



# Trilliant™ HC HC6200-5001 XR Grey

## Polyamide 12

### Key Characteristics

#### Product Description

The Trilliant® specialty compounds offer a complete system of specialty 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 <sup>1</sup>

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	11.0 g/cm <sup>3</sup>	11.0 g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage	0.40 to 0.80 %	0.40 to 0.80 %	ISO 294-4
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus	1.29E+6 psi	8900 MPa	ISO 527-2/1
Tensile Stress (Break)	5800 psi	40.0 MPa	ISO 527-2/50
Tensile Strain (Break)	0.50 to 1.0 %	0.50 to 1.0 %	ISO 527-2/50
Flexural Modulus	1.35E+6 psi	9300 MPa	ISO 178
Flexural Stress	9430 psi	65.0 MPa	ISO 178
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Charpy Notched Impact Strength	2.4 ft·lb/in <sup>2</sup>	5.0 kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength	4.8 ft·lb/in <sup>2</sup>	10 kJ/m <sup>2</sup>	ISO 179
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Heat Deflection Temperature 66 psi (0.45 MPa), Unannealed	320 °F	160 °C	ISO 75-2/B
Heat Deflection Temperature 264 psi (1.8 MPa), Unannealed	266 °F	130 °C	ISO 75-2/A
Thermal Conductivity <sup>2</sup>	21 to 24 Btu·in/hr/ft <sup>2</sup> /°F	3.0 to 3.5 W/m/K	ASTM E1461
Electrical	Typical Value (English)	Typical Value (SI)	Test Method
Surface Resistivity	< 1.0E+3 ohms	< 1.0E+3 ohms	IEC 60093

#### Additional Information

Shielding properties:

Attenuation coefficient at 511 keV = 0.94cm<sup>-1</sup>

Half Thickness at 511 keV = 0.74cm

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## Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	176 °F	80 °C
Drying Time	4.0 hr	4.0 hr
Processing (Melt) Temp	482 to 536 °F	250 to 280 °C
Mold Temperature	149 to 212 °F	65 to 100 °C

## Notes

<sup>1</sup> Typical values are not to be construed as specifications.

<sup>2</sup> Through Plane

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