I. IDENTIFICATION

Product Name: POLYSOURCE® HiRez Colored EPS

Product Code: POLYSOURCE® 100 through 1000

Other Means of Identification: Polymeric Beads (expandable, evolving flammable vapor) Hi-Impact Expandable Polystyrene Bead, Expandable Polystyrene, Foam Polystyrene, Styrofoam

Use of the Substance/Preparation: Manufacturing

Address & Phone:
Epsilyte
555 E. Statler Road
Piqua, Ohio 45356
Phone: 937-778-9500
Emergency: Chemtrec 1-800-424-9300

II. HAZARDS IDETIFICATION

Classification:
GHS-US Classification
STOT SE 3 H336
STOT SE 3 H335

Label Elements: (GHS-US)
Signal Word: Warning
Hazard Statements:

- **H335** may cause respiratory irritation
- **H336** may cause drowsiness or dizziness

Precautionary Statements:

- **P261** Avoid breathing dust/fume/gas/mist/vapors/spray
- **P271** Use only outdoors or in a well-ventilated area
- **P304+P340** If inhaled, remove person to fresh air and keep comfortable for breathing
- **P312** Call Poison Center or doctor if you feel unwell
- **P403+P233** Store in a well-ventilated place, keep the container tightly closed
- **P40**5 store locked up
- **P501** Dispose of contents/container in accordance with local/regional/national/international regulations

III. COMPOSITION/INFORMATION ON INGREDIENTS

Name	Product identifier	%	GHS-US classification
Polystyrene	(CAS No.) 9003-53-6	90 - 93	Not classified
Polystyrene (Impact)	(CAS No.) 9003-55-8	Proprietary	Not classified
Pentane	(CAS No.) 109-66-0	3.5 - 7	Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304
Isopentane	(CAS No.) 78-78-4	3.5 - 7	Flam. Liq. 1, H224 STOT SE 3, H336 Asp. Tax. 1, H304
Color Concentrate	Varied	<6	Not classified

IV. FIRST-AID MEASURES

Description:
After Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
After Skin Contact: Remove contaminated shoes or clothes. Wash skin thoroughly with soap and water. If sticky, use a waterless hand cleaner first.
After Eye Contact: Immediately flush eyes with water and continue washing for at least 15.
After Ingestion: Seek medical attention immediately.

V. FIREFIGHTING MEASURES

Extinguishing Media:
Suitable Extinguishing Media: Water, Fog, Carbon Dioxide, or Dry Chemical
Unsuitable Extinguishing Media: None

Special Hazards Arising from the Substance or Mixture:
Fire Hazard: Spill releases flammable vapors
Explosion Hazard: None known.
Reactivity: Stable at ambient temperature and under normal conditions of use.

FIREFIGHTING MEASURES CONTINUED

Advice for Firefighters: Firefighting Instructions: Do not enter the area without proper protection. Fight fire from a safe distance/ protected d location. Beads can result in dangerous walking conditions on smooth hard surfaces/ interfere with firefighting unless covered over. For a large fire, use a substantial amount of water as a straight stream to 'dig' into the hot molten mass from outside to open and cool the interior/ prevent re-ignition. Intermittent fog application will provide surface cooling/ protection for firefighters. Produces dense black smoke when burning, obscuring vision.
Protection During Firefighting: Firefighters should wear protective gear.

VI. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures:
General Measures: Avoid breathing vapors.
For Non-Emergency Personnel: No additional information available.
Environmental Precautions: None.

Methods and Material for Containment and Cleaning Up:
For Containment: Isolate spill area and provide ventilation
Methods for Cleaning Up: Spill releases flammable vapors. Ignition sources/ ventilate confined spaces before entering. Creates dangerous hazards on any hard surface. Spread granular cover on walkways or provide open grating flooring (or equivalent). Provide cleanup crew with proper protective equipment. Prevent flow to low areas. Flammable vapors heavier than air can accumulate. On land, vacuum/ shovel into suitable disposal containers. Minimize static sparks/avoid flash fire. Recovered solids can release flammable vapors for an extended time. Keep the container tightly closed when not in use.

VII. HANDLING AND STORAGE

Precautions for Safe Handling: Allow 10 minutes after opening the original container for excess flammable vapor to dissipate before moving to the process area where heat sources exist. Provide good ventilation in the use area to prevent flammable vapor accumulation. All equipment must conform to the applicable electrical code. Clean up any spills as soon as possible. Loose beads on hard surfaces can create a slip hazard.

