

# Safety Data Sheet



## 1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)  
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ID Number : 8002001

Identity of Substance/Mixture : Certified reference material: NMIJ CRM 8002-a  
 Fine Silicon Carbide Powder for Fine Ceramics (β-phase)  
 Recommended Use of the Chemical and Restriction on Use : This CRM is intended for use in controlling the precision of analysis or confirmation of the validity of analytical methods or instruments during the analysis of main constituents and trace elements in silicon carbide. Do not use this reference material for other purposes than testing/research.  
 This CRM is a reference material (specified in the Japanese Industrial Standard (JIS) Q 0030).

## 2. Hazards Identification

GHS Classification : Carcinogenicity : Class 1B  
 Specific Target Organ : Class 1 (Respiratory system)  
 Toxicity/Systemic Toxicity (Single Exposure)  
 Specific Target Organ : Class 1 (Lung)  
 Toxicity/Systemic Toxicity (Repeated Exposure)

GHS Label Element:



Signal Word : Danger  
 Hazards Statement: May cause cancer  
 Causes damage to organ (respiratory system)  
 Causes damage to organ (lung) through prolonged or repeated exposure  
 Other Hazards : -

Statement

Precautionary Statement : [Precaution]  
 Do not eat, drink or smoke when using this product.  
 Get the instruction manual before use. Do not handle until all safety precautions have been read and understood.  
 Wash hands thoroughly after handling.  
 Use personal protective equipment if necessary.  
 Do not breathe dust, mist, vapors, etc.  
 [Action]  
 Get medical advice/attention if you feel unwell.  
 If exposed: Get medical advice/attention.  
 [Storage]  
 Store this CRM in a clean place at normal room temperature.  
 [Disposal]  
 Dispose of this reference material in accordance with applicable legislation and local government ordinance.  
 Entrust disposal of this reference material to a professional waste disposal company licensed by prefectural governor.

The other hazards than the above do not result in classification or are not classifiable.

### 3. Composition/Information on Ingredients

Substance/Mixture : Mixture  
 Chemical name : Silicon carbide  
 Synonym : SiC  
 Chemical formula : SiC  
 Molecular weight : 40.10  
 CAS number : 409-21-2  
 Content : About 98 %  
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation  
 Gazetted List in Japan of Their Manufacture, etc. : (1)-174  
 Industrial Safety and Health Act : Published

This CRM contains minor elements shown below;  
 Al, Cr, Cu, Fe, Mn, Mo, Ti, Y, La, Ni, C, O, F, Cl, S.

### 4. First-aid Measures

If in Eyes : Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention immediately.  
 If on Skin : Remove/Take off contaminated clothing, etc. Rinse thoroughly with clean water. Wash polluted clothing, if reuse them.  
 If Inhaled : Remove victim to fresh air and keep at rest and warm. Get medical advice/attention immediately.

- If Ingested : Rinse mouth thoroughly with water. Drink a lot of water then it induces vomiting. Immediately call a physician.
- Predicted : -
- immediate and delayed symptoms
- Most important symptom/effect : -
- Protecting Personnel in emergency measures : Use personal protective equipment.

### 5. Fire-fighting Measures

- Extinguishing Media : This material is incombustible, use a fire extinguishing agent suitable for surrounding fire.
- Fire-Specific Hazards : Non-flammable in normal condition.
- Specific Fire-Fighting Method : Eliminate ignition sources at the origin of a fire and put out fire by using extinguishing media. Remove movable containers promptly to a safe place. In the case of immovable containers, cool their surroundings with sprayed water.
- Protection of Fire-Fighters : Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as fire protection clothing, heat-resistant clothing, protective clothing, breathing apparatus, circulating oxygen respirator, rubber gloves, and rubber boots.

### 6. Accidental Release Measures

- Personal Precaution : Remove ignition source in the vicinity immediately. Prepare fire-fighting equipment for the possibility of fires.
- Personal Protective Equipment and Emergency Procedures : Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Use appropriate personal protective equipment during the operation to avoid skin contact of splash etc. and inhalation of dust and gas.
- Environmental Precautions : Take precautions to prevent spillage from draining into rivers etc. to adversely impact the environment. Make it sure to appropriately treat contaminated wastewater in order to prevent untreated wastewater from being released into the surrounding environment.
- Recovery and Neutralization : Collect spillage in empty containers by getting it adsorbed to wiping cloth, rag or earth and sand, etc. Then wash away with a large amount of water.
- Prevention of Secondary Disaster : Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

