# ABS Sheet Solutions

## Key Characteristics

**Product description**

ABS (Acrylonitrile Butadiene Styrene) sheet is the industry’s most versatile sheet material. ABS plastic sheet provides a balanced combination of mechanical toughness and impact resistance with an ease of thermoforming and fabrication. PolyOne offers a full range of single-layer and co-extruded multilayer ABS sheet products.

**Premium ABS SP-9020** - Exact resin blends are precisely controlled to achieve gloss, impact and total conformance to customer specifications. SP-9020 is manufactured from 100% virgin resin. SP-9020 has high impact and improved low temperature impact.

**General Purpose ABS SP-9010** - Is a high impact ABS sheet. Custom manufactured to meet customer size, gauge, color and finish requirements. ABS SP-9010 is also offered in a range of standard gauges in 48” x 96” sheet through our distributor stock sheet program.

**Utility ABS SP-9035** – Is a medium impact ABS sheet, which provides good physical properties at an economic price. Color capped material with a “field-of-color” substrate. Utility ABS typically contains post industrial recycled ABS content.

**Low Gloss ABS SP-9050** – Is a high impact ABS sheet capped with a low gloss ABS resin.

## Technical Properties

### Typical Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST METHOD</th>
<th>UNITS</th>
<th>PREMIUM SP-9020</th>
<th>GENERAL PURPOSE SP-9010</th>
<th>UTILITY SP-9035</th>
<th>LOW GLOSS SP-9050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>D-792</td>
<td></td>
<td>1.08</td>
<td>1.08</td>
<td>1.08</td>
<td>1.08</td>
</tr>
<tr>
<td>Tensile modulus</td>
<td>D-638</td>
<td>psi</td>
<td>310,000</td>
<td>310,000</td>
<td>290,000</td>
<td>280,000</td>
</tr>
<tr>
<td>Tensile strength @ yield</td>
<td>D-638</td>
<td>psi</td>
<td>5,400</td>
<td>6,000</td>
<td>4,500</td>
<td>4,500</td>
</tr>
<tr>
<td>Flexural modulus</td>
<td>D-790</td>
<td>psi</td>
<td>310,000</td>
<td>340,000</td>
<td>310,000</td>
<td>290,000</td>
</tr>
<tr>
<td>Flexural strength @ yield</td>
<td>D-790</td>
<td>psi</td>
<td>9,600</td>
<td>10,000</td>
<td>8,000</td>
<td>9,000</td>
</tr>
<tr>
<td>Izon impace (notched)</td>
<td>D-256</td>
<td>ft-lbs/in</td>
<td>8.0</td>
<td>7.5</td>
<td>5.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Heat deflection temperature</td>
<td>D-648</td>
<td>°F</td>
<td>198</td>
<td>195</td>
<td>190</td>
<td>195</td>
</tr>
<tr>
<td>Coefficient of thermal expansion</td>
<td>D-696</td>
<td>in/in°F x 10^-5</td>
<td>4.2-5.6</td>
<td>4.2-5.6</td>
<td>4.2-5.6</td>
<td>4.2-5.6</td>
</tr>
<tr>
<td>Hardness</td>
<td>D-785</td>
<td>Rockwell R</td>
<td>96</td>
<td>98</td>
<td>95</td>
<td>81</td>
</tr>
<tr>
<td>Gardner Gloss, 60°</td>
<td>D-523</td>
<td>%</td>
<td>90</td>
<td>90</td>
<td>95</td>
<td>16</td>
</tr>
<tr>
<td>Mold Shrinkage</td>
<td></td>
<td>in/in</td>
<td>0.005-0.007</td>
<td>0.005-0.007</td>
<td>0.005-0.007</td>
<td>0.005-0.007</td>
</tr>
<tr>
<td>Flammability Ratings</td>
<td>MVSS 302</td>
<td></td>
<td>Passes</td>
<td>Passes</td>
<td>Passes</td>
<td>Passes</td>
</tr>
</tbody>
</table>
ABS Sheet Solutions

Processing

**Finishing** – Our ABS sheet solutions can be fabricated by using standard techniques such as drilling, routing, and cutting with a die, laser or water jet. Mechanical screws and other type of fasteners can be used. ABS sheet can be easily twin sheeted to provide part functionality and superior rigidity.

Availability

**Custom Sheet** - PolyOne ABS sheet solutions are custom extruded sheet products manufactured to your requirements.

- **Sheet Size** – maximum width is 120”
- **Gauges** – 0.020”-0.375”
- **Minimum order** – 5,000 lbs.

**Stock Sheet** - General Purpose ABS SP-9010 stock sheet is available for next day service at both our Evanston, Ill., and La Mirada, Calif., facilities.

- **Standard gauges (black):** Black - 0.056", 0.090", 0.118", 0.177” and 0.236”
- **Standard gauges (white):** White - 0.090", 0.118", 0.177” and 0.236”
- **Standard sheet size:** 48” x 96”
- **Surface Finish:** Haircell one side, smooth reverse
- **Color:** Standard Black or Standard White

**Minimum Order:** One pallet

COLORS & TEXTURES

PolyOne ABS sheet solutions can be color matched to meet your specifications.

Available textures – Smooth, Matte, Level Haircell, Deep Haircell, Calf Grain, Seville, ECL-1. Additional textures are available with restrictions - contact us for details.

WEATHERABLE ABS

ABS sheet solutions are not inherently weatherable long term. However, a weatherable cap can be laminated or co-extruded on ABS providing UV and chemical protection. PolyOne offers a full line of weatherable ABS products. These products are used in a variety of outdoor applications as well as in the sanitary ware industry.

CONTACT INFORMATION

For additional information, please contact PolyOne Designed Structures and Solutions at (888) 721-4242 or visit our web site at [www.dss.polyone.com](http://www.dss.polyone.com).

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