SAFETY DATA SHEET
In Accordance with 3rd revised edition of GHS

Section 1 – Identification

Product Name : 355E
Product Type : Flame retardant
Product Description : Impregnated polystyrene with blowing agent
Chemical Name : Expandable Polystyrene (EPS)
Chemical Formula : \((\text{C}_8 \cdot \text{H}_8)_n\)
Chemical Family : Thermoplastic Polymer
Product Use : Insulating material, packaging material
Manufacturer : Thai ABS Company Limited. (Subsidiary of IRPC)
299 Moo 5 Sukhumvit Road Amphur Muang Rayong Thailand
Emergency Call : +66(0) 38 802560
Website : www.irpc.co.th, www.irpcmarket.com

Section 2 – Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 (CLP) and GHS Classification
In use, may form flammable vapor-air mixture.

Pictograms : None
Signal word : None

Hazard Statements
EUH018 In use may form flammable vapor-air mixture

Precautionary Statements
P210 Keep away from heat, sparks, open flame, hot surfaces - No smoking
P233 Keep container tightly closed
P243: Take precautionary measures against static discharge.
P403 + P235: Store in a well-ventilated place. Keep cool.

Section 3 – Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Percent weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polystyrene</td>
<td>9003-53-6</td>
<td>Polymer</td>
<td>94-95</td>
</tr>
<tr>
<td>Pentane</td>
<td>109-66-0</td>
<td>203-692-4</td>
<td>5-6</td>
</tr>
<tr>
<td>Flame Retardant Additives</td>
<td>Proprietary</td>
<td>-</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Section 4 – First-aid Measures

General information : Clothing and shoes must be immediately removed, decontaminated
Skin Exposure : In case of skin contact with hot polymer immediately immerse in or flush with clean, cold water. If irritation develops, seek medical attention.
**Eyes Exposure**
Flush with water for at least 20 minutes. Seek medical attention if irritation persists.

**Inhalation**
Remove person to fresh air. Assist in breathing if necessary. Seek medical attention.

**Ingestion**
Seek medical attention if a significant amount is swallowed.

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**Section 5 – Fire-fighting Measures**

**Suitable extinguishing agents**
Dry chemicals, foam, water, carbon dioxide and halon. Do not use water jets for large fires.

**Hazards during fire-fighting**
Carbon monoxide, carbon dioxide.

**Protective equipment**
Wear self-contained respiratory protective device.

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**Section 6 – Accidental Release Measures**

**Personal precautions**
Avoid inhalation.

**Environmental precautions**
Discharge into the environment must be avoided.

**Cleanup**
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Sweep/shovel up or spray with water and collect in a suitable container. Allow molten material to solidify before disposal. Avoid production of dust.

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**Section 7 – Handling and Storage**

**Handling**
Ventilate for 5 min. when opening the container. Appropriate grounding is required. (Prevent against static electricity). Avoid inhalation of vapors.

**Storage conditions**
Keep separated from incompatible substances. Store in a tightly closed container in a cool (below 27 °C), dry place. Ventilation required.

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**Section 8 – Exposure Controls / Personal Protection**

**Exposure limits**

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Reference</th>
<th>TWA ppm</th>
<th>TWA mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentane</td>
<td>OSHA PEL</td>
<td>1000</td>
<td>2950</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV</td>
<td>600</td>
<td>-</td>
</tr>
</tbody>
</table>

**Exposure control**
Ventilation, enclosures, or other controls may be needed to keep airborne contaminates below exposure limits.

**Personal protective equipment**

**Respiratory protection**
Wear respiratory protection if ventilation is inadequate. Breathing protection device if dust is formed.

**Eye protection**
Chemical workers goggles recommended.

**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.

**Ventilation**
Provide adequate ventilation when processing material at elevated temperatures.
**Section 9 – Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Bead Form</td>
</tr>
<tr>
<td>Odor and Appearance</td>
<td>Bead with characteristic odor</td>
</tr>
<tr>
<td>Flash Point</td>
<td>345-360 °C</td>
</tr>
<tr>
<td>Softening Point</td>
<td>&gt; 100 °C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.04 (Water =1)</td>
</tr>
<tr>
<td>Percent Volatile (Vol %)</td>
<td>Nil</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility (Qualitative)</td>
<td>Soluble in non-polar solvents</td>
</tr>
</tbody>
</table>

**Section 10 – Stability and Reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable in ambient temperature.</td>
</tr>
<tr>
<td>Condition to Avoid</td>
<td>Heat, flames, sparks and other sources of ignition.</td>
</tr>
<tr>
<td>Material to Avoid</td>
<td>Avoid solvents and oxidizing agents.</td>
</tr>
<tr>
<td>Dangerous decomposition</td>
<td>Carbon monoxide, carbon dioxide, styrene.</td>
</tr>
</tbody>
</table>

**Section 11 – Toxicological Information**

**Acute Toxicity**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Route</th>
<th>Species</th>
<th>Acute Toxic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentane</td>
<td>Oral</td>
<td>Rat</td>
<td>LD$_{50}$ 5480 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>Rat</td>
<td>LC$_{50}$ 285 gm/m$^3$/4Hr</td>
</tr>
</tbody>
</table>

**Irritating/corrosive effects**

- **Eye Irritation**: Prolonged contact can cause eye irritation
- **Skin Irritation**: Prolonged contact can cause skin irritation
- **Respiratory Irritation**: May cause allergic respiratory response.
- **Ingestion Irritation**: Swallowing larger amounts may cause injury

**Section 12 – Ecological Information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity</td>
<td>No relevant studies identified.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>The product is not easily biodegradable.</td>
</tr>
<tr>
<td>Bio-accumulative potential</td>
<td>Insoluble in water. Not expected to be bio-accumulative.</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>No relevant studies identified.</td>
</tr>
<tr>
<td>Other adverse effects</td>
<td>Not expected to pose a significant ecological hazard.</td>
</tr>
</tbody>
</table>

**Section 13 – Disposal Considerations**

Transfer to an approved disposal area in accordance with national, state and local regulations. Recycling uncontaminated packaging recommended.
Package must be recycled in compliance with national legislation and environmental regulations.
### Section 14 – Transport Information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Classes</th>
<th>Packing group</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
<td></td>
</tr>
<tr>
<td>ADR / RID</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
<td></td>
</tr>
<tr>
<td>IMDG CODE</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
<td></td>
</tr>
<tr>
<td>ICAO / IATA</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
<td></td>
</tr>
</tbody>
</table>

### Section 15 – Regulatory Information

**US Toxic Substances Control Act**
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 29 CFR 1910.1200.

**HMIS - USA**
Health – 1, Flammability – 2, Reactivity – 0

**National Fire Protection Association - USA**
Health – 1, Flammability – 2, Reactivity – 0

**European Inventory of Existing Commercial Chemical Substances (EINECS)**
The components of this product are on the EINECS inventory or are exempt from inventory requirements.

**Canada – WHMIS**
Pentane has a WHMIS classification of B2.

### Section 16 – Other Information

- **DOT**: Department of Transportation
- **ADR**: European agreement concerning the international carriage of dangerous goods by road.
- **RID**: Regulations concerning the international carriage of dangerous goods by rail.
- **IMDG – CODE**: International maritime dangerous goods code
- **ICAO**: International Civil Aviation Organization
- **IATA**: International air transport association
- **GHS**: Globally Harmonized System of Classification and Labeling of Chemicals
OSHA : Occupational Safety and Health Administration
HMIS : Hazardous Materials Identification System
ACGIH : American Conference of Industrial Hygienists
WHMIS : Workplace Hazardous Materials Information System

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