Conditions for Safe Storage, Including Any Incompatibilities: Transport/Store only in sealed containers below 32C/90F in well-ventilated areas away from all ignition sources.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Pentane (109-66-0)		
USA ACGIH	ACGIH TWA (ppm)	600 ppm
USA IDLH	US IDLH (ppm)	1500 ppm (10% LEL)
USA NIOSH	NIOSH REL (TWA) (mg/m3)	350 mg/m³
USA NIOSH	NIOSH REL (TWA) (ppm)	120 ppm
USA NIOSH	NIOSH REL (ceiling) (mg/m3)	1800 mg/m³
USA NIOSH	NIOSH REL (ceiling) (ppm)	610 ppm
USA OSHA	OSHA PEL (TWA) (mg/m3)	2950 mg/m³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

Isopentane (78-78-4)		
USA ACGIH	ACGIH TWA (ppm)	600 ppm

Exposure Controls

Appropriate Engineering Controls: Both local exhaust and good general room ventilation must be provided not only to control exposure but also to precent formation of flammable mixtures.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Appearance	Cylindrically or Spherically shaped.
Colour	Various.
Odour	Solvent.
Odour threshold	No data available
pH	No data available

Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	AP -59 °F
Self ignition temperature	AP 500 °C
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapour pressure	600 PSIA (at 70°F)
Relative vapour density at 20 °C	No data available
Relative density	No data available
Solubility	Negligible.
Log Pow	No data available
Log Kow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Explosive limits	1.4 - 8.3 vol %

Other Information: No additional information available.

X. STABILITY AND REACTIVITY

Reactivity: Stable at ambient temperature and under normal conditions of use.

Chemical stability: The product is stable at normal handling- and storage conditions.

Possibility of hazardous reactions: Will not occur.

Conditions to avoid: Heat, flames, and other ignition sources.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products : Oxides of carbon.

XI. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute toxicity	Not classified

Pentane (109-66-0)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	364 g/m³ (Exposure time: 4 h)

Isopentane (78-78-4)	
LC50 inhalation rat (mg/l)	280000 mg/m³ (Exposure time: 4 h)

Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified

Polystyrene (9003-53-6)	
IARC group	3

Reproductive toxicity	Not classified

Specific target organ toxicity (single exposure)	May cause drowsiness or dizziness. May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	Not classified
Aspiration hazard	Not classified

XII. ECOLOGICAL INFORMATION

Toxicity

Pentane (109-66-0)	
LC50 fish 1	9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
Isopentane (78-78-4)	
EC50 Daphnia 1	2.3 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Persistence and degradability: No additional information available.

Bioaccumulative Potential

Pentane (109-66-0)	
Log Pow	3.39
Isopentane (78-78-4)	
Log Pow	3.2 - 3.3

Mobility in soil: No additional information available.

Other adverse effects: No additional information available.

XIII. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Water Disposal Recommendation: Dispose of contents/container in accordance with local/regional/national/international regulations.

XIV. TRANSPORT INFORMATION

In accordance with DOT / ADR / RID / ADNR / IMDG / ICAO / IATA.

UN Number: UN 2211

UN Proper Shipping Name

DOT Proper Shipping Name	Polymeric beads, expandable evolving flammable vapor
Department of Transportation (DOT) Hazard Classes	9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard Labels (DOT)	9 - Miscellaneous dangerous compounds 
Packing Group (DOT)	III - Minor Danger

DOT Special Provisions (49 CFR 172.102)	32 - Polymeric beads and molding compounds may be made from polystyrene, poly(methyl methacrylate) or other polymeric material. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. IP7 - For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N of this subchapter. T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	155
DOT Packaging Non-Bulk (49 CFR 173.xxx)	221
DOT Packaging Bulk (49 CFR 173.xxx)	221

Transport by Sea

DOT Vessel Stowage Location	E - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per every 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other	19 - Protect from sparks and open flames,21 - Segregation same as for flammable liquids,25 - Shade from radiant heat,85 - Underdeck stowage must be in mechanically ventilated space,87 - Stow ''separated from'' Class 1 (explosives) except Division 14

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	100 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	200 kg

XV. REGULATORY INFORMATION

US Federal Regulations

Polystyrene (CAS# 9003-53-6)
United States TSCA (Toxic Substances Control Act) inventory: Listed EPCRA/SARA Sections 311, 312 Hazard categories: Fire Hazard EPCRA/SARA Sections 301, 302, 303, 304: Not Regulated EPCRA/SARA Section 313 (TRI Reporting): Chemical Category N982 - Zinc Compounds (above *de minimis* conc.) Clean Air Act Section 112/112(r): Not regulated

Pentane (CAS# 109-66-0)	
United States TSCA (Toxic Substances Control Act) inventory: Listed EPCRA/SARA Sections 311, 312 Hazard categories: Fire Hazard EPCRA/SARA Sections 301, 302, 303, 304: Not Regulated EPCRA/SARA Section 313 (TRI Reporting): Not regulated Clean Air Act Section 112(r): Regulated	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Isopentane (CAS# 78-78-4)
United States TSCA (Toxic Substances Control Act) inventory: Listed EPCRA/SARA Sections 311, 312 Hazard categories: Fire Hazard EPCRA/SARA Sections 301, 302, 303, 304: Not Regulated EPCRA/SARA Section 313 (TRI Reporting): Not regulated Clean Air Act Section 112(r): Regulated

US State Regulations

Pentane (109-66-0)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - Right to Know List

Isopentane (78-78-4)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - Right to Know List

XVI. OTHER INFORMATION

Asp. Tox. 1	Aspiration hazard Category 1
Flam. Liq. 1	Flammable liquids Category 1
Flam. Liq. 2	Flammable liquids Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H224	Extremely flammable liquid and vapour
H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H336	May cause drowsiness or dizziness

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.