

MATERIAL SAFETY DATA SHEET**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name : PSJ-POLYSTYRENE AGI02
Recommended Use and Restrictions on Use
: May be used to produce molded or extruded articles or as a component of other industrial products. (cf. "16. Other Information")
Product Description : Polystyrene (Styrene-butadiene copolymer)
MSDS Number : H106E

MANUFACTURER

Company Name : PS Japan Corporation
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(Research & Development Department)

2. HAZARDS IDENTIFICATION**GHS CLASSIFICATION:**

Not classified, not applicable or not available.

GHS LABEL ELEMENT, including precautionary statements:

Not applicable.

EC CLASSIFICATION:

Not classified as dangerous for supply/use.
(Directive 67/548/EEC & Directive 1999/45/EC)

OSHA HAZARD COMMUNICATION STANDARD:

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION:

Skin contact with molten resin causes thermal burn. Inhalation of gas from molten resin causes nausea. Gas generated during drying and melting causes eye and skin irritation. Spilled pellets may create slipping hazard.

POTENTIAL HEALTH EFFECTS:

Inhalation : Dust may cause irritation to upper respiratory tract. Inhalation of gas from molten resin causes nausea.
Eye: Solid or dust may cause irritation or corneal injury due to mechanical action.
Skin: Essentially nonirritating to skin. Mechanical injury only. Skin contact with molten resin causes thermal burn.
Ingestion: Single dose oral LD50 has not been determined. Single dose oral toxicity is believed to be very low. No hazards anticipated from swallowing small amounts

incidental to normal handling operations.

POTENTIAL ENVIRONMENTAL EFFECTS

Never dump or discharge this material into ocean or any other body of water, to avoid ingestion by marine life or birds.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS No.	EC No.	
Styrene-butadiene copolymer	9003-55-8	(polymer)	>95wt%
White mineral oil	8042-47-5	232-455-8	1-5wt%

4. FIRST AID MEASURES

INHALATION:

Not likely to be inhaled due to physical form. If victim inhales a large amount of gases and/or fumes generated from the molten resin, remove the victim from the area to fresh air and keep him at rest for recovery. If there is no improvement, seek medical attention.

EYE :

Remove contact lens(es) at once unless the contact lens(es) sticks to an eyeball(s). Immediately flush the affected eye(s) well with copious quantity of clean water for at least 15 minutes. Do not rub eye(s) to prevent irritation and damages to cornea(s). Seek immediate medical attention.

SKIN :

Wash skin thoroughly with water. For skin contact with fume condensate, immediately wash affected area thoroughly with soap and water. For molten plastic skin contact, cool rapidly with water, and immediately seek medical attention.

INGESTION :

Not probable. Ingestion of this product dose not cause acute toxicity. If swallowed, seek medical attention.

PROTECTION TO FIRST-AIDERS

When treating molten resin, wear long pants, long sleeves, heat resistant gloves and face shield when applicable.

NOTE TO PHYSICIAN:

Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA

Water, water-jets, water-fog, carbon dioxide and other extinguishers.

SPECIAL HAZARDS:

Under fire conditions polymers decompose. The smoke may contain polymer fragments of

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varying compositions in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: Carbon monoxide, Carbon dioxide, Styrene and Hydrocarbons.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

FIRE FIGHTING INSTRUCTIONS:

Keep people away. Isolate fire area and deny unnecessary entry. Cool surroundings with water to localize fire zone. Hand held carbon-dioxide or dry chemical extinguishers may be used for small fires. Soak thoroughly with water to cool and prevent re-ignition.

OTHER FLAMMABILITY INFORMATION:

Dense smoke is emitted when burned without sufficient oxygen. Mechanical handling can cause formation of dust. To reduce the potential for dust explosion, do not permit dust to accumulate.

6. ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS:**

High risk of slipping due to leakage/spillage of product.

PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE

Breathing protection if dusts are formed. Use additional heat protection gloves when handling hot molten masses.

Remove of ignition sources and prepare of extinguishing media.

ENVIRONMENTAL PRECAUTIONS:

To prevent the release to ocean or river, keep away from drains etc.

LAND SPILL:

To prevent the slips and falls, sweep or gather up materials and place in proper container for disposal or recovery. Immediately collect released resin to prevent the environmental contamination.

WATER SPILL:

Sweep or gather up materials and place in proper container for disposal or recovery. Immediately collect released resin to prevent the environmental contamination.

7. HANDLING AND STORAGE**HANDLING:**

Should process this product under the recommended temperature range (160-260 degree C).

Gases generated in the molding process may cause irritation to the skin and respiratory tract, and

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in cases of severe over-exposure, may cause nausea and headache. Secondary operations such as grinding, sanding or sawing may produce dust explosion hazards due to the electrostatic charges or electrical spark. Prevent dust accumulation, and employ bonding, grounding, venting and explosion relief provisions.

STORAGE:

Store in a dry place away from excessive heat and sources of ignition. Avoid direct sunlight. Take necessary protection to keep away from electrostatic charge.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**EXPOSURE LIMIT VALUES:**

OSHA PEL	15 mg/m ³	(Total dust)
	5 mg/m ³	(Respirable fraction)
ACGIH TLV-TWA (1995-96)	10 mg/m ³	(Inhalable particulate)
	3 mg/m ³	(Respirable particulate)

EXPOSURE CONTROLS

Occupational Exposure Controls

Engineering Controls:

A continuous supply of fresh air to the workplace together with removal of processing fumes during the process through exhaust system is recommended.

