POCAN® B2505 000000

Polybutylene Terephthalate

LANXESS GmbH

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Technical Data

Product Description		
PBT, non-reinforced, injection molding, flame retardant		
General		
Material Status	• Commercial: Active	
Availability	• Africa & Middle East	• Europe
Additive	• Flame Retardant	
Features	• Flame Retardant	
Processing Method	• Injection Molding	
Multi-Point Data	• Shear Modulus vs. Temperature (ISO 11403-1)	• Viscosity vs. Shear Rate (ISO 11403-2)
Resin ID (ISO 1043)	• PBT FR(17)	

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density (73°F (23°C))	1.47 g/cm³	1.47 g/cm³	ISO 1183
Apparent (Bulk) Density	0.90 g/cm³	0.90 g/cm³	ISO 60
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	1.10 in³/10min	18.0 cm³/10min	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]	2.2 %	2.2 %	
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]	2.2 %	2.2 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.40 %	0.40 %	
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)	400000 psi	2760 MPa	ASTM D638
73°F (23°C)	435000 psi	3000 MPa	ISO 527-2/1
Tensile Stress			
Yield, 73°F (23°C)	7250 psi	50.0 MPa	ISO 527-2/50
Break, 73°F (23°C)	7000 psi	48.3 MPa	ASTM D638
Tensile Strain			
Yield, 73°F (23°C)	3.0 %	3.0 %	ISO 527-2/50
Break, 73°F (23°C)	16 %	16 %	ASTM D638
Nominal Tensile Strain at Break			ISO 527-2/50
73°F (23°C)	8.0 %	8.0 %	
Tensile Creep Modulus			ISO 899-1
1 hr	406000 psi	2800 MPa	
1000 hr	261000 psi	1800 MPa	
Flexural Modulus			
73°F (23°C)	372000 psi	2560 MPa	ASTM D790
73°F (23°C) [4]	435000 psi	3000 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)	5.0 %	5.0 %	

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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/in²	< 10 kJ/m²	
73°F (23°C)	< 4.8 ft·lb/in²	< 10 kJ/m²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	43 ft·lb/in²	90 kJ/m²	
73°F (23°C)	48 ft·lb/in²	100 kJ/m²	
Notched Izod Impact Strength			ISO 180/1A
-40°F (-40°C)	< 4.8 ft·lb/in²	< 10 kJ/m²	
-22°F (-30°C)	< 4.8 ft·lb/in²	< 10 kJ/m²	
73°F (23°C)	< 4.8 ft·lb/in²	< 10 kJ/m²	
Unnotched Izod Impact Strength			ISO 180/1U
-22°F (-30°C)	31 ft·lb/in²	65 kJ/m²	
73°F (23°C)	38 ft·lb/in²	80 kJ/m²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
73°F (23°C), Energy to Peak Force	29.5 ft·lb	40.0 J	
Hardness	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Ball Indentation Hardness	21800 psi	150 MPa	ISO 2039-1
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Heat Deflection Temperature			
66 psi (0.45 MPa), Unannealed	338 °F	170 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	158 °F	70.0 °C	ISO 75-2/A
1160 psi (8.0 MPa), Unannealed	118 °F	48.0 °C	ISO 75-2/C
Vicat Softening Temperature	374 °F	190 °C	ISO 306/B120
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)	5.6E-5 in/in/°F	1.0E-4 cm/cm/°C	
Transverse : 73 to 131°F (23 to 55°C)	5.6E-5 in/in/°F	1.0E-4 cm/cm/°C	
Thermal Conductivity (73°F (23°C))	1.7 Btu·in/hr/ft²/°F	0.25 W/m/K	ISO 8302
RTI Elec	266 °F	130 °C	UL 746
RTI Imp (0.06 in (1.5 mm))	266 °F	130 °C	UL 746
RTI Str (0.06 in (1.5 mm))	284 °F	140 °C	UL 746
Halving Interval			IEC 60216
Electric Strength	54.3 °F	12.4 °C	
Tensile Impact Strength : 59.1 mil (1.50 mm)	48.6 °F	9.2 °C	
Tensile Strength : 59.1 mil (1.50 mm)	53.1 °F	11.7 °C	
Temperature Index			IEC 60216
Electric Strength, 20000 hr	293 °F	145 °C	
Tensile Impact Strength, 20000 hr : 59.1 mil (1.50 mm)	275 °F	135 °C	
Tensile Strength, 20000 hr : 59.1 mil (1.50 mm)	284 °F	140 °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)	710 V/mil	28 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 (CTI) [7]	PLC 0	PLC 0	UL 746

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Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating			UL 94
0.030 in (0.75 mm)	V-0	V-0	
0.06 in (1.5 mm)	V-0	V-0	
Glow Wire Flammability Index			IEC 60695-2-12
0.08 in (2.0 mm)	1760 °F	960 °C	
Oxygen Index [8]	32 %	32 %	ISO 4589-2

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, GFMHR, 11-030	ISO 7792-1-PBT, GFMHR, 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	464 to 500 °F	240 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

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 60x60x2mm, 4 hr

[3] 60x60x2mm, 80°C MT, 600 bar

[4] 0.079 in/min (2.0 mm/min)

[5] 2 mm/min

[6] 10°C/min

[7] Solution A

[8] Procedure A

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Where to Buy

Supplier

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Distributor

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