



# HONG KONG PETROCHEMICAL CO. LTD.

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## MATERIAL SAFETY DATA SHEET

### Polystyrene

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#### IDENTIFICATION

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Trade Name	:	<b>HK PETRO, Normal Types</b>
Common Name	:	General Purpose Polystyrene, GPPS; Crystal Polystyrene
Chemical and Other Names	:	Homopolymer Polystyrene; PS (Styrene thermoplastic resin)
CAS Number	:	9003-53-6

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#### PHYSICAL AND CHEMICAL PROPERTIES

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Appearance, physical state	:	Cylindrical pellets, diameter and length about 3 mm
Odour	:	Odourless
Colour	:	Crystal clear
Solubility in water	:	Insoluble
Solubility in organic solvents	:	Soluble in aromatic and halogenated hydrocarbons, esters, ketones
Softening point (Vicat temperature)	:	80-100°C
Processing temperature	:	180-250°C
Decomposition temperature	:	> 300°C
Flash point	:	> 350°C
Self-ignition temperature	:	> 450°C
Specific gravity	:	1050 kg/m <sup>3</sup>
Bulk density	:	650 kg/m <sup>3</sup>

#### Other Components

Antioxidants		
Lubricants		
Dyestuffs / pigments		
Residual monomer	:	Styrene

## Hazardous Reactions

None.

The product is stable in normal handling and storage conditions. It is combustible and by direct ignition it burns with a sooty flame. Since the elements contained in HK PETRO normal types are C (carbon) and H (hydrogen), by its complete combustion only CO<sub>2</sub> (carbon dioxide) and H<sub>2</sub>O (water vapor) develop.

Overheating/pyrolysis develops fumes made up of monomers, low polymers and their corresponding oxidation products.

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## **CLASSIFICATION AND LABELLING**

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Classification (EEC Directive 67/548 and following amendments, Italian Ministerial Decree 25.07.1987 No. 555) : not requested.

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## **TOXICOLOGICAL INFORMATION, EXPOSURE LIMITS**

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No evidence of acute/chronic toxicity have been reported.

Powder may cause eyes and/or respiratory organs irritation.

During processing traces of monomers may develop.

Exposure limits (ACGIH 1990-1991) are the following :

\* powders of the product : no specific limit assigned

\* monomers possibly developed during processing :

- Styrene TLV-TWA mg/m<sup>3</sup> : 213

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## **STORAGE**

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Packaging : 25 kg polyethylene bags

The product can be stored and shipped in bulk.

## Special Recommendations

- Keep away from sources of ignition, heat and sparks and from flammable products
- In storage and working areas avoid pellets spillage as a possible cause of slippage
- Avoid contact with solvents and with strong oxidizing agents

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## TRANSPORT REGULATIONS

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National	: F.S. All.7 : M.M.M.	: N.P. : C.N.P.
International	: RID-ADR : IMO : ONU : IATA	: N.P. : N.P. : -- : N.P.
Other Information	: CEFIC TEC (R) : Panel	: SK N.P. : N.P.

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## HANDLING AND PROCESSING INFORMATION

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### Protective Equipment :

- In normal conditions masks with antidust filter shall be available when requested.
- In case of fire / overheating, toxic gas and fumes are developed and self-contained breathing apparatus has to be used when requested.

### Special Precautions :

- During the processing (moulding, extrusion) vapour of styrene monomers may develop; particularly at unusually high processing temperatures (>> 250°C).
- Work rooms must be provided with adequate ventilation and/or fume and dust collectors, so as to prevent their concentrations to exceed the fixed TLV-TWA values (see above : Toxicological Information).
- Use gloves and other suitable protective items, when requested.
- During extrusion under vacuum monomers and/or other low boiling substances are extracted so water waste treatment may be requested before discharging.

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## EMERGENCY AND FIRST AID PROCEDURES

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### First Aid :

- Contact with eyes (dust) : wash with plenty of water.
- Inhalation (dust or fumes from thermal degradation) : remove the patient from polluted area; require medical assistance.

### Spills / Leaks :

- Collect mechanically.
- Not reusable products may be disposed in a controlled landfill or burned in incinerator, according to national and local rules.

### Fire :

- The product is combustible (see above : Hazardous Reactions).  
Heat of combustion : about 10,000 kcal/kg
- Recommended extinguishing media : water spray, foam, dry chemicals, carbon dioxide.
- Suitable protective devices have to be used by operators employed in extinguishing fire and removal of residual combustion product.

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### Note :

The product information in this data sheet is to the best of Hong Kong Petrochemical Co. Ltd.'s knowledge to be correct as at the date of publication.

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