

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)
 Address : 1-3-1 Kasumigaseki, Chiyoda, Tokyo, Japan
 Office in Charge : Reference Materials Office, Center for Quality Management of Metrology,
 National Metrology Institute of Japan
 Person in Charge : Certified Reference Material Staff
 Telephone No. : +81-29-861-4059 Fax No. : +81-29-861-4009
 Emergency : Same as above
 Contact :

Prepared on : March 31, 2022

Revised on : —

Reference No. : 5802001

Identity of Substance/
 Mixture : Certified reference material: NMIJ CRM 5802-a Silica Glass for Thermal
 Expansivity Measurement

(Silica Glass for Thermal Expansivity Measurement)

Recommended Use of the Chemical and
 Restriction on Use : This CRM is intended to be used in calibration and validation of push-rod
 dilatometers, etc. Do not use this CRM 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 : Not classifiable

GHS Label Element : Not classifiable

Signal Word : —

Hazard Statement : —

Precautionary Statement : [Safety Precautions]

Use hand protection when handling.

Take precautions to avoid excessive impact due to drop, etc. as this CRM is easy to break. If broken, the breakage surface may cause incised wound and the broken fractions may be scattered.

[First-Aid Measures]

If swallowed: Give plenty of water and induce vomiting. If something wrong: Call a doctor/physician.

[Storage]

It is recommended to store at room temperature of 23 °C±10 °C and relative humidity of 50 % or less.

[Disposal]

Abide by applicable legislation and ordinances set by local

governments.

Entrust disposal of this CRM to a professional waste disposal company licensed by prefectural governor.

Other Hazard Statement : The other hazards than the above do not result in classification or are not classifiable.
: Harmful if swallowed. Causes irritation in contact with eye and mucus membrane. May cause symptoms such as discomfort, nausea, and headache through prolonged exposure.

3 . Composition/Information on Ingredients

Substance/Mixture : Substance
 Chemical Identity or trivial name : Silica glass
 Ingredient : Fused silica
 Synonym : Silica class, Silicon dioxide
 CAS Number : 60676-86-0
 Content : 99 % or more
 Chemical Formula or Structural Formula : SiO₂
 Molecular Weight : -
 Reference Number in gazetted List in Japan : Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.: 1-548
 Reference Number in Gazetted List in Japan : Industrial Safety and Health Act: Existing chemical substance

4 . First-aid Measures

If Inhaled : Remove victim to fresh air and keep at rest and warm. Get medical advice/attention.
 If on Skin : Rinse thoroughly with clean water. Remove/Take off all contaminated clothing, shoes, etc.
 If skin irritation or rash occurs: Get medical advice/attention.
 If in Eyes : Rinse thoroughly with clean water. Get medical advice/attention.
 If Swallowed : Give plenty of water and induce vomiting. Call a doctor/physician.
 Most Important Symptoms/Effect; Acute and Delayed : Causes irritation in contact with eye and mucus membrane.
 Precautions required to protect First-Aiders : Low risk under conditions of normal handling.

5 . Fire-fighting Measures

Suitable Extinguishing Media : Use extinguishing media appropriate for surrounding fire as this CRM is nonflammable.
 Unsuitable Extinguishing Media : Nothing special

6 . Accidental Release Measures

Personal Precaution, Personal Protective Equipment and Emergency Procedures : Eliminate all ignition sources in the vicinity promptly. Make fire extinguishing media/equipment available to prepare for potential ignition. Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Wear 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 spillages from draining into rivers etc. to adversely affect the environment. Take precautions to prevent untreated wastewater from being released into the surrounding environment.

Method and Tool for Confinement and Clean-up : Collect spillages in empty containers by getting them adsorbed to wiping cloth, rag, or soil and sand, etc. Rinse away the remains with plenty of water.

7 . Handling and Storage Precautions

Handling

Engineering Precautions (Local and General Ventilation, etc.) : If dust clouds etc. occur: Use local ventilation system in indoor handling areas.
 Avoid rough handling such as knocking over, dropping, dragging, and giving a shock to container.
 Prevent this CRM from leaking, overflowing and splashing.
 Keep container tightly closed after using this CRM.

Precautions for Safe Handling : Do not allow dust clouds to occur.

Hygiene Controls : Handle this CRM in accordance with industrial health and safety code.
 Restrict drinking, eating and smoking to a designated area.
 Wash hands, face, etc. thoroughly and gargle after handling.
 Do not bring gloves and other contaminated personal protective equipment into staff room.
 Make a place handling this CRM a restricted area to keep out unauthorized people.
 Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing.

