SAFETY DATA SHEET

In according 3rd revision GHS

Revision Date : 9 August 2017

Section 1 – Identification

Product Name : 255E
Product Type : Flame Retardant
Product Use : Impregnant polystyrene with blowing agent
Manufacturer : IRPC Public Company Limited
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

Pictogram : Not Applicable
Signal Word : Not applicable

Hazard Statement :
EUH018 : In use may form flammable vapor-air mixture.

Precautionary Statement :
P210 : Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233 : Keep container tightly closed
P243 : Take precautionary measures against static discharge
P403+235 : 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

**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 without delay; if pain persists or recurs seek medical attention.

**Inhalation**: Remove person to fresh air. If symptoms persist, obtain medical advice.

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

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. Carbon monoxide, carbon dioxide.

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

Section 6 – Accidental Release Measures

**Personal precautions**: Avoid inhalation and direct contact.

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

**Cleanup**: Sweep/shovel up or spray with water and collect in a suitable container. Allow molten material to solidify before disposal. Avoid production of dust.

Section 7 – Handling and Storage

**Handling**: Ventilate for 5 minutes when opening the container. Appropriate grounding is required. (Prevent against static electricity).

**Storage conditions**: Keep separated from incompatible substances. Store in a tightly closed container in a cool (below 27 °C), dry place. Store away from sources of ignition and heat.
Section B – Exposure Controls / Personal Protection

Exposure limits:

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Reference</th>
<th>TWA ppm</th>
<th>TWA mg/m^3</th>
<th>STEL ppm</th>
<th>STEL mg/m^3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentane</td>
<td>ACGIH</td>
<td>600</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>OSHA</td>
<td>1000</td>
<td>2950</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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.
- **Other protective equipment**: Ensure that eyewash stations and safety showers are proximal to the work-station location.
- **Engineering Controls**: Provide mechanical ventilation; in general such ventilation should be provided at compounding/converting areas and at fabricating/filling work stations where the material is heated.
Section 9 – Physical and Chemical Properties

**Appearance** : Bead
**Odour** : Characteristic odor
**Boiling Point** : Not Applicable
**Flash Point** : 345 - 360°C
**Melting Point** : Not Applicable
**Vapour Pressure** : Not Applicable
**Auto ignition temperature** : Not Applicable
**Solubility** : Not Applicable
**Viscosity** : Not Applicable
**Upper/Lower flammability or explosive limit** : Not Applicable
**pH** : Not Applicable
**Relative density** : Not Applicable
**Specific Gravity** : 1.04 (Water = 1)
**Partition coefficient: n-octanol/water** : Not Applicable
**Decomposition temperature** : Not Applicable
**Explosive properties** : Not Applicable
**Softening Point** : > 100 °C

Section 10 – Stability and Reactivity

**Stability** : Stable under normal ambient temperature.
**Condition to Avoid** : Avoid heat, sparks, open flames and other ignition sources.
**Material to Avoid** : Avoid solvents and oxidizing agents.
**Dangerous decomposition** : Incomplete combustion will generate smoke, carbon dioxide and hazardous gases, including carbon monoxide.

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>Inhalation</td>
<td>Rat</td>
<td>LC50 285 g/m3/4H</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>Rat</td>
<td>LD50 5480 mg/kg</td>
</tr>
</tbody>
</table>

**Irritating/corrosive effects**

- **Eye Irritation** : Prolonged contact can causes eye irritation.
- **Skin Irritation** : Prolonged contact can cause skin irritation.
- **Inhalation** : May cause allergic respiratory response.
- **Ingestion** : Swallowing larger amounts may cause injury.
Section 12 – Ecological Information

**Eco-toxicity** : No relevant studies found.

**Persistence and degradability** : The product is not easily biodegradable.

**Bio-accumulative potential** : Insoluble in water. Not expected to be bio-accumulative.

**Mobility in soil** : No relevant studies identified.

**Other adverse effects** : Not expected to pose a significant ecological hazard.

Section 13 – Disposal Considerations

**Disposal methods:**

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><img src="label1.png" alt="Label" /></td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
</tr>
<tr>
<td>ADR/RID</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td><img src="label2.png" alt="Label" /></td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
</tr>
<tr>
<td>IMDG CODE</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td><img src="label3.png" alt="Label" /></td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
</tr>
<tr>
<td>ICAO/IATA</td>
<td>2211</td>
<td>9</td>
<td>III</td>
<td><img src="label4.png" alt="Label" /></td>
<td>POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor</td>
</tr>
</tbody>
</table>
Section 15 – Regulatory Information

**US Toxic Substances Control Act**
All components of this product are on the TSCA Inventory.

**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**
This product has a WHMIS classification of B2

**NFPA – USA**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

**HMIS**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Section 16 – Other Information

<table>
<thead>
<tr>
<th>ADR</th>
<th>European agreement concerning the international carriage of dangerous goods by road.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RID</td>
<td>Regulations concerning the international carriage of dangerous goods by rail.</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>IMDG-CODE</td>
<td>International maritime dangerous goods code</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IATA</td>
<td>International air transport association</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification and Labeling of Packaging</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System of Classification and Labeling of Chemicals</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Industrial Hygienists</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose, 50%</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration, 50%</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Materials Identification System</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
</tbody>
</table>

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