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MATERIAL SAFETY DATA SHEET

GENERAL PURPOSE POLYSTYRENE (GPPS)

SECTION 1 – Chemical Product Identification

PRODUCT IDENTIFIER:
CHEMICAL NAME

Crystal Polystyrene

CHEMICAL FAMILY

Thermoplastic polymer

TRADE NAME

PORENE

GRADES APPLICABLE

GP110, GP150

SYNONYMS

General Purpose Polystyrene (GPPS), PS, Crystal Polystyrene

CHEMICAL FORMULA
 $((C_6H_5)CHCH_2)_n$
PRODUCT USE:

Can be used to produce injection or extrusion molded articles for commercial or industrial products.

SECTION 2 – Composition/Information on Ingredients

MATERIAL OR COMPONENT

Crystal Polystyrene

CAS Registry Number:

9003-53-6

Not a hazardous material. Meets FDA Requirements for Food Containers 21 CFR 177.1640

EC-Number:

500-008-9

SECTION 3 – Hazards Identification

EMERGENCY OVERVIEW

Molten material can cause thermal burns. May be an irritant to eye, skin, and respiratory tract when processed at high temperatures.

THRESHOLD LIMIT VALUE

N.E.

ACUTE EFFECTS OF OVEREXPOSURE
INHALATION

Negligible hazard at room temperature. Irritation vapors to respiratory system may form when polymer is processed at high temperatures.

SKIN CONTACT & ABSORPTION

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.

EYE CONTACT

Irritating vapors may be formed when polymer is processed at high temperatures. 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 | Remove person to fresh air. Seek medical attention. |
| SKIN CONTACT & ABSORPTION | For serious burns, get medical attention. In case of skin contact with hot polymer, immediately immerse in or flush with clean, cold water. |
| EYE CONTACT | Flush with plenty of water if irritation occurs. |
| INGESTION | No first aid procedures are required. |
| SECTION 5 – Fire Fighting Measures | |
| <u>FLAMMABILITY:</u> MEANS OF EXTINGUISHMENT | Dry chemicals, foam, water, carbon dioxide, and halon. Do not use water jets for large fires. |
| FLASH POINT | N.E. |
| FLAMMABLE LIMITS | Upper and lower values N.E. |
| AUTO-IGNITION TEMPERATURE: | 400°C |
| EXPLOSION DATA | Not Available |
| HAZARDOUS COMBUSTION PRODUCTS | Carbon monoxide, carbon dioxide, and styrene 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 | 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. |
| OTHER PRECAUTIONS | 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

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| PHYSICAL STATE: | Solid |
| ODOR AND APPEARANCE: | Transparent pellets, odorless |
| ODOR THRESHOLD (ppm): | N.E. |
| SPECIFIC GRAVITY (WATER=1) | 1.04 |
| 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 | >80°C |
| pH | 7 |
| SOLUBILITY IN WATER | Insoluble |

SECTION 10 – Stability and Reactivity

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| STABILITY | CONDITIONS TO AVOID |
| STABLE | Temperatures of 300°C+ |
| 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 | CONDITIONS TO AVOID |
| Will not occur. | N.A.P. |

SECTION 11 – Toxicological Information

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| TOXICITY: | <u>CHRONIC EFFECTS OF OVEREXPOSURE</u> |
| LD50: N.E., LC50: N.E. | NOT A KNOWN CARCINOGEN. |
| INGESTION, INHALATION, SKIN: Non-toxic | NTP: NO |
| SKIN AND EYE IRRITATION: Prolonged contact with product can result in skin and eye irritation. | IARC: NO |
| | OSHA: NO |

SECTION 12 – Ecological Information

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