SABIC Innovative Plastics ValoxÂ® 4012G PBT

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT)

Material Notes:

VALOX 4012G is a 10% glass fiber reinforced PBT injection molding resin with excellent mechanical properties. Applications: connectors.

This grade is a 4012 with improved cycle time and ductility.

Order this product through the following link:
http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-4012G-PBT.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.39 g/cc	1.39 g/cc	ASTM D792
Density	1.39 g/cc	0.0502 lb/inÂ³	ISO 1183
Moisture Absorption	0.0700 %	0.0700 %	23Â°C / 50% RH; ISO 62
Water Absorption at Saturation	0.20 %	0.20 %	ISO 62
Linear Mold Shrinkage, Flow	0.0060 - 0.0090 cm/cm	0.0060 - 0.0090 in/in	on Tensile Bar; SABIC Method
	0.0060 - 0.016 cm/cm @Thickness 3.20 mm	0.0060 - 0.016 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0070 - 0.010 cm/cm	0.0070 - 0.010 in/in	on Tensile Bar; SABIC Method
Melt Flow	10 g/10 min @Load 1.20 kg, Temperature 250 Â°C	10 g/10 min @Load 2.65 lb, Temperature 482 Â°F	ASTM D1238
Melt Index of Compound	9.0 g/10 min @Load 1.20 kg, Temperature 250 Â°C	9.0 g/10 min @Load 2.65 lb, Temperature 482 Â°F	MVR [cm^3/10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	117 MPa	17000 psi	ISO 2039-1
Tensile Strength at Break	72.0 MPa	10400 psi	5 mm/min; ISO 527
	75.0 MPa	10900 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	72.0 MPa	10400 psi	5 mm/min; ISO 527
	75.0 MPa	10900 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
	4.0 %	4.0 %	5 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
Elongation at Yield	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
	4.0 %	4.0 %	5 mm/min; ISO 527
Tensile Modulus	4.50 GPa	653 ksi	1 mm/min; ISO 527
	4.60 GPa	667 ksi	5 mm/min; ASTM D638
Flexural Strength	110 MPa	16000 psi	2 mm/min; ISO 178
Flexural Yield Strength	110 MPa	16000 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	3.50 GPa	508 ksi	2 mm/min; ISO 178
	3.94 GPa	571 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.740 J/cm	1.39 ft-lb/in	ASTM D256
	0.740 J/cm @Temperature -30.0 Â°C	1.39 ft-lb/in @Temperature -22.0 Â°F	ASTM D256
Izod Impact, Notched (ISO)	6.00 kJ/mÂ²	2.86 ft-lb/inÂ²	80*10*4; ISO 180/1A
	6.00 kJ/mÂ² @Temperature -30.0 Â°C	2.86 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	37.0 kJ/mÂ²	17.6 ft-lb/inÂ²	80*10*4; ISO 180/1U
	37.0 kJ/mÂ² @Temperature -30.0 Â°C	17.6 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	4.50 J/cmÂ²	21.4 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	4.50 J/cmÂ² @Temperature -30.0 Â°C	21.4 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.700 J/cmÂ²	3.33 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.600 J/cmÂ² @Temperature -30.0 Â°C	2.86 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	4.00 J @Temperature 23.0 Â°C	2.95 ft-lb @Temperature 73.4 Â°F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	60.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	33.3 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	60.0 Âµm/m-Â°C @Temperature 23.0 - 80.0 Â°C	33.3 Âµin/in-Â°F @Temperature 73.4 - 176 Â°F	ISO 11359-2
CTE, linear, Transverse to Flow	80.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	44.4 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	80.0 Âµm/m-Â°C @Temperature 23.0 - 80.0 Â°C	44.4 Âµin/in-Â°F @Temperature 73.4 - 176 Â°F	ISO 11359-2
	85.0 Âµm/m-Â°C @Temperature 23.0 - 150 Â°C	47.2 Âµin/in-Â°F @Temperature 73.4 - 302 Â°F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	215 Â°C	419 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Be
Deflection Temperature at 1.8 MPa (264 psi)	170 Â°C	338 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	175 Â°C @Thickness 3.20 mm	347 Â°F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	205 Â°C	401 Â°F	Rate B/50; ASTM D1525
	205 Â°C	401 Â°F	Rate B/50; ISO 306
	208 Â°C	406 Â°F	Rate B/120; ISO 306
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	UL 94 by SABIC-IP
Glow Wire Test	750 Â°C @Thickness 1.00 mm	1380 Â°F @Thickness 0.0394 in	IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	3.0 @Frequency 1.00e+6	3.0 @Frequency 1.00e+6	IEC 60250

Electrical Properties	Metric	English	Comments
	3.1 @Frequency 50.0 - 60.0 Hz	3.1 @Frequency 50.0 - 60.0 Hz	IEC 60250
Dielectric Strength	17.0 kV/mm @Thickness 3.20 mm	432 kV/in @Thickness 0.126 in	in oil; IEC 60243-1
	25.0 kV/mm @Thickness 1.60 mm	635 kV/in @Thickness 0.0630 in	in oil; IEC 60243-1
	30.0 kV/mm @Thickness 0.800 mm	762 kV/in @Thickness 0.0315 in	in oil; IEC 60243-1
Dissipation Factor	0.0010 @Frequency 50.0 - 60.0 Hz	0.0010 @Frequency 50.0 - 60.0 Hz	IEC 60250
	0.014 @Frequency 1.00e+6 Hz	0.014 @Frequency 1.00e+6 Hz	IEC 60250
Comparative Tracking Index	>= 150 V	>= 150 V	IEC 60112
	250 V	250 V	IEC 60112

Descriptive Properties	Value	Comments
Ball Pressure Test, 125Â°C +/- 2Â°C	PASSES	IEC 60695-10-2

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