation exposure via respirator or other inhalation protection device. |
| **Environmental precautions:** | Prevent from entering drains or water courses. Do not allow to enter soil. |
| **Methods and material for containment and cleanup:** | Avoid formation of dust. Pick up mechanically. Ensure adequate ventilation. Store in suitable receptables for recovery or disposal. Verify compliance with local regulations for waste disposal. |
| **Other information:** | See Section 7 for additional information on safe handling.<br>See Section 8 for additional information on personal protective equipment.<br>See Section 13 for additional information on disposal. |

## 7 HANDLING AND STORAGE

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| **Precautions for safe handling:** | Prevent dust formation. Any deposit of dust that cannot be prevented should be removed regularly. Do not dry clean dust-covered objects and floors: wash thoroughly with plenty of water. Use only in well-ventilated areas. |
| **Information about protection against explosions and fires:** | No special measures required. |
| **Requirements for storerooms and receptacles:** | Storage should occur in cool, dry, well-ventilated areas. |
| **Information regarding storage in common storage facility:** | No special measures required. |

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| **Further information about storage conditions:** | No additional information available. |

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**Applicable component occupational exposure limits requiring monitoring at the workplace:**

**Nuisance Dusts**

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| OSHA PEL, TWA (8-hr): | 15 mg/m$^3$ (total), 5 mg/m$^3$ (respirable) |
| California: CAL/OSHA PEL, TWA (8-hr): | 10 mg/m$^3$ (total), 5 mg/m$^3$ (respirable) |

**Silicon Carbide (SiC), CAS# 409-21-2**

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|---|---|
| OSHA PEL, TWA (8-hr): | 15 mg/m$^3$ (total), 5 mg/m$^3$ (respirable) |
| NIOSH REL, TWA (≤ 10-hr): | 10 mg/m$^3$ (total), 5 mg/m$^3$ (respirable) |
| ACGIH TLV, TWA (8-hr): | 10 mg/m$^3$ (total), 3 mg/m$^3$ (respirable) |
| California: CAL/OSHA PEL, TWA (8-hr): | 10 mg/m$^3$ (total), 5 mg/m$^3$ (respirable) |
| *Note:* | *All data based on limits for nonfibrous form with <1% Crystalline silica* |

**Crystalline Silica, Quartz Form ($SiO_2$), CAS# 14808-60-7**

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| OSHA PEL, TWA (8-hr): | 50 µg/m$^3$ (25 µg/m$^3$ Action Level) |
| NIOSH REL, TWA (≤ 10-hr): | 0.05 mg/m$^3$ |
| ACGIH TLV, TWA (8-hr): | 0.025 mg/m$^3$ (respirable particulate matter) |
| California: CAL/OSHA PEL, TWA (8-hr): | 0.05 mg/m$^3$ |
| *Note:* | *50 µg/m$^3$ = .05 mg/m$^3$* |

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| **Additional limit information:** | No additional relevant information available at time of document creation. |
| **Engineering controls:** | Ensure good ventilation/exhaustion in the workplace. |
| **Risk management:** | No special measures required. |

**PERSONAL PROTECTIVE EQUIPMENT**

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| **Breathing equipment:** | Use suitable respiratory protective devices when airborne dusts present, i.e. N95 dust mask. |
| **Hand protection:** | Wear protective gloves to ensure against mechanical hazards. |
| **Eye protection:** | Wear safety glasses or goggles to protect against eye exposure. |
| **Body protection:** | Wear general protective work clothing. |

## 9 PHYSICAL AND CHEMICAL PROPERTIES

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| **Physical state:** | Solid granulate or powder |
| **Color:** | Grey/Black |
| **Odor:** | None |
| **Odor threshold:** | No data available. |
| **pH:** | No data available. |
| **Melting/Freezing point:** | 4,532°F (2,500°C) |
| **Initial boiling point:** | No data available. |
| **Boiling point range:** | No data available. |
| **Flash point:** | Not applicable. |

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| **Flammability:** | Product is not flammable/combustible and will not burn. |
| **Upper explosive limit:** | Not applicable. |
| **Lower explosive limit:** | No applicable. |
| **Auto-ignition temperature:** | Not applicable. |
| **Evaporation rate:** | Not applicable. |
| **Vapor pressure:** | Not applicable. |
| **Vapor density:** | Not applicable. |
| **Relative density:** | 3.00 – 3.50 (water = 1.00, STP) |
| **Water solubility:** | Insoluble in water. |
| **Partition coefficient:** | No data available. |
| **Kinematic viscosity:** | No data available. |
| **Particle characteristics:** | Product is sold in cubic crystal structure. |

## 10 STABILITY AND REACTIVITY

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| **Thermal decomposition / conditions to be avoided:** | Product will convert to Alpha Silicon Carbide at temperatures exceeding 3810°F (2100°C); this process is irreversible. |
| **Hazardous reaction potential:** | Reacts with strong oxidizing agents. |
| **Incompatible materials:** | Strong oxidizing agents. |
| **Hazardous decomposition products:** | Carbon monoxide (CO), Carbon dioxide ($CO_2$) |
| **Other Information:** | No additional information available at time of document authoring. |

