

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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Office in Charge : Reference Materials Office, Center for Quality Management of Metrology, National Metrology Institute of Japan
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Revised on : August 11, 2020

ID Number : 5721001

Identity of Substance/Mixture : Certified reference material: NMIJ CRM 5721-a
Polystyrene Latex Particles (100 nm, Monodisperse)
Recommended Use of the Chemical and Restriction on Use : This CRM is intended for use in the calibration and control of the precision of particle size measuring instruments including differential mobility analyzer (DMA), and validation of particle size measurement methods.
Do not use this CRM for other purposes than testing/research.

2. Hazards Identification

GHS Classification : Not classified

GHS Label Element : -

Signal Word : -

Hazards Statement : -

Other Hazards Statement : Toxic if inhaled or swallowed

Precautionary Statement : [Safety Precaution]
Toxic if swallowed.

Wash hands thoroughly after handling.

Get the instruction manual before use. Do not handle until all safety precautions have been read and understood.

[First-Aid Measure]

If swallowed: Give/Drink plenty of water to induce vomiting.

Immediately get medical advice/attention.

[Storage]

Protect from direct sunlight and store in a clean place at temperatures of 4 °C to 30 °C. Keep this reference material unfrozen.

[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

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|----------------------|---|
| Substance/Mixture | : Mixture |
| Chemical name | : Polystyrene Latex Particles |
| Ingredient(1) | : Polystyrene |
| Synonym | : Styrene polymer |
| Amount | : About 1 % |
| Chemical formula | : $(C_8H_8)_i$; (i:Degree of polymerization) |
| Molecular weight | : - |
| Official Gazette | : Act on the Evaluation of Chemical Substances and Regulation of |
| Reference No. | Their Manufacture, etc. : (6)-120 Industrial Safety and Health Act : Published |
| CAS number | : 9003-53-6 |
| Ingredient(2) | : Sodium azide |
| Amount | : About 0.05 % |
| Chemical formula | : NaN_3 |
| Molecular weight | : 65.01 |
| Official Gazette | : Act on the Evaluation of Chemical Substances and Regulation of |
| Reference No. | Their Manufacture, etc. : (1)-482 Industrial Safety and Health Act : Published |
| CAS number | : 26628-22-8 |
| Ingredient(3) | : Water |
| Amount | : About 99 % |
| Chemical formula | : H_2O |
| Molecular weight | : 18.02 |
| Official Gazette | : Act on the Evaluation of Chemical Substances and Regulation of |
| Reference No. | Their Manufacture, etc. :- Industrial Safety and Health Act.:- |
| CAS number | : 7732-18-5 |
| Hazardous Ingredient | : Sodium azide |

4. First-Aid Measures

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| 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 contaminated clothing before reuse. |
| If Inhaled | : Remove victim to fresh air and keep at rest and warm. Get medical advice/attention immediately. |
| If Swallowed | : Rinse mouth thoroughly with water. Give/Drink plenty of water |

| | | |
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| | | to induce vomiting. Get medical advice/attention immediately. |
| Expected Acute and Delayed Symptom | : | No data available |
| Most Critical Characteristic and Symptom | : | No data available |
| Protection of First-Aid Responders | : | Use personal protective equipment. |

5. Fire-Fighting Measures

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| Extinguishing Media | : | In the early stages of fire extinguishing activity, use powder, carbon dioxide, powder fire extinguishing equipment, etc. Foam extinguishing agent for water-soluble liquid (alcohol-resistant foam), carbon dioxide, powder, sand, and water |
| Fire-Specific Hazard | : | In case of fire, irritating or toxic fume (or gas) may be emitted. |
| 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. If containers are immovable, cool their surroundings by spraying with 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