Storage

Safe Storage Conditions : It is recommended to keep away from direct sunlight and air and store at room temperature of 23 °C±10 °C and relative humidity of 50 % or less.

Safe Container : Plastic container
Packaging Materials

※Refer to the Certificate for appropriate storage conditions and instructions for use as a reference material.

8 . Exposure Controls/Personal Protection

Threshold Limit Value

Not specified

Permissible Concentration

(Substance)

ACGIH TLV-TWA : TWA 0.1 mg/m³

Values recommended by : Not specified

Japan Society for
Occupational Health

OSHA PEL TWA : 8H TWA 10 mg/m³ (% resp SiO₂)

Engineering Controls

Ventilation/Exhaust : If dust clouds occur: Seal the emission source and install local ventilation system.

Safety Control/Gas : -

Detection

Storage Precautions : -

Personal Protective

Equipment

Respiratory System : If dust clouds occur: Use dust respirator.

Hands : Protective gloves

Eyes and Face : Eye protector

Skin and Body : Protective garment

9 . Physical and Chemical Properties

- Physical State : 6.35 mm×3.65 mm×30 mm rectangular-column-shaped solid
- Color : Clear and colorless
- Odor : Odorless
- Melting Point/Freezing Point : 1 610 °C
- Boiling Point or Initial Boiling Point and Boiling Point Range : 2 503 °C (760 mmHg)
- Flammability : No data available
- Lower Explosion Limit and Upper Explosion Limit/Flammability Limit : No data available
- Flashing Point : Nonflammable
- Auto-Ignition Temperature : No data available
- pH : No data available

- Kinetic Viscosity : No data available
- Solubility : No data available
- Partition Coefficient: *n*-octanol/Water : No data available
- Vapor Pressure : 0 mmHg (20 °C)
- Density and/or Relative Density : No data available
- Relative Gas Density : No data available
- Particle Characteristics : No data available

10. Stability and Reactivity

- Reactivity : No data available
- Chemical Stability : Stable under recommended storage conditions
- Possibility of : React with strong oxidizers
- Hazardous Reactions React with strong acids, hydrogen fluoride, high-temperature phosphoric acid, and high-temperature alkali solution.
- Conditions to Avoid : Sunlight, Heat, Moisture
- Incompatible Materials : Strong acids, Hydrogen fluoride, high-temperature phosphoric acid, High-temperature alkali solution
- Hazardous : No data available
- Decomposition
- Products

11. Toxicological Information

- Acute Toxicity : Oral Rat LD₅₀ 3160 mg/kg
Intraperitoneal Rat LDLo 50 mg/kg
Intravenous Rat LD₅₀ 15 mg/kg
Intratracheal Rat LDLo 10 mg/kg
- Skin Corrosion/ Irritation : No data available
- Serious Eye Damage/ Eye Irritation : No data available
- Sensitization – Respiratory or Sensitization - Skin : No data available
- Germ Cell Mutagenicity (Mutagenicity) : No data available
- Carcinogenicity : Classified as Group 3 by IARC (Not classifiable as to carcinogenicity to humans)
- Reproductive Toxicity : No data available
- Specific Target Organ Toxicity (Single Exposure) : No data available
- Specific Target Organ Toxicity (Repeated Exposure) : No data available
- Aspiration Hazard : No data available

12. Ecological Information

Ecotoxicity : No data available
 Persistence and Degradability : No data available
 Bioaccumulation Potential : No data available
 Mobility in Soil : No data available
 Harmful Effects on Ozone Layer : No data available

13. Disposal Considerations

Residual Waste : Dispose of this CRM in accordance with applicable legislation and local government ordinance.
 Entrust disposal of residual waste to a professional waste disposal company licensed by prefectural governor etc., or to a local government if it provides disposal services.
 If entrusting disposal of residual waste, make a waste disposal company etc. fully understand relevant risks and hazards.

Contaminated Container and Package : Dispose of containers after thoroughly removing their contents.

14. Transport Information

International Regulations

UN Number : Not applicable
 Shipping Name : —
 UN Classification : —
 Packing Group : —

Japanese Regulations

Land Transportation : Comply with Fire Service Act, Poisonous and Deleterious Substances Control Act, and High-Pressure Gas Safety Act
 Marine Transportation : Comply with Ship Safety Act and Act on Port Regulations
 Air Transportation : Comply with Civil Aeronautics Act

15. Regulatory Information

No applicable laws and regulations

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 precautions given in this document are applicable only to conditions of normal handling. When handling this CRM under special conditions etc., it is recommended to take safety precautions 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 CRM.