

Technical Data

Product Description

PBT, 20 % glass fibers, injection molding

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight
Processing Method	• Injection Molding
Multi-Point Data	<ul style="list-style-type: none"> • Creep Modulus vs. Time (ISO 11403-1) • Isochronous Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (ISO 11403-1) • Secant Modulus vs. Strain (ISO 11403-1) • Shear Modulus vs. Temperature (ISO 11403-1) • Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density (73°F (23°C))	1.46 g/cm ³	1.46 g/cm ³	ISO 1183
Apparent (Bulk) Density	0.70 g/cm ³	0.70 g/cm ³	ISO 60
Melt Volume-Flow Rate (MVR) (260°C/2.16 kg)	1.22 in ³ /10min	20.0 cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow : 248°F (120°C), 0.0787 in (2.00 mm) ²	0.10 %	0.10 %	
Across Flow : 500°F (260°C), 0.0787 in (2.00 mm) ³	1.4 %	1.4 %	
Flow : 248°F (120°C), 0.0787 in (2.00 mm) ²	0.10 %	0.10 %	
Flow : 500°F (260°C), 0.0787 in (2.00 mm) ³	0.50 %	0.50 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.40 %	0.40 %	
Equilibrium, 73°F (23°C), 50% RH	0.20 %	0.20 %	
Viscosity Number (Reduced Viscosity)	100.0 ml/g	100.0 ml/g	ISO 1628

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
73°F (23°C)	965000 psi	6650 MPa	ASTM D638
73°F (23°C)	1.03E+6 psi	7100 MPa	ISO 527-2/1
Tensile Strength			
Break, 73°F (23°C)	16500 psi	114 MPa	ASTM D638
Break, 73°F (23°C)	17400 psi	120 MPa	ISO 527-2/5
Tensile Elongation			
Break, 73°F (23°C)	2.6 %	2.6 %	ASTM D638
Break, 73°F (23°C)	3.4 %	3.4 %	ISO 527-2/5
Tensile Creep Modulus			ISO 899-1
1 hr	1.00E+6 psi	6900 MPa	
1000 hr	914000 psi	6300 MPa	
Flexural Modulus			
73°F (23°C)	827000 psi	5700 MPa	ASTM D790
73°F (23°C) ⁴	1.02E+6 psi	7000 MPa	ISO 178/A
Flexural Strength			
73°F (23°C)	26200 psi	181 MPa	ASTM D790
73°F (23°C) ⁴	28300 psi	195 MPa	ISO 178/A
3.5% Strain, 73°F (23°C) ⁴	27600 psi	190 MPa	ISO 178/A
Flexural Strain at Flexural Strength ⁵			ISO 178/A
73°F (23°C)	4.0 %	4.0 %	



Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	< 4.8 ft·lb/in ²	< 10 kJ/m ²	
73°F (23°C)	< 4.8 ft·lb/in ²	< 10 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	21 ft·lb/in ²	45 kJ/m ²	
73°F (23°C)	24 ft·lb/in ²	50 kJ/m ²	
Notched Izod Impact Strength			ISO 180/1A
-40°F (-40°C)	< 4.8 ft·lb/in ²	< 10 kJ/m ²	
-22°F (-30°C)	< 4.8 ft·lb/in ²	< 10 kJ/m ²	
73°F (23°C)	< 4.8 ft·lb/in ²	< 10 kJ/m ²	
Unnotched Izod Impact Strength			ISO 180/1U
-22°F (-30°C)	19 ft·lb/in ²	40 kJ/m ²	
73°F (23°C)	21 ft·lb/in ²	45 kJ/m ²	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Ball Indentation Hardness	26100 psi	180 MPa	ISO 2039-1
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	428 °F	220 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	401 °F	205 °C	ISO 75-2/A
1160 psi (8.0 MPa), Unannealed	284 °F	140 °C	ISO 75-2/C
Vicat Softening Temperature	419 °F	215 °C	ISO 306/B120
Ball Pressure Test (419°F (215°C))	Pass	Pass	IEC 60695-10-2
Melting Temperature ⁶	437 °F	225 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow : 73 to 131°F (23 to 55°C)	1.7E-5 in/in/°F	3.0E-5 cm/cm/°C	
Transverse : 73 to 131°F (23 to 55°C)	6.1E-5 in/in/°F	1.1E-4 cm/cm/°C	
Thermal Conductivity (73°F (23°C))	1.8 Btu·in/hr/ft ² /°F	0.26 W/m/K	ISO 8302
RTI Elec	284 °F	140 °C	UL 746
RTI Imp	257 °F	125 °C	UL 746
RTI Str	284 °F	140 °C	UL 746
Halving Interval			IEC 60216
Electric Strength	52.5 °F	11.4 °C	
Tensile Impact Strength	48.7 °F	9.3 °C	
Tensile Strength	57.2 °F	14.0 °C	
Temperature Index			IEC 60216
Electric Strength, 20000 hr	320 °F	160 °C	
Tensile Impact Strength, 20000 hr	284 °F	140 °C	
Tensile Strength, 20000 hr	302 °F	150 °C	
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	> 1.0E+15 ohms	> 1.0E+15 ohms	IEC 60093
Volume Resistivity (73°F (23°C))	> 1.0E+15 ohms·cm	> 1.0E+15 ohms·cm	IEC 60093
Electric Strength			IEC 60243-1
73°F (23°C), 0.0394 in (1.00 mm)	760 V/mil	30 kV/mm	
Relative Permittivity			IEC 60250
73°F (23°C), 100 Hz	3.80	3.80	
73°F (23°C), 1 MHz	3.60	3.60	
Comparative Tracking Index (Solution A)	350 V	350 V	IEC 60112



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Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating			UL 94
0.030 in (0.75 mm)	HB	HB	
0.06 in (1.5 mm)	HB	HB	
Glow Wire Flammability Index			IEC 60695-2-12
0.08 in (2.0 mm)	1200 °F	650 °C	
Oxygen Index ⁷	20 %	20 %	ISO 4589-2
Burning Behavior - US FMVSS302	passed	passed	ISO 3795
Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
Electrolytical Corrosion (73°F (23°C))	A 1	A 1	IEC 60426
ISO Shortname	ISO 7792-1-PBT, GHMR, 09-070, GF20	ISO 7792-1-PBT, GHMR, 09-070, GF20	
Injection	Nominal Value (English)	Nominal Value (SI)	Test Method
Drying Temperature - Circulation Dryer	248 °F	120 °C	
Drying Time - Circulation Dryer	4.0 to 8.0 hr	4.0 to 8.0 hr	
Processing (Melt) Temp	482 to 518 °F	250 to 270 °C	
Mold Temperature	176 to 212 °F	80 to 100 °C	
Residual Moisture Content	0.0 to 0.020 %	0.0 to 0.020 %	Karl Fisher

Notes¹ Typical properties: these are not to be construed as specifications.² 60x60x2mm, 4 hr³ 60x60x2mm, 80°C MT, 600 bar⁴ 0.079 in/min (2.0 mm/min)⁵ 2 mm/min⁶ 10°C/min⁷ Procedure A

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Polybutylene Terephthalate

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