Trilliant™ HC HC6200-5001 XR Grey Polyamide 12

Key Characteristics

Product Description
The Trilliant® specialty compounds offer a complete system of specially engineered materials, certified processes, services and technical support that enable healthcare OEM's to get to market ahead of competition. When specified, Trilliant® compound may incorporate agency rated materials that meet USP Class IV, FDA or ISO 10993 testing requirements. This Trilliant® grade is a high density specialty compound featuring a sustainable material solution for radiation shielding and weighting & balancing applications. The composite material offers a high performance thermoplastic-based alternative to lead. This compound has densities similar to traditional metals and provides greater flexibility in design and processing.

General
Material Status
• Commercial: Active
Regional Availability
• Africa & Middle East
• Asia Pacific
• Europe
• Latin America
• North America
Features
• High Specific Gravity
• Non-Toxic
Uses
• Housings
• Medical/Healthcare Applications
• Radiation Shielding
• Weighting & Balancing
Appearance
• Grey
Forms
• Pellets
Processing Method
• Injection Molding

Technical Properties

<table>
<thead>
<tr>
<th>Physical</th>
<th>Typical Value (English)</th>
<th>Typical Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>11.0 g/cm³</td>
<td>11.0 g/cm³</td>
<td>ISO 1183</td>
</tr>
<tr>
<td>Molding Shrinkage</td>
<td>0.40 to 0.80 %</td>
<td>0.40 to 0.80 %</td>
<td>ISO 294-4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Typical Value (English)</th>
<th>Typical Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Modulus</td>
<td>1.29E+6 psi</td>
<td>8900 MPa</td>
<td>ISO 527-2/1</td>
</tr>
<tr>
<td>Tensile Stress (Break)</td>
<td>5800 psi</td>
<td>40.0 MPa</td>
<td>ISO 527-2/50</td>
</tr>
<tr>
<td>Tensile Strain (Break)</td>
<td>0.50 to 1.0 %</td>
<td>0.50 to 1.0 %</td>
<td>ISO 527-2/50</td>
</tr>
<tr>
<td>Flexural Modulus</td>
<td>1.35E+6 psi</td>
<td>9300 MPa</td>
<td>ISO 178</td>
</tr>
<tr>
<td>Flexural Stress</td>
<td>9430 psi</td>
<td>65.0 MPa</td>
<td>ISO 178</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact</th>
<th>Typical Value (English)</th>
<th>Typical Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charpy Notched Impact Strength</td>
<td>2.4 ft·lb/in²</td>
<td>5.0 kJ/m²</td>
<td>ISO 179</td>
</tr>
<tr>
<td>Charpy Unnotched Impact Strength</td>
<td>4.8 ft·lb/in²</td>
<td>10 kJ/m²</td>
<td>ISO 179</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thermal</th>
<th>Typical Value (English)</th>
<th>Typical Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Deflection Temperature</td>
<td>66 psi (0.45 MPa), Unannealed</td>
<td>320 °F</td>
<td>160 °C</td>
</tr>
<tr>
<td>Heat Deflection Temperature</td>
<td>264 psi (1.8 MPa), Unannealed</td>
<td>266 °F</td>
<td>130 °C</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>21 to 24 Btu·in/hr/ft²/°F</td>
<td>3.0 to 3.5 W/m/K</td>
<td>ASTM E1461</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical</th>
<th>Typical Value (English)</th>
<th>Typical Value (SI)</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Resistivity</td>
<td>&lt; 1.0E+3 ohms</td>
<td>&lt; 1.0E+3 ohms</td>
<td>IEC 60093</td>
</tr>
</tbody>
</table>

Additional Information
Shielding properties:
Attenuation coefficient at 511 keV = 0.94cm-1
Half Thickness at 511 keV = 0.74cm

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Trilliant™ HC HC6200-5001 XR Grey

Technical Data Sheet

Processing Information

<table>
<thead>
<tr>
<th></th>
<th>Typical Value (English)</th>
<th>Typical Value (SI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drying Temperature</td>
<td>176 °F</td>
<td>80 °C</td>
</tr>
<tr>
<td>Drying Time</td>
<td>4.0 hr</td>
<td>4.0 hr</td>
</tr>
<tr>
<td>Processing (Melt) Temp</td>
<td>482 to 536 °F</td>
<td>250 to 280 °C</td>
</tr>
<tr>
<td>Mold Temperature</td>
<td>149 to 212 °F</td>
<td>65 to 100 °C</td>
</tr>
</tbody>
</table>

Notes
1 Typical values are not to be construed as specifications.
2 Through Plane

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