1. Identification of the Substance/Mixture and the Supplier

<table>
<thead>
<tr>
<th>Supplier</th>
<th>National Institute of Advanced Industrial Science and Technology (AIST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>1-3-1 Kasumigaseki, Chiyoda, Tokyo, Japan</td>
</tr>
<tr>
<td>Office in Charge</td>
<td>Reference Material Office, Center for Quality Management of Metrology, The National Metrology Institute of Japan</td>
</tr>
<tr>
<td>Person in Charge</td>
<td>Person in Charge of Reference Materials Office</td>
</tr>
<tr>
<td>Telephone No.</td>
<td>+81-29-861-4059</td>
</tr>
<tr>
<td>Fax No.</td>
<td>+81-29-861-4009</td>
</tr>
<tr>
<td>Emergency Contact</td>
<td>Same as above</td>
</tr>
</tbody>
</table>

Creation date : February 28, 2020
Revised on : -
ID Number : 5809001

Identification of the Material : Certified Reference Material NMIJ CRM 5809-a Quartz Glass for Thermal Diffusivity Measurement
Recommended Use : This CRM is intended for use in the calibration of instruments, and validation of instruments used for thermal diffusivity measurements.
Restriction on Use : Do not use this reference material for other purposes than testing/research.

2. Hazards identification

GHS Classification : Not classifiable
GHS Label element : Not available
Signal word : -
Hazard communication : -
Other hazard communication : Harmful if inhaled or swallowed. Irritates eye or mucous membrane upon contact. Symptoms such as discomfort, nausea, headache, etc. may occur due to long-term exposure

Precautionary statement:
[Preventative Measures]
Use protective gloves when handling
Breaks easily, handle gently, avoid applying strong shock, do not let it fall. Avoid cuts from broken fragments.
[Response]
If swallowed, drink large amount of water and induce vomit. Get medical advice upon unusual symptom.
[Storage]
Store in a clean environment at room temperature.
Store in dry air or nitrogen gas current recommended.
Make sure to store at a distance from radiation generating source
[Disposal]
Hazardous and toxic properties not specified in the above are not subject to the classification or not classifiable.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substance/Mixture</th>
<th>: Single product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>Fused Silica Glass for Thermal Diffusivity Measurement</td>
</tr>
<tr>
<td>Ingredient</td>
<td>Fused silica glass</td>
</tr>
<tr>
<td>Synonym</td>
<td>Quarts glass, Silica glass, Silicon dioxide</td>
</tr>
<tr>
<td>Amount</td>
<td>SiO₂</td>
</tr>
<tr>
<td>Chemical formula</td>
<td>99.9 % or more</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>-</td>
</tr>
<tr>
<td>Official Gazette</td>
<td>Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (1)-548</td>
</tr>
<tr>
<td>Reference No.</td>
<td>Industrial Safety and Health Act : Published</td>
</tr>
<tr>
<td>CAS number</td>
<td>7631-86-9, 14808-60-7</td>
</tr>
</tbody>
</table>

4. First-aid Measures

| If in eyes                         | Rinse with plenty of clean water, get medical advice |
| If on skin                         | Wash with plenty of clean water, if inflamed, get medical advice |
| If inhaled                         | Low in harm in a normal handling |
| If swallowed                       | Drink a lot of water and induce vomit, get medical advice promptly |
| Anticipated acute & delayed symptoms | Irritates eyes or mucous membrane upon contact |
| Most significant characteristics & symptoms | - |
| Protecting the person applying first-aid | Low in harm in a normal handling |

5. Fire-fighting Measures

| Extinguishing media               | Because the material is incombustible, select suitable media for the fire concerning surrounding area. |
| Specific hazards at the time of fire | Not in particular |
| Specific extinguishing measures and methods | Immediately remove combustible or ignitable materials from near the fire and start extinguishing with extinguishing agent, transfer movable containers to a safe place promptly. |
| Protecting fire-fighting personnel | Use personal protective equipment such as fire-safe clothing, self-contained compressed air breathing apparatus. |

6. Accidental Release Measures
Personal precaution: Promptly remove ignitable materials from the area, have extinguisher and extinguishing agents ready in case of a fire.

Protective equipment and emergency procedures: Wear appropriate protective equipment to protect the skin from spattering droplets and prevent from inhaling dust/particulate or gas.

Environmental precautions: To prevent causing environmental impact, do not release materials or products into rivers, etc. through drainage. Before discharging contaminated waste water, treat the waste water properly.

Recovery, neutralization: Gather the fragments and broken pieces thoroughly and wash off the remains with plenty of water.

7. Handling and Storage

Handling
Technical measures: Not in particular
Local exhaust or central ventilation: If generating dust/particle, use local exhaust ventilation.
Safe handling precautions: Handle the container with care and avoid knocking over, dropping or dragging. Minimize vapor generation to prevent leakage, overflow or spatter. Seal the container after use. Before taking a break, take off contaminated protective equipment such as protective gloves, etc. Use appropriate personal protective equipment to prevent inhalation, eye injuries, dermal inflammation.

Storage
Condition for safe storage: Avoid exposure to direct sunlight or air, store at room temperature
Safe packaging material: Plastic container

8. Exposure Controls/Personal Protection
Standard control concentration
Not established
Occupational exposure limit
- ACGIH TLV(s): TWA 0.1 mg/m³
- Japan Society for Occupational Health recommended reference value: Not established
• OSHA PEL: 8H TWA 10 mg/m³ (% resp SiO₂)
Facility engineering control
Ventilation, exhaust: If generating dust/particle, seal the source of release and install local exhaust ventilation equipment
Safety control, gas detection: -
Storage precaution: -
Protective equipment
Respiratory tract protection: For dust/particle, wear a dust-protective mask
Hands: Protective gloves
Eyes: Safety goggles
Skin and body: Protective clothing

9. Physical and Chemical Properties
• Appearance, etc.: Thickness 1.5 mm, 15 mm solid square pieces
• Color: Colorless, transparent
• 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 under normal condition
◇ Reactivity
• No data available
◇ Condition to avoid
• Sunlight, heat, humidity
◇ Hazardous decomposition products
• No data available

11. Toxicological Information
Acute toxicity
Oral rat LD₅₀ 3160 mg/kg, Interperitoneal rat LDLo 50 mg/kg
Intravenous rat LD₅₀ 15 mg/kg, Endotracheal rat LDLo 10 mg/kg
Carcinogenicity
IARC Group 3 (Not classifiable as oncogenic for humans)
12. Ecological Information
Degradability, concentration
• No data available
Bioaccumulation
• No data available
Ecotoxicity
• No data available

13. Disposal Considerations
• No data available

14. Transport Information
UN number : Not available
UN classification : Not available
Name : -
Container class : -
Marine pollutant : Not applicable
Precautions : Transfer with care avoiding direct sunlight, leakage or spill due to fall, keep away from fire sources

15. Regulatory Information
• No applicable legislation

This SDS is originally prepared for the use of the material in Japan, thus the stated laws and regulations are stipulated and carried out in Japan. The use of the material in other countries should be referred to and by application of the relevant laws and regulations of the country in which the material will be used.

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.