

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier	:	National Institute of Advance (AIST)	ed Industrial So	cie	nce and Technology		
Address	:	1-3-1 Kasumigaseki, Chiyoda, Tokyo, Japan					
Office in Charge	:	Reference Materials Office, O	Center for Quali	ity	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					
			Creation date	:	February 28, 2020		
			Revised on	:	August 11, 2020		
			ID Number	:	8158001		
Identity of	:	Reference material: NMIJ R	M 8158-a				
Substance/Mixture		Polystyrene for Ram	an Spectromete	r			
Recommended Use	:	This reference material(RM) is intended for use in the calibration of					
of the Chemical and		instruments, and validation	of and instrum	ent	s.		
Restriction on Use		Do not use this RM for other	r purposes than	tes	sting/research.		

2. Hazards Identification

GHS Classification :	Not applicable			
GHS Label Element :	Not applicable			
Signal Word :	Not applicable			
Hazards Statement :	Not applicable			
Other Hazards :	Toxic if inhaled or swallowed			
Statement				
Precautionary :	[Precaution]			
Statement	Not applicable			
	[Action]			
	Not applicable			
	[Storage]			
	Store in an original aluminum laminated plastic bag, and keep			
	direct sun light and store clean place at 15 °C to 25 °C.			
	[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.



Substance/Mixture	:	Single substance
Chemical name	:	Polystyrene for Raman Spectrometer
Ingredient	:	Polystyrene
Synonym	:	Styrene polymer
Amount	:	99 % or higher
Chemical formula	:	(C ₈ H 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
Hazardous Ingredient	:	-

3. Composition/Information on Ingredients

4. Physicalu measures		
If in Eyes	:	If dust or decomposed gas gets into 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 polluted clothing, if reuse them.
If Inhaled	:	If dust or decomposed gas is inhaled, remove victim to fresh air and keep at rest and warm. Get medical advice/attention immediately.
If Ingested	:	Rinse mouth thoroughly with water. Drink a lot of water then it induces vomiting. Immediately call a physician.
Predicted immediate and delayed symptoms	:	No data available
Most important symptom/effect	:	No data available
Protecting Personnel in emergency measures	:	Use personal protective equipment.

4. First-aid Measures

5. Fire-fighting Measures

Extinguishing Media	:	Water, carbon dioxide, dry chemical powder, alcohol resistant, polymer foam.
Fire-Specific Hazards	:	In the case of fire, irritating or toxic gas (CO, styrene monomer) may be generated. Extinguish fire from upwind as far as possible and avoid inhalation.
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. In the case of immovable containers, cool their surroundings with sprayed water.
Protection of	:	Use personal protective equipment such as fire protection



Fire-Fighters	clothing, protective clothing, breathing apparatus, circulating
	oxygen respirator, and rubber boots.

6. Accidental Release Measures

Personal Precaution	:	Use appropriate personal protective equipment during the operation to avoid skin contact and inhalation of dust and decomposed gas.
Personal Protective	:	If indoors, provide adequate ventilation until treatment is complete.
Equipment and		Use appropriate personal protective equipment during the
Emergency		operation to avoid skin contact of splash etc. and inhalation of dust
Procedures		and gas.
Environmental	:	Take precautions to prevent spillage from draining into rivers etc.
Precautions		Make it sure to appropriately treat contaminated wastewater in
		order to prevent untreated wastewater from being released into the
		surrounding environment.
Recovery and	:	Collect the scattered material or contaminated items in an empty
Neutralization		container.
Prevention of	:	Promptly remove nearby ignition sources and prepare extinguishing
Secondary Disaster		media.

7. Handling and Storage

Handling		
Engineering	:	Keep away from hot surfaces, sparks, and strong oxidizer.
Precautions		Provide appropriate ventilation.
Local and General	:	When dust or decomposed gas is generated, seal the source, and
Ventilation		provide local exhaust ventilation or central ventilation.
Precautions for Safe	:	Avoid contact with eyes, skin and clothing.
Handling		Do not eat, drink or smoke while working.
		Do not touch it directly with your hands.
		Wash hands thoroughly after handling.
Storage		
Appropriate Storage	:	Store and seal in an original aluminum laminated plastic bag.
Conditions		Avoid direct sun light and store in a place at room temperature
		from 15 °C to 25 °C.
Safe Container	:	Aluminum laminated plastic bag
Packaging Material		

8. Exposure Controls/Personal Protection

Threshold Limit Value

• Not specified

Permissible Concentration

Japan Society for Occupational Health has not set a permissible concentration for polystyrene dust, but it is considered appropriate to apply the following values.

