

Technical Data

Product Description

PBT, non-reinforced, injection molding, extrusion

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe
Processing Method	• Extrusion • 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) • Specific Volume vs Temperature (ISO 11403-2) • Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density (73°F (23°C))	1.31 g/cm ³	1.31 g/cm ³	ISO 1183
Apparent (Bulk) Density	0.80 g/cm ³	0.80 g/cm ³	ISO 60
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	0.976 in ³ /10min	16.0 cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow : 248°F (120°C), 0.0787 in (2.00 mm) ²	0.20 %	0.20 %	
Across Flow : 482°F (250°C), 0.0787 in (2.00 mm) ³	2.1 %	2.1 %	
Flow : 248°F (120°C), 0.0787 in (2.00 mm) ²	0.20 %	0.20 %	
Flow : 482°F (250°C), 0.0787 in (2.00 mm) ³	2.1 %	2.1 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.50 %	0.50 %	
Equilibrium, 73°F (23°C), 50% RH	0.20 %	0.20 %	

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
73°F (23°C)	358000 psi	2470 MPa	ASTM D638
73°F (23°C)	392000 psi	2700 MPa	ISO 527-2/1
Tensile Stress			
Yield, 73°F (23°C)	8700 psi	60.0 MPa	ISO 527-2/50
Break, 73°F (23°C)	4900 psi	33.8 MPa	ASTM D638
Tensile Strain			
Yield, 73°F (23°C)	9.0 %	9.0 %	ISO 527-2/50
Break, 73°F (23°C)	29 %	29 %	ASTM D638
Nominal Tensile Strain at Break			ISO 527-2/50
73°F (23°C)	> 15 %	> 15 %	
Tensile Creep Modulus			ISO 899-1
1 hr	319000 psi	2200 MPa	
1000 hr	189000 psi	1300 MPa	
Flexural Modulus			
73°F (23°C)	303000 psi	2090 MPa	ASTM D790
73°F (23°C) ⁴	384000 psi	2650 MPa	ISO 178/A
Flexural Strength			
73°F (23°C)	12400 psi	85.5 MPa	ASTM D790
73°F (23°C) ⁴	13100 psi	90.0 MPa	ISO 178/A
3.5% Strain, 73°F (23°C) ⁴	11600 psi	80.0 MPa	ISO 178/A
Flexural Strain at Flexural Strength ⁵			ISO 178/A
73°F (23°C)	6.0 %	6.0 %	



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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)	86 ft·lb/in ²	180 kJ/m ²	
73°F (23°C)	No Break	No Break	
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)	71 ft·lb/in ²	150 kJ/m ²	
73°F (23°C)	No Break	No Break	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-22°F (-30°C), Total Penetration Energy	23.6 ft·lb	32.0 J	
73°F (23°C), Total Penetration Energy	16.2 ft·lb	22.0 J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-22°F (-30°C)	1170 lbf	5190 N	
73°F (23°C)	821 lbf	3650 N	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Ball Indentation Hardness	17400 psi	120 MPa	ISO 2039-1
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	302 °F	150 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	140 °F	60.0 °C	ISO 75-2/A
1160 psi (8.0 MPa), Unannealed	113 °F	45.0 °C	ISO 75-2/C
Ball Pressure Test (374°F (190°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)	6.7E-5 in/in/°F	1.2E-4 cm/cm/°C	
Transverse : 73 to 131°F (23 to 55°C)	6.7E-5 in/in/°F	1.2E-4 cm/cm/°C	
Thermal Conductivity (73°F (23°C))	1.7 Btu·in/hr/ft ² /°F	0.25 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	54.7 °F	12.6 °C	
Tensile Impact Strength	53.6 °F	12.0 °C	
Tensile Strength	54.7 °F	12.6 °C	
Temperature Index			IEC 60216
Electric Strength, 20000 hr	302 °F	150 °C	
Tensile Impact Strength, 20000 hr	275 °F	135 °C	
Tensile Strength, 20000 hr	302 °F	150 °C	
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
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	3.40	3.40	
73°F (23°C), 1 MHz	3.20	3.20	
Comparative Tracking Index (Solution A)	600 V	600 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)	1380 °F	750 °C	
Oxygen Index ⁷	24 %	24 %	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, 11-030	ISO 7792-1-PBT, GHMR, 11-030	
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 500 °F	250 to 260 °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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