INTREPID™ 2499 NT
Bimodal Polyethylene Resin

Overview
INTREPID™ 2499 NT Bimodal Polyethylene Resin is a Polyethylene resin produced using UNIPOL II process technology. This product is intended for use in industrial piping systems where extreme conditions such as high temperatures, aggressive chemicals, hydrocarbons, or highly oxidative conditions exist. Suitable uses include oil and gas field pipelines, gas distribution pipelines, and other industrial applications.

Industrial Standards Compliance:
ASTM D 3350: cell classification PE445574A
Plastics Pipe Institute (PPI): TR-4
  • Natural Pipe INTREPID™ 2499 NT Bimodal Polyethylene Resin
    • ASTM PE4710 pipe grade - 1600psi HDB @ 73 °F (23 °C)
    • ASTM PE4710 pipe grade - 800psi HDB @ 180 °F (82.2 °C)

Additive
Antblock: No
Slip: No
Processing Aid: Yes

Physical

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value (Natural)</th>
<th>Nominal Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>0.950 g/cm³</td>
<td>0.950 g/cm³</td>
<td>ASTM D792</td>
</tr>
<tr>
<td>Melt Mass-Flow Rate</td>
<td></td>
<td></td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>190°C/2.16 kg</td>
<td>0.10 g/10 min</td>
<td>0.10 g/10 min</td>
<td></td>
</tr>
<tr>
<td>190°C/21.6 kg</td>
<td>7.0 g/10 min</td>
<td>7.0 g/10 min</td>
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</table>

Mechanical

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength (Yield)</td>
<td>&gt; 3500 psi</td>
<td>&gt; 24.1 MPa</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Tensile Elongation (Break)</td>
<td>&gt; 500 %</td>
<td>&gt; 500 %</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Flexural Modulus</td>
<td>152000 psi</td>
<td>1050 MPa</td>
<td>ASTM D790B</td>
</tr>
<tr>
<td>Resistance to Rapid Crack Propagation, Pc - S-4</td>
<td>&gt; 174 psi</td>
<td>&gt; 12.0 bar</td>
<td>ISO 13477</td>
</tr>
<tr>
<td>Resistance to Rapid Crack Propagation, Tc - S-4 @ 145 psi (10 bar)</td>
<td>&lt; 2 °F</td>
<td>&lt; -17 °C</td>
<td>ISO 13477</td>
</tr>
<tr>
<td>Slow Crack Growth PENT - @ 2.4 MPa</td>
<td></td>
<td></td>
<td>ASTM F1473</td>
</tr>
<tr>
<td>176°F (80°C)</td>
<td>&gt; 10000 hr</td>
<td>&gt; 10000 hr</td>
<td></td>
</tr>
<tr>
<td>194°F (90°C)</td>
<td>&gt; 10000 hr</td>
<td>&gt; 10000 hr</td>
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</table>

Impact

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<thead>
<tr>
<th>Property</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
<th>Test Method</th>
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</thead>
<tbody>
<tr>
<td>Notched Izod Impact (73°F (23°C))</td>
<td>9.1 ft lb/in</td>
<td>460 J/m</td>
<td>ASTM D256A</td>
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</tbody>
</table>

Thermal

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value (English)</th>
<th>Nominal Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Britteness Temperature</td>
<td>&lt;-103 °F</td>
<td>&lt;-75.0 °C</td>
<td>ASTM D746A</td>
</tr>
<tr>
<td>Melting Temperature (DSC)</td>
<td>269 °F</td>
<td>132 °C</td>
<td>Dow Method</td>
</tr>
<tr>
<td>Thermal Stability</td>
<td>&gt; 428 °F</td>
<td>&gt; 220 °C</td>
<td>ASTM D3350</td>
</tr>
</tbody>
</table>

Extrusion Notes

Fabrication Conditions:
• Screw Type: High quality HDPE barrier with mixing
• Melt Temperature Range: 380-450°F (193-232°C)

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

1 Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time.

2 Method I (3 point load)

3 Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.
High Density Polyethylene (HDPE) Piping Installations

Appendix A - INTREPID 2499 NT Technical Information

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