 2 mg/m^3 (Inhalable dust)



8 mg/m ³ (Total dust)		
• ACGIH TLV-TWA	:	Not specified
Values recommended	:	Not specified
by Japan Society for		
Occupational Health		
\cdot OSHA PEL TWA	:	Not specified
Facility engineering		
\cdot Ventilation, exhaust	:	Use closed processing equipment or install local ventilation
		system when dust is generated.
		During high-temperature processing decomposed gas is
		generated, it is desirable to install facilities to rinse eyes and to
		wash hands and body in the vicinity of a place handling this
		reference material and label them.
 Safety management/ 	:	Measuring instrument, detector tube
gas detector		
 Storing precaution 	:	Store and seal in an original aluminum laminated plastic bag.
		Avoid direct sun light and store in a place at room temperature
		from 15 °C to 25 °C.
		Keep away from flammable substances and strong oxidizers.
Personal Protective equip	me	nt
Respiratory protection	:	Use protective mask when dust is generated.
		During high-temperature processing, decomposed gas is
		generated, use protective mask for organic gases.
Hands	:	Protective gloves
Eyes	:	Eye protector (Goggle type as necessary)
Skin and Body	:	Protective clothing (long sleeve), protective boots
Hygiene measure		-

Treat in accordance with rules on Industrial hygiene and Industrial safety.

9. Physical and Chemical Properties

Appearance, etc.	:	Solid. Disk with 25 mm diameter and 4 mm thickness.
Color	:	Colorless and transparent.
Odor	:	No data available
pH	:	No data available
Melting point	:	About 240 °C
Boiling point	:	No data available
Flashing point	:	345 °C∼427 °C
Explosive range	:	No data available
Vapor pressure	:	No data available
Relative vapor density (Air=1)	:	No data available
Specific gravity or bulk specific	:	1.05 g/cm^3
gravity		
Solubility	:	Not soluble in water, ether. Easily soluble in organic
		solvents such as toluene chloroform, tetrahydrofuran.
<i>n</i> -Octanol/water partition	:	No data available



coefficient (Log Po/w) Auto-ignition temperature : 427 °C

10.	Stability	and	Reactivity
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Stability	:	Stable in normal conditions
Reactivity	:	Flammable material.
Possibility of hazardous	:	No data available
reaction		
Conditions to avoid	:	Sunlight, Heat, contact with strong oxidizing agent.
Incompatible materials	:	Strong oxidizing agent
Hazardous	:	Carbon monoxide, styrene monomer
decomposition products		

11. Toxicological Information

Acute toxicity	:	No data available
Skin corrosivity/	:	No data available
irritation		
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	:	Evaluated as Group 3 (cannot be classified as carcinogenic to
		humans) by IARC.
Reproductive toxicity	:	No data available
Specific organ toxicity	:	No data available
(single exposure)		
Specific organ toxicity	:	Rats were fed 2% polystyrene in 5% diet and had no effect.
(repeated exposure)		
Aspiration hazard	:	No data available
% This reference material	is s	table under normal conditions, and there is no danger of the

*This reference material is stable under normal conditions, and there is no danger of the noxious additive ingredient being eluted. However, when handling this reference material under special conditions, such as high temperatures, etc., safety precautions for appropriate use are recommended.

12. Ecological Information

Ecotoxicity	:	No data available
Persistence and	:	No data available
Degradability		
Bioaccumulative	:	No data available
Potential		
Mobility in soil	:	No data available
Influence to the	:	No data available
ozone layer		

13. **Disposal Considerations**

Residual waste	:	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.
Contaminated container and	:	Dispose of containers after thoroughly removing their contents.
package		

14. Transport Information

UN Number	:	Not applicable
UN Classification	:	Not applicable
Material name	:	Not applicable
Container grade	:	Not applicable
ICAO/IATA	:	Not applicable
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, and 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.

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.