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MATERIAL SAFETY DATA SHEET

HIGH IMPACT POLYSTYRENE (HIPS)

SECTION 1 – Chemical Product Identification

PRODUCT IDENTIFIER: CHEMICAL NAME Polystyrene impact-modified with butadiene rubber TRADE NAME PORENE GRADES APPLICABLE HI650, HI830 CHEMICAL FAMILY Thermoplastic polymer	SYNONYMS High Impact Polystyrene, HIPS, MIPS CHEMICAL FORMULA $(-CH(C_6H_5)-CH_2-)_m(-CH_2-CH=CH-CH_2-)_n$ PRODUCT USE: Can be used to produce injection or extrusion molded articles for commercial or industrial products.
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SECTION 2 – Composition/Information on Ingredients

MATERIAL OR COMPONENT Polystyrene impact-modified with 1, 3-butadiene rubber. Not a hazardous material. Meets FDA Requirements for Food Containers 21 CFR 177.1640	CAS Registry Number: 9003-55-8
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SECTION 3 – Hazards Identification

<u>EMERGENCY OVERVIEW</u> THRESHOLD LIMIT VALUE <u>ACUTE EFFECTS OF OVEREXPOSURE</u> INHALATION SKIN CONTACT & ABSORPTION EYE CONTACT	Can cause thermal burns when processed at high temperatures. May be an irritant to eyes, skin, and respiratory tract. N.E. Negligible hazard at room temperature. Irritation vapors to respiratory system may form when polymer is processed at high temperatures. Molten or heated material when in contact with skin can cause severe thermal burns. Cold material is not expected to be hazardous to the skin. Vapors may be formed when polymer is processed at high temperatures. These vapors may be an irritation to the eyes. Thermal burns from hot material can occur.
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INGESTION	No effects are expected for ingestion of small amounts.
SECTION 4 – First Aid Measures	
<u>EMERGENCY FIRST AID PROCEDURES</u> INHALATION SKIN CONTACT & ABSORPTION EYE CONTACT INGESTION	Remove person to fresh air. For serious burns, get medical attention. In case of skin contact with hot polymer, immediately immerse in or flush with clean, cold water. Flush with plenty of water if irritation occurs. No first aid procedures are required.
SECTION 5 – Fire Fighting Measures	
<u>FLAMMABILITY:</u> MEANS OF EXTINCTION FLASH POINT FLAMMABLE LIMITS AUTO-IGNITION TEMPERATURE: EXPLOSION DATA HAZARDOUS COMBUSTION PRODUCTS	Dry chemical, foam, water, carbon dioxide, and halons. 350°C Upper and lower values N.E. > 400°C Not Available Carbon monoxide, carbon dioxide, styrene and butadiene monomers. Fire may produce irritation gases and dense smoke.
SECTION 6 – Accidental Release Measures	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Pellets on the floor could present a serious slipping problem. Good housekeeping must be maintained at all times to avoid this hazard. Sweep, shovel, or vacuum material into clean containers.
SECTION 7 – Handling and Storage	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING OTHER PRECAUTIONS	Exposure of polystyrene to extremely high temperatures (315°C or higher) may cause partial decomposition. Chemicals that may be released include styrene monomer, benzene, and other hydrocarbons. Handling of pellets may form dust. Filter and ventilate dust where necessary. Store in a cool, dry place. Keep away from heat sources and strong oxidizing agents.

SECTION 8 – Exposure Control/ Personal Protection

EXPOSURE CONTROL

Ventilation, enclosures, or other controls may be needed to keep airborne contaminants below exposure limits.

RESPIRATORY PROTECTION

Wear respiratory protection if ventilation is inadequate. Breathing protection if dust is formed.

PROTECTIVE CLOTHING

Gloves required when handling hot material. In case of fire, wear MSHA/NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.

EYE PROTECTION

Safety goggles.

VENTILATION

Provide adequate ventilation when processing material at elevated temperatures.

OTHER PROTECTIVE EQUIPMENT

N.A.P.

SECTION 9 – Physical and Chemical Properties

PHYSICAL STATE:

Solid

ODOR AND APPEARANCE:

Opaque pellets with characteristic odor

ODOR THRESHOLD (ppm):

N.E.

SPECIFIC GRAVITY (WATER=1)

1.04-1.05

VAPOR DENSITY (AIR=1)

N.A.P.

VAPOR PRESSURE (mmHg)

N.A.P.

EVAPORATION RATE

N.A.P.

PERCENT VOLATILE (VOL %)

NIL

BOILING POINT (DEG C)

N.A.P.

SOFTENING TEMPERATURE

>90°C

pH

7

SOLUBILITY IN WATER

Insoluble

SECTION 10 – Stability and Reactivity

STABILITY

STABLE

CONDITIONS TO AVOID

Temperatures of 300+

INCOMPATIBILITY (MATERIALS TO AVOID)

Can form explosive mixtures with some organic solvents. Reacts to strong oxidants.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon dioxide, carbon monoxide, hydrocarbons, dense smoke.

HAZARDOUS POLYMERIZATION

Will not occur.

CONDITIONS TO AVOID

N.A.P.

SECTION 11 – Toxicological Information

TOXICITY:

LD50: N.E., LC50: N.E.

INGESTION, INHALATION, SKIN: Non-toxic

SKIN AND EYE IRRITATION: Prolonged contact with product can result in skin and eye irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

NOT A KNOWN CARCINOGEN.

NTP : NO

IARC : NO

OSHA : NO

SECTION 12 – Ecological Information

MOBILITY

No migration expected.

PERSISTENCE & DEGRADABILITY

No information available.

BIOACCUMULATION POTENTIAL

Insoluble in water. Not expected to be bioaccumulative.

OTHER EFFECTS

Not expected to pose a significant ecological hazard.

SECTION 13 – Disposal Considerations

TRANSFER TO AN APPROVED DISPOSAL AREA IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL REGULATIONS. RECYCLING UNCONTAMINATED PACKAGING RECOMMENDED.

SECTION 14 – Transport Information

Not Regulated (USA).

Not classified as hazardous under transport regulations (ADR RID ADNR IMDG/GGVSeeICAO/IATA).

SECTION 15 – Regulatory Information

Material is not regulated by D.O.T.

Material is in the TSCA Inventory.

Material is not subject to SARA 313 reporting requirements.

Hazard Material Information System (USA) Health – 0, Flammability – 1, Reactivity – 0.

National Fire Protection Association (USA) Health – 0, Flammability – 1, Reactivity – 0.

Material is not controlled under WHMIS (Canada).

Material is not listed in EINECS.

Material is not controlled under DSCL (EEC).

Material does not require a hazard-warning label by EC Directives (EU).

SECTION 16 – Other Information

LEGAL DISCLAIMER: WHILE THE INFORMATION HEREIN IS BELIEVED TO BE RELIABLE, NO GUARANTEE IS MADE AS TO ITS ACCURACY OR COMPLETENESS. THE CONDITIONS OF USE, HANDLING, STORAGE, AND DISPOSAL, AND THE SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL. CONSEQUENTLY, ALL RISKS INVOLVING THE USE OF THE PRODUCT ARE ASSUMED BY THE USER. WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

N.E. = NOT ESTABLISHED, N.AP. = NOT APPLICABLE, N.AV. = NOT AVAILABLE

T.C. = LIST TOXIC CHEMICAL UNDER SEC. 313 OF TITLE III OF SARA 1986