

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 Contact : Same as above

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Identity of Substance/Mixture : Certified reference material: NMIJ CRM 5202-a
 SiO₂/Si Multilayer Film
 Recommended Use of the Chemical and Restriction on Use : This material is intended for use in controlling the precision of analysis or adjusting the measurement condition during the depth-profile analysis by ion-sputtering with Auger electron spectroscopy, X-ray photoelectron spectroscopy and Secondary ion mass spectrometry. 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 : Not classifiable
 GHS Label Element : -
 Signal Word : -
 Hazard and toxicity : -
 Other Hazards Statement : Harmful if inhaled or swallowed. Cause irritation if in contact with eyes and mucous membrane. May cause such symptoms as discomfort, nausea and headache through prolonged exposure.
 Precautionary Statement : [Precaution]
 Use protective equipment for hands when handling.
 [Action]
 If swallowed: Give him/her plenty of water and induce vomiting. Get medical advice/attention in case of abnormalities.
 [Storage]
 Store in a clean and dry environment at temperature of 5 °C to 35 °C. Storage under flow of nitrogen is recommended.
 [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 Formula	or	SiO ₂ /Si (multilayered)
Structural Formula		
Content	:	Over 99.9 % (Si)
Molecular Weight	:	-
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS No	:	-
Hazardous component	:	-

4. First-aid Measures

If in eye	:	Low risk under normal conditions.
If on skin	:	Rinse well with clean water. Get medical assistance in the presence of inflammation.
If inhaled	:	Low risk under normal conditions.
If swallowed	:	Give him/her plenty water and induce vomiting. Get medical assistance.
Anticipated acute and delayed symptoms	:	It causes irritation if contact with eyes and mucosa.
Measures to protect the person applying emergency first aid:	:	Use personal protective equipment. Low risk under normal conditions.

5. Fire-fighting Measures

Extinguishing Media	:	This material is not flammable, and use appropriate extinguishing media for the peripheral fire.
Fire-Specific Hazards	:	This material is not flammable.
Specific Fire-Fighting Method	:	Eliminate ignition sources at the origin of a fire and put out fire by using appropriate extinguishing media. In case of surrounding fire, move the container of this material to safety place.
Protection of Fire- Fighters	:	Use personal protective equipment such as fireproof clothing, heat-resistant clothing, protective clothing, and compressed air open-circuit self-contained breathing apparatus.

6. Accidental Release Measures

Personal Precaution	:	Eliminate ignition sources at the origin of a fire immediately. Arrange appropriate extinguishing equipment in preparation for surrounding fire.
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 scattered fractions in empty containers which can be tightly closed, then wash with plenty amount of water.
Prevention of Secondary Disaster	:	-

7. Handling and Storage

Handling

Engineering Precautions	:	No data
Local and General Ventilation	:	Use local ventilation system in indoor handling area.
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 use. Wash hands, face etc. thoroughly and gargle after handling this reference material. Do not bring gloves and other contaminated personal protective equipment into staff room. Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing.

Storage

Appropriate Storage Conditions	:	Store under clean environment with normal room temperature.
Safe Container	:	plastic container
Packaging Material		

8. Exposure Controls/Personal Protection

Threshold Limit Value

Not specified

Permissible Concentration

- ACGIH TLV(s) : TWA 0.1 mg/m³
- Value recommended by : Not specified

Japan Society for

Occupational Health

• OSHA PEL	:	8H TWA 10 mg/m ³ (% resp SiO ₂)
Facility engineering		
Ventilation/Exhaust	:	Local ventilation system or General ventilation system
Safety management /gas detector	:	-
Storage Precaution	:	-
Personal Protective Equipment (PPE)		
Respiratory System	:	Dust mask (If dust is generated)
Hands	:	Protective gloves
Eyes	:	Eye protector
Skin and Body	:	Protective clothing

9. Physical and Chemical Properties

• Appearance, etc.	:	Thin plate of about 13 mm square
• Color	:	No data
• 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
• <i>n</i> -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	
◇Conditions to avoid	
• Sunlight, heat, humidity	
◇Hazardous decomposition products	
• No data	

11. Toxicological Information

Acute toxicity	Oral rat LD50 3160 mg/kg
	Abdominal cavity rat LDLo 50 mg/kg

Intravenous administration rat LD50 15 mg/kg
Intratracheal administration rat LDLo 10 mg/kg
Carcinogenic IARC group 3 (not classified for human carcinogenic)

12. Ecological Information

Degradability, concentration

- No data available

Bioaccumulation

- No data available

Ecotoxicity

- No data available
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13. Disposal Considerations

- No data available.
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14. Transport Information

UN Number : Not applicable

UN Classification : Not applicable

Shipping Name Silicon

Packing Group –

Marine Pollutant : Not applicable

Precautions : Transport this reference material carefully while keeping it away from direct sunlight and fire and preventing accidental release due to falling, overturning, etc.

15. Regulatory Information

- Not applicable

©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

Other

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.