| | | |
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| Personal Precaution | : | Treat spillage carefully and clean it thoroughly. Be cautious of slippery floor if the material remains. |
| Personal Protective Equipment and Emergency Procedure | : | Use appropriate personal protective equipment during the operation to avoid skin contact of splash, etc. and inhalation of dust and gas. |
| Environmental Precaution | : | 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 | : | Adsorb spillage with liquid absorbent (sand, diatom earth, acid-binding agent, universal binding agent, sawdust), etc. and collect contaminated items in an empty container. |
| 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 : Keep away from hot surfaces and sparks.
- Precaution
- Local and General : If vapor or mist is emitted: Seal the emission source and provide
Ventilation local exhaust ventilation or general ventilation.
- Precautions for Safe : Avoid rough handling such as turning over, dropping, giving a
Handling shock to or dragging containers.
Prevent spill, overflow and scattering, and avoid vapor emission.
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 : Protect from direct sunlight and store in a place at room
Condition temperatures of 4 °C to 30°C. Keep this reference material unfrozen.
- Safe Container : Polypropylene
- Packaging Material

8. Exposure Controls/Personal Protection

Threshold Limit Value

- Not specified

Permissible Concentration

- ACGIH TLV-TWA : Not specified
- Values recommended : Not specified
by Japan Society for Occupational Health
- OSHA PEL TWA : Not specified

Engineering Control

- Ventilation/ Exhaust : Local exhaust ventilation system or general ventilation system
- Safety Management/ : Measuring instrument, Detector tube
Gas Detector
- Storage Precaution : Ventilate along floor surface. Seal. Keep away from flammable substances, reducing agents, and strong oxidizers.

Personal Protective equipment

- Respiratory Protection : Protective 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

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| Appearance, etc. | : Polystyrene latex nanoparticles aqueous dispersion |
| Color | : White |
| Odor | : No data available |
| pH | : No data available |
| Melting point | : No data available |
| Boiling point | : No data available |
| Flashing point | : No data available |
| Explosive range | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density (Air=1) | : No data available |
| Specific gravity or bulk specific gravity | : No data available |
| Solubility | : No data available |
| <i>n</i> -Octanol/water partition coefficient (Log Po/w) | : No data available |
| Auto-ignition temperature | : No data available |

10. Stability and Reactivity

◇Stability

- Stable against acids and alkaline materials, but not oil resistant

◇Stability

- Heating to 300 °C or above may induce decomposition to emit harmful fumes such as styrene.

◇Conditions to Avoid

- Sunlight, Heat, Contact with hot surfaces or oxidizing agents

◇Hazardous Decomposition Products

- Carbon monoxides

11. Toxicological Information

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|------------------------------------|---|
| Acute toxicity | : No data available |
| Skin corrosivity/irritation | : No data available |
| Serious eye damage/ Eye irritation | : No data available |
| Respiratory sensitization | : No data available |
| Skin sensitization | : No data available |
| Germ cell mutagenicity | : No data available |
| Carcinogenicity | : Polystyrene is evaluated as Group 3 (cannot be classified as carcinogenic to humans) by IARC. |

| | |
|--|--|
| Reproductive toxicity | : No data available |
| Specific organ toxicity (single exposure) | : No data available |
| Specific organ toxicity (repeated exposure) | : Rats were fed 2% polystyrene in 5% diet and had no effect. |
| Aspiration hazard | : No data available |

12. Ecological Information

Degradability, Concentration

- Not biodegradable

Bioaccumulative Potential

• This reference material is considered to have no or limited bioaccumulation and bioconcentration potential, in fish and shellfish.

Ecotoxicity

- No data available
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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.
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14. Transport Information

| | |
|-------------------|---|
| UN Number | : N/A |
| UN Classification | : N/A |
| Material name | : - |
| Container grade | : - |
| ICAO/IATA | : N/A |
| Marine pollutant | : N/A |
| Precaution | : Transport this reference material carefully while keeping it away from direct sunlight and preventing accidental release due to dropping, falling, etc. |

15. Regulatory Information

- No applicable laws and regulations
- © This SDS was originally prepared for the use of the reference material in Japan, and therefore Section 15 “Regulatory Information” covers only those laws and regulations which are enacted and enforced in Japan. In case of using this reference material outside of Japan, it is necessary to refer to and apply relevant laws and regulations of the country in which it is used.
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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.
