Technical Data Sheet

Alathon H5112

High Density Polyethylene

Product Description

Alathon H5112 is a medium-molecular-weight-distribution resin with balanced impact/ESCR and high flow characteristics. Typical applications include housewares, food containers, pail handles and toys.

Regulatory Status

For regulatory compliance information, see Alathon H5112 Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

Status

Commercial: Active

Availability

North America

Application

Caps & Closures; Containers; Housewares; Sports, Leisure & Toys

Market

Rigid Packaging

Processing Method

Injection Molding

Typical Properties

<table>
<thead>
<tr>
<th>Property</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>12</td>
<td>g/10 min</td>
<td>12</td>
<td>g/10 min</td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>Density, (23 °C)</td>
<td>0.951</td>
<td>g/cm³</td>
<td>0.951</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>13.8</td>
<td>in</td>
<td>35.1</td>
<td>cm</td>
<td>LYB Method</td>
</tr>
</tbody>
</table>

Mechanical

Flexural Modulus

(1% Secant) 158000 psi 1090 MPa ASTM D790
(2% Secant) 132000 psi 910 MPa ASTM D790

Flexural Young's Modulus 170000 psi 1170 MPa ASTM D790

Tensile Modulus, (1% Secant) 106000 psi 730 MPa ASTM D638

Tensile Young's Modulus 128000 psi 883 MPa ASTM D638

Tensile Stress at Break, (23 °C) 3830 psi 26.4 MPa ASTM D638

Tensile Elongation at Break, (23 °C) 11 % 11 % ASTM D638

Impact

Notched Izod Impact Strength, (23 °C) 0.56 ft-lb/in 30 J/m ASTM D256

Unnotched Impact Strength, (-18 °C) No Break No Break ASTM D4812

Hardness

Shore Hardness, (Shore D, max) 71 71 ASTM D2240

Thermal

Vicat Softening Temperature 255 °F 124 °C ASTM D1525

Low Temperature Britleness, \( F_{\text{so}} \) <-105 °F <-76 °C ASTM D746

Deflection Temperature Under Load, (66 psi, Unannealed) 157 °F 70 °C ASTM D648

Melting Temperature 262.8 °F 128.2 °C ASTM D3418

Crystallization Temperature 237.6 °F 114.2 °C ASTM D3418
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 Brittleness 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/.

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