

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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 Emergency No. : Same as above

Creation date : January 8, 2015

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Arrangement number : 5702001

Identity of Substance/Mixture : Certified reference material: NMIJ CRM 5702-a
 Polystyrene Latex Nanoparticles (150 nm)
 Recommended Use of the Chemical and Restriction on Use : This reference material can be used for the accuracy control and the validation of measurement methods in grain size measurements such as dynamic light scattering. This material shall not be used for purposes other than testing and research.
 This CRM is a reference material (specified in the Japanese Industrial Standard (JIS) Q 0030).

2. Hazards Identification

GHS classification: Classification not possible
 GHS-labeling element: -
 Signal word: -
 Hazard and toxicity information: -
 Other toxicity information: Harmful if inhaled or swallowed
 Cautionary statement: [Safety Measures]
 Ingestion is harmful.
 [Emergency Measures]
 In case of ingestion, drink plenty of water and vomit. Seek medical attention.
 [Storage]
 Keep out of direct sunlight and store in a clean area with the temperature between 4 °C and 30 °C. Do not freeze this solution.
 [Disposal]
 Follow the related regulations and ordinances of the local government.

Use a waste-treatment firm certified by prefectural governor.

Classification is impossible or not applicable for hazards not mentioned above.

3. Composition/Information on Ingredients

Substance or mixture : Mixture

Ingredient 1

Chemical name : Polystyrene
 Synonym : Styrene polymer
 Concentration : Approximately 1%
 Chemical or structural formula : $(C_8H_8)_i$; (i: polymerization degree)
 Molecular weight : -
 CAS number : 9003-53-6
 Content : About 1 %
 Reference Number in Gazetted List in Japan : Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (6)-120
 Industrial Safety and Health Act : Published

Ingredient 2

Chemical name : Sodium azide
 Synonym : -
 Chemical formula : NaN_3
 Molecular weight : -
 CAS number : 26628-22-8
 Content : Approximately 0.05%
 Reference Number in Gazetted List in Japan : Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (1)-482
 Industrial Safety and Health Act : Published

Ingredient 3

Chemical name : Water
 Synonym :
 Chemical formula : H_2O
 Molecular weight : 18.02
 CAS number : 7732-18-5
 Content : About 99 %
 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 : -

4. First-aid Measures

Eye contact	: Wash eyes with plenty of clean water. Seek medical attention.
Skin contact	: Wash with plenty of clean water. Take off contaminated clothing, etc. and seek medical attention.
Inhalation	: Move to a place with fresh air, keep warm, and rest. Seek medical attention.
Ingestion	: Wash the mouth well with water. Contact a physician.
Estimated acute and late symptom	: -
Most important symptoms and effects	: -
Protection of first-aiders	: -

5. Fire-fighting Measures

Extinguishing media	: Extinguish fire as the first-aid firefighting by using powder, carbon dioxide, and powder fire extinguishing equipment/extinguisher. Foam extinguishing media for water-soluble liquid (alcohol-resistant foam), carbon dioxide, powder, sand, and water.
Specific hazards with regard to fire-fighting	: Irritating or toxic fumes (or gas) may be generated in the event of fire.
Specific methods of fire-fighting	: Eliminate the origin of fire and put the fire out with extinguishing media. If possible, move containers to a safe place. If not, cool the peripheral areas with water spray.
Protection for firefighters	: Work from the windward side to prevent the inhalation of toxic gas. Use fire-prevention clothing, fireproof clothing, fire-protection clothing, respirator, circulating oxygen breathing apparatus, rubber gloves, rubber boots, or other appropriate protective equipment.

6. Accidental Release Measures

Personal precautions	: As there is a high risk of slipping if it remains on the floor surface, remove or dispose frequently.
Protective equipment and emergency measures	: Before the operation, wear appropriate protective equipment to protect skin from droplets and to prevent inhalation of dust and gas.
Environmental precautions	: Prevent the released product from being drained into a river or other area that might cause environmental damage. Prevent the polluted discharge from being drained into the environment without being processed properly.
Recovery and neutralization	: Absorb the leaked liquid with liquid absorbent (sand, diatomaceous soil, acid-binding agent, universal binding agent, or sawdust) and collect in an empty container.
Prevention of	: Surround the area with a rope, etc., to prevent unauthorized

secondary accidents : people from entering the area. Work from the windward side and evacuate people to the leeward side.

7. Handling and Storage

Handling

- Technical measures : Avoid high-temperature goods and sparks.
- Local ventilation and general ventilation : In case steam or mist is generated, seal the source and provide local exhaust ventilation.
- Precautions for safe handling : Avoid rough handling such as dropping, shocking, dragging, or otherwise agitating the container.
Do not cause the substance to leak, overflow, or drift, and prevent steam from being generated.
Seal the container after use.
Wash hands, face, and other necessary parts thoroughly, and gargle after handling.
Do not eat, drink, or smoke in places other than the designated areas.
Do not bring gloves and other contaminated protective equipment into the break area.
Only authorized people should be allowed in the handling area.
Wear appropriate protective equipment to prevent inhalation, or contact with eyes, skin, or clothing.
When handling indoors, provide local exhaust ventilation.

Storage

- Appropriate storage conditions : Keep out of direct sunlight and store in a clean area with the temperature between 4 °C and 30 °C. Freezing is strictly prohibited.
- Safe packaging materials : Polypropylene

8. Exposure Controls/Personal Protection

Standard control concentration

N/A

Threshold limit values (material name)

- ACGIH TLV-TWA : N/A
- Value recommended by Japanese Society of Occupational Health : N/A
- OSHA PEL TWA : N/A

Engineering controls

- Ventilation and emission : Local ventilation equipment or general ventilation equipment
- Safety management and gas detection : Measuring device, detection tube

Storage precautions : Ventilate along the floor surface and seal the container.
Keep away from combustible/reducing materials and strong oxidants.

Protective equipment

Respiratory protection : Protective mask
Hand protection : Protective gloves
Eye protection : Safety glasses
Skin and body protection : Protective clothing

Hygiene measures

Handle in accordance with the industrial hygiene and safety standards.

9. Physical and Chemical Properties

- Appearance, etc. : Polystyrene latex nanoparticle scattering solution
- Color : White
- 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 *P*_{o/w}) : No data
- Auto-ignition temperature : No data

10. Stability and Reactivity

◇Stability

- Stable against acid and alkaline; however, resistance to oil and grease is weak.

◇Reactivity

- If heated to 300 °C or greater, it decomposes, and styrene and other toxic fumes are generated.

◇Conditions to avoid

- Contact with sunlight and heat.

◇Hazardous decomposition products

- Carbon monoxide

11. Toxicological Information

No data

12. Ecological Information

Degradability/Concentration

- Not decomposed by microorganisms, etc.

Bioaccumulation

- The material is considered as no or low concentration or accumulation in a body of fish / shellfish.

Ecotoxicity

- No data
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13. Disposal Considerations

- Residues : Dispose in accordance with related laws, regulations, and local ordinances.
Use a waste-treatment vendor certified by prefectural governor.
- Contaminated containers and packaging : To dispose of an empty container, completely remove the contents.
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14. Transport Information

- UN Dangerous : Not applicable
- Goods Number
- UN classification : Not applicable
- Product name : -
- Packing group : -
- ICAO/IATA : Not applicable
- Marine pollutant : Not applicable
- Matters to be attended to : Avoid direct sunlight. Prevent leakage and fires caused by overturning, falling, etc. and transport with caution.
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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.**
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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.
