High Impact Polystyrene (HIPS)

HIPS has good dimensional strength, balanced properties of impact strength and good heat resistance. HIPS can be easily machined and is relatively low cost and because of its good impact strength at low temperatures, it is typically used for home appliances, toys, and electrical components.

**Technical Specification**

<table>
<thead>
<tr>
<th>Properties</th>
<th>ISO Test Method</th>
<th>Unit</th>
<th>Base</th>
<th>Capping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>ISO 1183</td>
<td>g/cm³</td>
<td>1.05</td>
<td>1.05</td>
</tr>
<tr>
<td>Izod Impact Strength (notched)</td>
<td>ISO 180</td>
<td>J/m</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>ISO 178</td>
<td>Mpa</td>
<td>42</td>
<td>90</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ISO 527</td>
<td>Mpa</td>
<td>26</td>
<td>-</td>
</tr>
<tr>
<td>Falling Dart Impact Strength²</td>
<td>ISO 6603-1</td>
<td>J</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Vicat Softening Temperature</td>
<td>ISO 306a</td>
<td>°C</td>
<td>95</td>
<td>92</td>
</tr>
<tr>
<td>Heat Deflection Temperature</td>
<td>ISO 75a</td>
<td>°C</td>
<td>81</td>
<td>76</td>
</tr>
<tr>
<td>Flammability Rating</td>
<td>UL 94</td>
<td>-</td>
<td>HB</td>
<td>HB</td>
</tr>
</tbody>
</table>

¹Property evaluations on injection moulded unpigmented material. ²4.0mm unpigmented extruded sheet. ³Density values vary with pigmentation.

**Acrylic Capped ABS Sheet Material Safety Data Sheet**

**Physical Properties**
- Nature of material – solid
- Physical form - flat sheet
- Appearance - sheet smooth or embossed.
- Molecular weight - variable.
- Odour - characteristic.
- Melting point 80°C.
- Insoluble in water.

**Fire & Explosion Data**
Auto ignition temp. - 450°C, Flash point - 350°C. Fire and explosion hazards - Formation of toxic fumes & styrene & butadiene monomer in trace quantities.

**Ingredients**
Pigments (non hazardous) 4% max, Additives (non hazardous) 10% max, Graft polymer of styrene on a dienic unsaturated rubber CAS #009003-55-8 90%

**Health Effects Data**
Effects of inhalation; fumes from thermal decomposition and dust generated from machining may cause temporary breathing difficulties. Effects of ingestion - non toxic. Eye contact; Fumes or dust may cause irritation. Skin contact; hot material may cause burns.

**Emergency Procedures**
Spillage; lift spillage mechanically.

**First Aid**
First aid for inhalation; remove victim to fresh air, seek medical attention if symptoms persist. First Aid for ingestion; seek medical attention if symptoms develop. First Aid for eye contact- flush eye with water. First Aid for skin contact- cool burns with water, seek medical attention for removal of molten material.

**Protective Clothing / Control Measures**
Respiratory protection; Dust masks should be available. Eye protection - use safety glasses. Thermal gloves and protective clothing should be worn. Ventilation requirements - good local and adequate general ventilation should be ensured.

**Waste Disposal**
Controlled waste; No. Preferred disposal method – incineration or sanitary landfill, regarding local legal requirements.

**Ecological Hazards**
Water hazard; no ecological hazard. Land hazard – no hazard.

**Transport**
Special requirements- none. Labelling – (not dangerous).