## 11 TOXICOLOGICAL INFORMATION

**Component $LC_{50}$/$LD_{50}$ values relevant for classification:** None

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| **Probable routes of exposure:** | Inhalation, accidental ingestion, direct skin/eye contact. |
| **Effects on skin:** | Dusts may cause irritation to susceptible individuals. |
| **Effects on eye:** | Dusts may cause eye irritation similar to that of other inert detritus. |
| **Inhalation effects:** | Dusts may cause irritation to respiratory tract. |
| **Ingestion effects:** | Ingestion of pellets/granules may lead to digestive tract discomfort, or distress is consumed in large quantities. |
| **Sensitization effects:** | Dusts may cause a sensitization reaction in susceptible individuals. |
| **Subacute/chronic toxicity:** | Long-term exposure to free respirable crystalline silica has been demonstrated to cause silicosis, cancer, and other respiratory illnesses in humans. |
| **Carcinogenicity:** | |
| **NTP Listing Status:** | Silica dust, crystalline - Listed as a known human carcinogen |
| **IARC Listing Status:** | Silica dust, crystalline - Category 1 (Carcinogenic to humans) |
| **OSHA Listing Status:** | Silica dust, crystalline - Listed as a carcinogen |
| **Cell mutagenicity:** | No data available. |
| **Reproductive effects:** | No data available. |

## 12 ECOLOGICAL INFORMATION

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| **Aquatic toxicity:** | Not considered generally hazardous to aquatic life. |

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| **Persistence and degradability:** | No relevant data available. |
| **Results of PBT assessment:** | No relevant data available. |
| **Results of vPvB assessment:** | No relevant data available. |
| **Log$K_{ow}$ , BCF values:** | No relevant data available. |
| **Bioaccumulative potential:** | Does not accumulate in organisms. |
| **Mobility in soil:** | No relevant data available. |
| **Other adverse effects:** | No relevant data available. |
| **Additional information:** | No additional relevant information available at time of document creation. |

## 13 DISPOSAL CONSIDERATION

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| **Waste treatment methods:** | Do not dispose of product via sewage system or other liquid waste streams. Product not typically designable as household or general waste. Contact your local hazardous waste disposal authority to determine necessary steps for disposal in your locality. |
| **Contaminated packaging:** | Contaminated packaging should be scrubbed clean prior to disposal if possible. Else follow all applicable local, state, and federal regulations for container disposal. |
| **Additional information:** | Refer to Section 8 for exposure controls, personal protective equipment |

## 14 TRANSPORT INFORMATION

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| **DOT (US)** | Not regulated for transport |
| **IMDG/IMO** | Not regulated for transport |
| **IATA** | Not regulated for transport |
| **General Information:** | No additional information. |

## 15 REGULATORY INFORMATION

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| **SARA 355 Components:** | Not listed |
| **SARA 313 Components:** | Not listed |
| **TSCA listing status:** | Listed |
| **Determinations of carcinogenic status:** | |
| **California Prop. 65:** | Crystalline silica, quartz form (CAS No. 14808-60-7) is known to the state of California to cause cancer when present as airborne, unbound particles of respirable size. |
| **EPA:** | No component listed |
| **IARC:** | Silica dust, crystalline - Cat. 1 (Carcinogenic to humans) |
| **ACGIH:** | Silica, crystalline - α-Quartz - Cat. A2 (Suspected human carcinogen |
| **NIOSH:** | Silica, crystalline quartz, potential occupational carcinogen |
| **Other state right-to-know listings:** | Minnesota: Crystalline silica, quartz form (CAS No. 14808-60-7)<br>New Jersey: Crystalline silica, quartz form (CAS No. 14808-60-7) |

**Information pertaining to Canadian regulations:**

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| **Canadian Domestic Substances List:** | All product components are listed. |
| **Other regulations, limitations, and prohibitive regulations:** | This product has been classified in accordance with hazard criteria of the Hazardous Products Regulations, SOR/2015-17. |

## 16 OTHER INFORMATION

All information provided is based on GNPGraystar's present knowledge and understanding of this product and any applicable regulations and data. Any information provided does not constitute a guarantee for specific product features nor does it establish a legally valid contractual relationship.

**Abbreviations and acronyms:**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS | Chemical Abstracts Service |
| DOT (US) | Department of Transportation (United States) |
| EPA | Environmental Protection Agency (United States) |
| HMIS | Hazardous Materials Identification System (United States) |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG/IMO | International Maritime Dangerous Goods/International Maritime Organization |
| NFPA | National Fire Protection Association (United States) |
| NIOSH | National Institute for Occupational Safety and Health (United States) |
| NTP | National Toxicology Program (United States) |
| OSHA | Occupational Safety and Health Administration (United States) |
| PEL | Permissible Exposure Limit |
| SARA | Superfund Amendment and Reauthorization Act |
| TLV | Threshold Limit Value |
| TSCA | Toxic Substance Control Act |
| TWA | Time-Weighted Average |

**NOTICE:** This safety data sheet complements technical data sheets but does not replace them. The information contained within is based on our present knowledge of the product on the document revision date. All information provided is done so in good faith. Product users should be warned about the risks associated with using the product for a different purpose than that for which it was intended as stated within this safety data sheet and any associated technical data sheets. GNPGraystar does not provide advice or indicate qualification for giving advice for uses outside of stated intended use cases. Statements regarding applicable regulations are provided to help users meet their regulatory obligations when using this product. Statements are not exhaustive of all potential regulatory parameters a user may be bound by and does not exempt users from ensuring their own compliance with applicable regulations regarding handling, use, and storage of the product, for which they are solely responsible.

**Date of Preparation:** May 18, 2023