



Gravi-Tech™ GRV-NP-110-W-NAT

Polyamide 12

Key Characteristics

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Additive	• Impact Modifier		
Features	• High Density	• Impact Modified	• Non-Toxic
Uses	• Industrial Applications • Medical/Healthcare Applications	• Projectiles • Radiation Shielding	• Sporting Goods • Weighting & Balancing
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

Technical Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Specific Gravity	11.0	11.0	ASTM D792
Molding Shrinkage - Flow	4.0E-3 to 6.0E-3 in/in	0.40 to 0.60 %	ASTM D955
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus ²	1.20E+6 psi	8270 MPa	ASTM D638
Tensile Strength ² (Yield)	3950 psi	27.2 MPa	ASTM D638
Tensile Elongation ² (Break)	1.8 %	1.8 %	ASTM D638
Flexural Modulus	800000 psi	5520 MPa	ASTM D790
Flexural Strength	7000 psi	48.3 MPa	ASTM D790
Poisson's Ratio	0.35	0.35	ASTM E132
Impact	Typical Value (English)	Typical Value (SI)	Test Method
Notched Izod Impact 73°F (23°C), 0.125 in (3.18 mm), Injection Molded	2.1 ft-lb/in	110 J/m	ASTM D256A
Unnotched Izod Impact 73°F (23°C), 0.125 in (3.18 mm), Injection Molded	7.0 ft-lb/in	370 J/m	ASTM D256
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load 66 psi (0.45 MPa), Unannealed, 0.250 in (6.35 mm)	280 °F	138 °C	ASTM D648
Deflection Temperature Under Load 264 psi (1.8 MPa), Unannealed, 0.250 in (6.35 mm)	190 °F	87.8 °C	ASTM D648
CLTE - Flow 32 to 90°F (0 to 32°C) 140 to 212°F (60 to 100°C)	3.5E-5 in/in/°F 5.6E-5 in/in/°F	6.3E-5 cm/cm/°C 1.0E-4 cm/cm/°C	ASTM E831
CLTE - Transverse 32 to 90°F (0 to 32°C) 140 to 212°F (60 to 100°C)	3.2E-5 in/in/°F 4.7E-5 in/in/°F	5.7E-5 cm/cm/°C 8.4E-5 cm/cm/°C	ASTM E831
Thermal Conductivity ³	24 Btu·in/hr/ft ² /°F	3.5 W/m/K	ASTM C177

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Electrical	Typical Value (English)	Typical Value (SI)	Test Method
Surface Resistivity (0.125 in (3.18 mm))	10 to 1.0E+3 ohms	10 to 1.0E+3 ohms	ASTM D257
Volume Resistivity (0.125 in (3.18 mm))	10 to 1.0E+3 ohms·cm	10 to 1.0E+3 ohms·cm	ASTM D257

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	175 °F	79.4 °C
Drying Time	4.0 hr	4.0 hr
Processing (Melt) Temp	500 to 550 °F	260 to 288 °C
Mold Temperature	180 to 300 °F	82.2 to 149 °C

Notes

¹ Typical values are not to be construed as specifications.

² Type I, 0.20 in/min (5.1 mm/min)

³ The value listed as thermal conductivity, ASTM C177, was tested in accordance with ASTM E1461.

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