Personal protection

Respiratory Protection:

Local ventilation system to supply fresh air to the workplace is recommended to remove the dust produced during the mechanical process or sanding. When gas or fume is not adequately controlled, use respirator.

Hand Protection

When handling pellets, avoid prolonged or repeated contact with skin. When treating molten resin, wear long sleeves, heat resistant gloves.

Eye Protection

Wear safety glasses in mechanical processing or sanding operation. If there is a potential for exposure to particles which could cause mechanical injury to the eye, wear chemical goggles.

Skin Protection

When handling pellets, avoid prolonged or repeated contact with skin. When treating molten resin, wear long pants, long sleeves, heat resistant gloves and face shield when applicable.

Environmental Exposure Controls

Do not dispose into sewers, ground or body of water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Natural color (off-white) pellets.

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Odor	: No or slightly odor.
Odor threshold	: Not available
pH	: Not applicable.
Melting Point/Melting Range	: This product does not exhibit a sharp melting point, but softens gradually over about 80 degree C.
Boiling Point/Boiling Range	: Not applicable.
Flash Point	: 345-360 degree C. (data of Polystyrene)
Evaporation Rate	: Not applicable.
Flammability	: Flammable
Vapor Pressure	: Negligible
Vapor Density	: Not applicable.
Relative Density	: about 1040 kg/m ³
Solubility	: In water : Insoluble. In others : Soluble in methylethylketone, toluene etc.
Partition coefficient n-octanol/water	: Not applicable.
Auto Ignition Temperature	: 488-496 degree C. (data of Polystyrene)
Decomposition Temperature	: Over 200 degree C, decomposing slightly.
Viscosity	: Not applicable.
Explosive Properties	: DUST EXPLOSION
Oxidizing Properties	: None

10. STABILITY AND REACTIVITY**REACTIVITY**

Flammability	: Flammable
Oxidizing Properties	: None

CHEMICAL STABILITY:

Stable under recommended conditions of storage and handling.

POSSIBILITY OF HAZARDOUS REACTIONS

Self-reactivity	: None
Reactivity with water	: None

CONDITIONS TO AVOID:

In order to avoid auto-ignition/hazardous decomposition of hot thick masses of plastic, purging should be collected in small, flat shapes or thin strands to allow for rapid cooling in water. (See 8. EXPOSURE CONTROLS/PERSONAL PROTECTION for respiratory protection advice.)

HAZARDOUS DECOMPOSITION PRODUCTS

Processing may release fumes, which may include polymer fragments and other decomposition products. Not limited to: Carbon monoxide, Carbon dioxide, Styrene and Hydrocarbons. Fumes can be irritating.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	: Not Available
Skin Corrosion/Irritation	: Product not considered primary skin irritant.
Serious Eye Damage/Irritation	: Product not considered primary eye irritant.
Respiratory or Skin Sensitization	: None or Not Available
Germ cell Mutagenicity	: Not Available
Carcinogenicity	: Resin is evaluated as Group 3 under IARC classifications. (Not classifiable as to carcinogenicity to humans.) (data of Polystyrene)
Reproductive Toxicity	: Not Available
STOST-single exposure	: Not Available
STOST-repeated exposure	: Not Available
Aspiration Hazard	: Not Available
Subacute Toxicity	: No effect on rat from oral feed including 4% polystyrene for 55 weeks. (data of Polystyrene)
Chronic Toxicity	: No effect on rat from oral feed including 5% polystyrene for 2 years. (data of Polystyrene)

12. ECOLOGICAL INFORMATION

ECOTOXICITY	: Not Available
PERSISTENCE AND BIODEGRADABILITY	: Not Available
BIOACCUMULATIVE POTENTIAL	: Not Available
OTHER ADVERSE EFFECTS	

Never dump or discharge this material into ocean or any other body of water, to avoid ingestion by marine life or birds.

13. DISPOSAL CONSIDERATIONS

Disposal of this material must be in compliance with the laws, requirements and regulations for environmental protection, which are applicable to this material in the user's country and/or state. Do not dump this product into sewers, on the ground or into any body of water.

14. TRANSPORT INFORMATION:

Comply with all national and local regulations.

UN CLASSIFICATION AND UN NUMBER : Not applicable

U.S. DEPARTMENT OF TRANSPORTATION (D.O.T.)

This product is not regulated by D.O.T.

CANADIAN TDG INFORMATION:

This material is not regulated by TDG.

Avoid water and careless handling to prevent the damage of the container.
Spilled pellets should be collected immediately to prevent the slippage.

15. REGULATORY INFORMATION

The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another. Therefore it was not possible to check this material based on all national or regional regulations. It is user's responsibility to confirm that this material complies with the applicable regulation in user's national, state or provincial, and local laws.

Regulations of the European Union (Labelling) / National legislation/Regulation

The product does not require a hazard warning label in accordance with EC Directives.

The following specific regulations are typical ones in US.**OSHA HAZARD COMMUNICATION STANDARD:**

This product is not hazardous as defined by the OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory.

CERCLA REPORTABLE QUANTITY (40CFR117, 302):

This product contains no Reportable Quantity (RQ) Substances.

SARA HAZARD CATEGORY:

This product has been reviewed according to the EPA " Hazard Categories " promulgated under SECTION 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Not to have met any hazard category.

SARA 313 INFORMATION:

This product contains no substance subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Please refer to any other national and local regulations.

16. OTHER INFORMATION

About the use to the following application, please talk with our sales department.

Medical equipment

A medical and pharmaceutical use and a tool for safe protection

An important preservation part

The use how infants-related parts' importance is high

About the use mentioned above, we firmly decline that the product is used without our agreement .

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