

# 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 Contact : Same as above

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Identity of Substance/Mixture : Reference material NMIJ RM 5012-a  
Polystyrene (for Light Scattering)

Recommended applications and limitations of use : This reference material can be used to control measurement accuracy and to validate measurement techniques used to determine the molecular weight and size of highly polymerized compounds. Do not use this reference material for other purposes than testing/research.

## 2. Hazards Identification

GHS classification: Classification not possible

GHS-labeling element: -

Signal word: -

Hazard and toxicity information: -

Other toxicity information: Hazardous if inhaled or swallowed.

Cautionary statement: [Safety Measures]  
Hazardous if ingested.  
[Emergency Measures]  
Ingestion: Drink plenty of water and induce vomiting. Seek medical attention.  
[Storage]  
Keep out of sunlight and in a clean area at 25 °C or lower.

[Disposal]  
Follow the pertinent regulations and ordinances established by the local government.  
Use a waste-treatment firm certified by a prefectural governor.

Classification is impossible or not applicable for hazards not

mentioned above.

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### 3. Composition/Information on Ingredients

Single substance or compound	: Single substance
Chemical name	: Polystyrene
Synonym	: Styrene polymer
Chemical or structural formula	: Molecular formula: $(C_8H_8)_i$ ; (i: polymerization degree)
Molecular weight/content	: Multiple polymer chains with an average molar mass of $6.18 \times 10^5$
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 : -
CAS number	: 9003-53-6
Hazardous component	: None

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### 4. First-aid Measures

Eye contact	: Wash eyes with plenty of clean water. Seek medical attention.
Skin contact	: Wash with plenty of clean water. Remove contaminated clothing such as gloves, shoes, or apron and seek medical attention.
Inhalation	: Move to fresh air, keep warm, and rest. Seek medical attention.
Ingestion	: Wash the mouth well with water. If unconscious, do not give anything by mouth. Contact a physician.
Estimated acute and late symptom	: -
Most important symptoms and effects	: -
Protection of first-aiders	: -

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### 5. Fire-fighting Measures

Extinguishing media	: Water spray, carbon dioxide, dry chemical powder, alcohol foam.
Specific hazards with regard to fire-fighting	: There is no danger of ignition under ambient conditions. As the combustion gas contains carbon monoxide, NOx, HCN, and other toxic gases, work from the windward side as much as possible to prevent inhalation.
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 immediately. 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, and other appropriate protective equipment.

## 6. Accidental Release Measures

- |   |   |   |
|---|---|---|
| Personal precautions                        | : | Promptly remove all potential ignition sources from peripheral areas. In case of ignition, prepare firefighting equipment.  |
| Protective equipment and emergency measures | : | When accidental release takes place indoors, thoroughly clear the air until emergency measures are complete. Before beginning, 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                 | : | Collect the leaked product in an empty container. Then, wash the spilled area with plenty of water.   |
| Prevention of secondary accidents           | : | Surround the area with a rope or some other marker to prevent unauthorized 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 sources of high temperature 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.<br>Do not cause the substance to leak, overflow, or drift, and prevent steam from being generated.<br>Seal the container after use.<br>Wash hands, face, and other necessary parts thoroughly, and gargle after handling.<br>Do not eat, drink, or smoke in places other than the designated areas.<br>Do not bring gloves and other contaminated protective equipment into the break area.<br>Only authorized people should be allowed in the handling area.<br>Wear appropriate protective equipment to prevent inhalation, or contact with eyes, skin, or clothing.<br>When handling indoors, provide local exhaust ventilation. |

### Storage

- |                                |   |   |
|--------------------------------|---|---|
| Appropriate storage conditions | : | Keep out of sunlight and in a clean area at 25 °C or lower. |
| Safe packaging materials       | : | Glass   |

## 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. Seal the container. Keep out of sunlight, in a clean location, and at room temperature.

Protective equipment

Respiratory protection : Protective mask

Hand protection : Protective gloves

Eye protection : Protective glasses with side wall (goggle type as needed)

Skin and body protection : Protective clothing

Hygiene measures

Handle in accordance with industrial hygiene and safety standards.

## 9. Physical and Chemical Properties

- Appearance, etc. : Solid
- 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 Po/w) : No data
- Auto-ignition temperature : No data

## 10. Stability and Reactivity

- ◇Stability
  - Stable against acid and alkaline; weak resistance to oil and grease.
- ◇Reactivity
  - Decomposes and generates styrene and other toxic fumes if heated to 300 °C or more.
- ◇Conditions to avoid
  - Contact with sunlight and heat.
- ◇Hazardous decomposition products
  - Carbon monoxide

## 11. Toxicological Information

No data

## 12. Ecological Information

- |                                 |   |   |
|---------------------------------|---|---|
| Degradability/<br>Concentration | : | • Not decomposed by microorganisms or other natural means                 |
| Bioaccumulation                 | : | • The material accumulates minimally or not at all in fish and shellfish. |
| Ecotoxicity                     | : | • No data   |

## 13. Disposal Considerations

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

## 14. Transport Information

- |                              |   |  |
|------------------------------|---|--|
| UN Dangerous<br>Goods Number | : | Not applicable   |
| UN classification            | : | Not applicable   |
| Product name                 | : | -  |
| Packing group                | : | -  |
| ICAO/IATA                    | : | Not applicable   |
| Marine pollutant             | : | Not applicable   |
| Matters to be<br>attended to | : | Avoid direct sunlight. Prevent leakage and fire caused by overturning, falling, and other disruptions. Transport with caution. |

## 15. Regulatory Information

Not applicable

## 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.

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