Alathon H5220 Technical Data Sheet

High Density Polyethylene

**Product Description**
Alathon H5220 provides easy processing characteristics and exhibits excellent toughness properties and color as well as low odor and good processing stability. Typical applications include housewares, containers, caps and closures.

**Regulatory Status**
For regulatory compliance information, see Alathon H5220 Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

<table>
<thead>
<tr>
<th>Status</th>
<th>Commercial: Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>North America</td>
</tr>
<tr>
<td>Application</td>
<td>Caps &amp; Closures; Containers; Housewares</td>
</tr>
<tr>
<td>Market</td>
<td>Rigid Packaging</td>
</tr>
<tr>
<td>Processing Method</td>
<td>Injection Molding</td>
</tr>
</tbody>
</table>

### Typical Properties

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th>Nominal Value</th>
<th>English Units</th>
<th>Nominal Value</th>
<th>SI Units</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melt Flow Rate, (190 °C/2.16 kg)</td>
<td>20</td>
<td>g/10 min</td>
<td>20</td>
<td>g/10 min</td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>Density, (23 °C)</td>
<td>0.952</td>
<td>g/cm³</td>
<td>0.952</td>
<td>g/cm³</td>
<td>ASTM D1505</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>37-39</td>
<td>lb/ft³</td>
<td>593-625</td>
<td>kg/m³</td>
<td>ASTM D1895</td>
</tr>
<tr>
<td>Spiral Flow</td>
<td>11.6</td>
<td>in</td>
<td>29.4</td>
<td>cm</td>
<td>LYB Method</td>
</tr>
</tbody>
</table>

**Mechanical**

- Flexural Modulus
  - (1% Secant) 167000 psi, 1150 MPa, ASTM D790
  - (2% Secant) 139000 psi, 958 MPa, ASTM D790
- Flexural Young's Modulus 191000 psi, 1320 MPa, ASTM D790
- Tensile Modulus, (1% Secant) 152000 psi, 1050 MPa, ASTM D638
- Tensile Young's Modulus 198000 psi, 1370 MPa, ASTM D638
- Tensile Stress at Break, (23 °C) 3040 psi, 21.0 MPa, ASTM D638
- Tensile Stress at Yield, (23 °C) 3730 psi, 25.7 MPa, ASTM D638
- Tensile Elongation at Break, (23 °C) 34 %, 34 %, ASTM D638
- Tensile Elongation at Yield, (23 °C) 10 %, 10 %, ASTM D638

**Impact**
- Notched Izod Impact Strength, (23 °C) 0.73 ft-lb/in, 39 J/m, ASTM D256
- Unnotched Impact Strength, (-18 °C) No Break, No Break, ASTM D4812

**Hardness**
- Shore Hardness, (Shore D, max) 69, ASTM D2240

**Thermal**
- Vicat Softening Temperature 255 ºF, 124 ºC, ASTM D1525
- Low Temperature Brittleness, Fₜ₀ -103 ºF, -75 ºC, ASTM D746
- Deflection Temperature Under Load, (66 psi, Unannealed) 156 ºF, 69 ºC, ASTM D648
- Melting Temperature 263.1 ºF, 128.4 ºC, ASTM D3418

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Technical Data Sheet
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Notes

Conditions of Tensile Stress and Elongation values are: 50 mm/min, Type IV specimen.

Conditions of Flexural Modulus values are: 0.5 inches/min or 12.5 mm/min.

Conditions of Tensile Modulus values are: 50 mm/min, Type I Specimen.

Spiral Flow measures the number of inches of flow produced when molten resin is injected into a long, spiral channel (0.0625" insert), at a constant injection pressure of 1000 psi with a melt temperature of 440 °F.

Deflection Temperature Under Load and Low Temperature Britteness data are for control and development work and are not intended for use in design or predicting performance at elevated or sub-ambient temperatures.

These are typical property values not to be construed as specification limits.

Processing Techniques

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

Company Information

For further information regarding the LyondellBasell company, please visit [http://www.lyb.com/](http://www.lyb.com/).

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