## 7. Handling and Storage

### Handling

- Engineering : Use appropriate personal protective equipment to avoid inhalation and contact with eyes and skin.
- Precautions
- Local and General : When vapor or mist is generated, seal the source, and provide local exhaust ventilation or central ventilation.
- Ventilation
- Precautions for Safe Handling : Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers.
- Prevent spill, overflow and scattering, and avoid vapor generation.
- Keep container tightly closed after using this reference material.
- Wash hands, face etc. thoroughly and gargle after handling this reference material.
- Restrict drinking, eating and smoking to a designated area.
- Do not bring gloves and other contaminated personal protective equipment into staff room.
- Make a place handling this reference material a restricted area to keep out unauthorized people.
- Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing.
- Use local ventilation system in indoor handling areas.

### Storage

- Appropriate Storage : Keep out of sunlight, high temperature and humidity. Store in clean place at normal room temperature.
- Conditions
- Safe Container : Glass
- Packaging Material

## 8. Exposure Controls/Personal Protection

### Threshold Limit Value

- Not specified

### Permissible Concentration (Silicon carbide)

- ACGIH TLV-TWA : TWA 10 mg/m<sup>3</sup>(E); total dust
- Values recommended by : Not specified

### Japan Society for Occupational Health

- OSHA PEL TWA : 8H TWA 15 mg/m<sup>3</sup>; total dust  
8H TWA 5 mg/m<sup>3</sup>; respirable fraction

### Facility engineering

- Ventilation, exhaust : Keep container tightly closed and install local ventilation system when dust is generated.  
Install facilities to rinse eyes and to wash hands and body in the vicinity of a place handling this reference material and label them.
- Safety management/gas detector : -

- Storing precaution : Do not store with oxidizing reagents or oxidizing materials.

Personal Protective equipment

- Respiratory protection : Protective dust mask, if necessary
- Hands : Protective gloves
- Eyes : Eye protector (Goggle type as necessary)
- Skin and Body : Protective clothing

Hygiene measure

Treat in accordance with rules on Industrial hygiene and Industrial safety.

## 9. Physical and Chemical Properties

- Appearance, etc. : Powder
- Color : Gray
- Odor : No data
- pH : No data
- Melting point : No data
- Boiling point : No data
- Flashing point : No data
- Explosive range : No data
- Vapor pressure : No data
- Relative vapor density(Air=1) : No data
- Specific gravity or bulk specific gravity : No data
- Solubility : No data
- *n*-Octanol/water partition coefficient (Log Po/w) : No data
- Auto-ignition temperature : No data

## 10. Stability and Reactivity

- ◇Stability
  - Stable in normal conditions
- ◇Stability
  - It may react with strong oxidizing materials.
- ◇Conditions to Avoid
  - Sunlight, Heat, contact with oxidizing agent
- ◇Hazardous Decomposition Products
  - Carbon monoxides, Silicon dioxides

## 11. Toxicological Information

- Acute Toxicity Intratracheal Rat TDLo : 250 mg/kg (RTECS)
- Carcinogenicity A2 (ACGIH (2003))
- Specific Target Organ Toxicity/Systemic For rats, at a dose within the Category 1 guidance range, pulmonary edema, pulmonary hemorrhage, interstitial

Toxicity (Single Exposure)	pneumonia, bronchiole collapse and expansion failure of pulmonary alveolus were observed (ACGIH (2003)).
Specific Target Organ	For humans, pneumoconiosis, changes in chest X-ray,
Toxicity/Systemic Toxicity (Repeated Exposure)	pulmonary fibrosis, tubercle and pneumosilicosis were observed (ACGIH (2003) and HSDB (2005)).

## 12. Ecological Information

Degradability, concentration

- No-data

Bioaccumulative Potential

- No-data

Ecotoxicity

- No-data

## 13. Disposal Considerations

- Dispose of this reference material in accordance with applicable legislation and local government ordinance.
- When the above-mentioned treatments are not possible, entrust disposal of residual waste to a professional waste disposal company licensed by prefectural governor.
- Dispose of containers after thoroughly removing their contents.

## 14. Transport Information

UN Number : N/A

UN : N/A

Classification

Marine : N/A

pollutant

Precautions : Avoid direct sunlight and transfer with care not to spill/leak by dropping or falling, etc.

## 15. Regulatory Information

◇Industrial Safety and Health Act

- Article 57-2 (Enforcement Order: Article 18) Hazardous substance whose name, etc. must be labeled.
- Article 57-2 (Enforcement Order: Article 18-2) Hazardous substance whose name, etc. must be notified : No.336

## 16. Other Information

Others

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are

applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.

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