



HONG KONG PETROCHEMICAL CO. LTD.

MATERIAL SAFETY DATA SHEET

High Impact Polystyrene (Polystyrene modified with Elastomers)

IDENTIFICATION

Trade Name	:	HK PETRO, High Impact Types
Common Name	:	High Impact Polystyrene, HIPS
Chemical and Other Names	:	Rubber modified Polystyrene; BS, SB (Butadiene-Styrene thermoplastic resin)
CAS Number	:	9003-55-8

PHYSICAL AND CHEMICAL PROPERTIES

Appearance, physical state	:	Cylindrical pellets, diameter and length about 3 mm
Odour	:	Odourless
Colour	:	Natural (translucent milky)
Solubility in water	:	Insoluble
Solubility in organic solvents	:	Soluble in aromatic and halogenated hydrocarbons, esters, ketones
Softening point (Vicat temperature)	:	80-95°C
Processing temperature	:	180-250°C
Decomposition temperature	:	> 300°C
Self-ignition temperature	:	> 450°C
Specific gravity	:	1040 kg/m ³
Bulk density	:	650 kg/m ³

NOTE

Styrene polymer obtained in presence of a butadiene based rubber

Other Components

Antioxidants

Lubricants

Residual monomer	:	Styrene 1,3 Butadiene
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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 High Impact types are C (carbon) and H (hydrogen), by its complete combustion only CO₂ (carbon dioxide) and H₂O (water vapor) develop.

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

CLASSIFICATION AND LABELLING

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

TOXICOLOGICAL INFORMATION, EXPOSURE LIMITS

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/m³ : 213

- Butadiene TLV-TWA mg/m³ : 22

STORAGE

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

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

HANDLING AND PROCESSING INFORMATION

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, and possibly trace of butadiene, 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

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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