Technical Data Sheet

Alathon H5057

High Density Polyethylene

Product Description

Alathon H5057 is a multi-purpose high-flow resin that exhibits enhanced low temperature impact performance, enhanced processing and thermal stability for fast cycling in multi-cavity stack molds, good color and organoleptic properties. Typical applications are rigid food containers such as cultured dairy product containers, margarine tubs, butter tubs, small frozen food containers and promotional drink cups.

Regulatory Status

For regulatory compliance information, see Alathon H5057 Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

Status

Commercial: Active

Availability

North America

Application

TWIM Food Containers

Market

Rigid Packaging

Processing Method

Injection Molding

Typical Properties

<table>
<thead>
<tr>
<th>Physical</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>57</td>
<td>g/10 min</td>
<td>57</td>
<td>g/10 min</td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>Density, (23 °C)</td>
<td>0.948</td>
<td>g/cm³</td>
<td>0.948</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>21.2</td>
<td>in</td>
<td>53.8</td>
<td>cm</td>
<td>LYB Method</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Flexural Modulus</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>(1% Secant)</td>
<td>141000</td>
<td>psi</td>
<td>972</td>
<td>MPa</td>
<td>ASTM D790</td>
</tr>
<tr>
<td>(2% Secant)</td>
<td>119000</td>
<td>psi</td>
<td>820</td>
<td>MPa</td>
<td>ASTM D790</td>
</tr>
<tr>
<td>Flexural Young's Modulus</td>
<td>152000</td>
<td>psi</td>
<td>1050</td>
<td>MPa</td>
<td>ASTM D790</td>
</tr>
<tr>
<td>Tensile Modulus, (1% Secant)</td>
<td>96000</td>
<td>psi</td>
<td>683</td>
<td>MPa</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Tensile Young's Modulus</td>
<td>115000</td>
<td>psi</td>
<td>795</td>
<td>MPa</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Tensile Stress at Break, (23 °C)</td>
<td>2760</td>
<td>psi</td>
<td>19</td>
<td>MPa</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Tensile Elongation at Break, (23 °C)</td>
<td>4.1</td>
<td>%</td>
<td>4.1</td>
<td>%</td>
<td>ASTM D638</td>
</tr>
</tbody>
</table>

Impact

| Notched Izod Impact Strength, (23 °C) | 0.4 | ft-lb/in | 21 | J/m | ASTM D256 |
| Unnotched Impact Strength, (-18 °C) | 6.1 | ft-lb/in | 330 | J/m | ASTM D4812 |

Hardness

| Shore Hardness, (Shore D, max) | 69 | 69 | ASTM D2240 |

Thermal

| Vicat Softening Temperature | 244 | °F | 118 | °C | ASTM D1525 |
| Deflection Temperature Under Load, (66 psi, Unannealed) | 148 | °F | 64 | °C | ASTM D648 |
| Melting Temperature | 259.2 | °F | 126.2 | °C | ASTM D3418 |
| Crystallization Temperature | 236.0 | °F | 113.4 | °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 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/.

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