Silicon Carbide Micropowder (SiC)

US Research Nanomaterials, Inc.

Material Safety Data Sheet

acc. to OSHA and ANSI

1 Identification of substance:

Trade name: Silicon carbide, beta

- **Stock number:** US1010M
- **Manufacturer/Supplier:**

US Research Nanomaterials, Inc.
3302 Twig Leaf Lane
Houston, Texas 77084, USA
www.us-nano.com

2 Composition/Data on components:

Chemical characterization:
Description: (CAS#)
Silicon carbide, beta (CAS# 409-21-2), 99+ %

Identification number(s):

EINECS Number: 206-992-8

4 Hazards identification

Hazard description: Xi Irritant

Information pertaining to particular dangers for man and environment
R 36/37/38 Irritating to eyes, respiratory system and skin.

5 First aid measures

After inhalation
Supply fresh air. If required, provide artificial respiration.
Keep patient warm.
Seek immediate medical advice.

After skin contact
Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents
CO2, extinguishing powder or water spray. Fight larger fires with water spray.

Special hazards caused by the material, its products of combustion or resulting gases:
In case of fire, the following can be released: Carbon monoxide (CO)

Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

7 Accidental release measures

Person-related safety precautions:
Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Measures for environmental protection:
Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting: Ensure adequate ventilation.

Additional information:
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

8 Handling and storage

Handling

Information for safe handling:
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace.

Information about protection against explosions and fires:
No special measures required.

Storage

Requirements to be met by storerooms and receptacles:
No special requirements.

Information about storage in one common storage facility:
Store away from oxidizing agents.

Further information about storage conditions:
Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**
  Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Silicon carbide	mg/m3	
ACGIH TLV	10;	A4
Belgium TWA	10	
France TWA	10	
Germany TWA	4	(respirable fraction of the aerosol, without fibers)
Ireland TWA	5	(respirable)
	10	(total inhalable)
Netherlands TWA	10	
Switzerland TWA	4	
United Kingdom TWA	4	(respirable dust)
	10	(total inhalable dust)
USA PEL	5	(respirable fraction)
	15	(total dust)

- **Additional information:** No data

- **Personal protective equipment**

- **General protective and hygienic measures**
  The usual precautionary measures for handling chemicals should be followed.
  Keep away from foodstuffs, beverages and feed.
  Remove all soiled and contaminated clothing immediately.
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes and skin.

- **Breathing equipment:**
  Use suitable respirator when high concentrations are present.

- **Protection of hands:** Impervious gloves

- **Eye protection:**
  Safety glasses Tightly sealed goggles Full face protection

- **Body protection:** Protective work clothing.

10 Physical and chemical properties:

- **Form:** Powder

- **Color:** Gray white

- **Odor:** Odorless

	Value/Range	Unit	Method
Change in condition			
Melting point/Melting range:	2700	°C	(subl/dec)
Boiling point/Boiling range:	Not determined		
Sublimation temperature / start:	Not determined		
Flash point:	Not applicable		
Ignition temperature:	Not determined		
Decomposition temperature:	Not determined		
Danger of explosion: Product does not present an explosion hazard.			
Explosion limits:			
Lower:	Not determined		
Upper:	Not determined		
Vapor pressure:	Not determined		
Density:	at 20	°C	3.217 g/cm^3
Solubility in / Miscibility with			
Water:	Insoluble		
pH-value:	(100 g/l) at 20	°C	3-7

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide Metal oxide fume

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):**
  Tumorigenic effects have been observed on tests with laboratory animals.
- **Subacute to chronic toxicity:**
  Silicon carbide is a nuisance dust capable of producing nonprogressive pulmonary fibrosis. Silicon carbide implants have caused tumors in laboratory animals.
- **Additional toxicological information:**
  To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
  The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.
  No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

13 Ecological information:

- **General notes:**
  Do not allow material to be released to the environment without proper governmental permits.

14 Disposal considerations

- **Product:**
- **Recommendation**
  Consult state, local or national regulations for proper disposal.
- **Uncleaned packagings:**
- **Recommendation:**
  Disposal must be made according to official regulations.

15 Transport information

Not a hazardous material for transportation.

- **DOT regulations:**

- **Hazard class:** None
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** None
- **Maritime transport IMDG:**
- **IMDG Class:** None
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** None
- **Transport/Additional information:**
  Not dangerous according to the above specifications.

16 Regulations

- **Product related hazard informations:**
- **Hazard symbols:** Xi Irritant
- **Risk phrases:**
  36/37/38 Irritating to eyes, respiratory system and skin.
- **Safety phrases:**
  26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
- **National regulations**
  All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.
- **Information about limitation of use:**
  For use only by technically qualified individuals.

17 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.