

Generic PBT

Polybutylene Terephthalate

Generic

Message:

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General Information			
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.25 - 1.56	g/cm³	ASTM D792
23°C	1.24 - 1.48	g/cm³	ISO 1183
Apparent Density	0.80 - 0.81	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)			
250°C/2.16 kg	4.5 - 52	g/10 min	ASTM D1238
250°C/2.16 kg	7.6 - 40	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	4.50 - 55.5	cm³/10min	ISO 1133
Molding Shrinkage			
Flow: 23°C	0.10 - 2.2	%	ASTM D955
Transverse flow: 23°C	1.3 - 2.1	%	ASTM D955
23°C	1.4 - 2.2	%	ISO 294-4
Water Absorption			
23°C, 24 hr	0.030 - 0.15	%	ASTM D570
23°C, 24 hr	0.054 - 0.50	%	ISO 62
Saturated, 23°C	0.050 - 0.60	%	ASTM D570
Saturated, 23°C	0.087 - 0.51	%	ISO 62
Equilibrium, 23°C	0.040 - 0.36	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.070 - 0.25	%	ISO 62
Viscosity Number (Reduced Viscosity) (23°C)	103.9 - 140.2	ml/g	ISO 1628
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			
23°C	86 - 122		ASTM D785
23°C	70 - 123		ISO 2039-2
Durometer Hardness (23°C)	75 - 80		ISO 868
Ball Indentation Hardness	119 - 131	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	2020 - 3060	MPa	ASTM D638
23°C	1890 - 2870	MPa	ISO 527-2

Tensile Strength			
Yield, 23°C	44.9 - 61.3	MPa	ASTM D638
Yield, 23°C	39.6 - 61.3	MPa	ISO 527-2
Fracture, 23°C	24.6 - 59.9	MPa	ASTM D638
Fracture, 23°C	34.4 - 62.5	MPa	ISO 527-2
23°C	42.7 - 60.3	MPa	ASTM D638
23°C	26.0 - 60.2	MPa	ISO 527-2
Tensile Elongation			
Yield, 23°C	0.58 - 16	%	ASTM D638
Yield, 23°C	2.5 - 9.6	%	ISO 527-2
Fracture, 23°C	0.50 - 200	%	ASTM D638
Fracture, 23°C	0.70 - 71	%	ISO 527-2
Nominal Tensile Strain at Break (23°C)	7.5 - 51	%	ISO 527-2
Tensile Creep Modulus			
1 hr	2400	MPa	ISO 899-1
1000 hr	1450	MPa	ISO 899-1
Flexural Modulus			
23°C	1980 - 2920	MPa	ASTM D790
23°C	1670 - 2980	MPa	ISO 178
Flexural Strength			
23°C	69.8 - 98.5	MPa	ASTM D790
23°C	56.7 - 91.3	MPa	ISO 178
Yield, 23°C	76.3 - 90.8	MPa	ASTM D790
Fracture, 23°C	72.1 - 166	MPa	ASTM D790
Compressive Strength (23°C)	68.6 - 90.0	MPa	ASTM D695
Coefficient of Friction	0.080 - 0.25		ASTM D1894
Taber Abrasion Resistance (23°C)	8.70 - 33.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	1.2 - 11	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	13 - 220	kJ/m ²	ISO 179
Notched Izod Impact			
23°C	5.0 - 70	J/m	ASTM D256
23°C	3.5 - 11	kJ/m ²	ISO 180
Unnotched Izod Impact			
23°C	110 - 3200	J/m	ASTM D256
23°C	28 - 130	kJ/m ²	ISO 180
Instrumented Dart Impact			
23°C	0.960 - 200	J	ASTM D3763
23°C	0.500 - 111	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (23°C)	40.0 - 3880	N	ISO 6603-2
Dart Drop Impact (23°C)	36.2 - 43.5	J	ASTM D3029

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	148 - 221	°C	ASTM D648
0.45 MPa, not annealed	115 - 174	°C	ISO 75-2/B
0.45 MPa, annealed	152 - 155	°C	ASTM D648
0.45 MPa, annealed	180 - 181	°C	ISO 75-2/B
1.8 MPa, not annealed	45.0 - 211	°C	ASTM D648
1.8 MPa, not annealed	48.5 - 74.0	°C	ISO 75-2/A
1.8 MPa, annealed	60.0 - 60.3	°C	ISO 75-2/A
8.0 MPa, not annealed	45.0 - 48.1	°C	ISO 75-2/C
Continuous Use Temperature	120 - 130	°C	ASTM D794
Glass Transition Temperature	59.7 - 60.8	°C	ISO 11357-2
Vicat Softening Temperature			
--	113 - 220	°C	ASTM D1525
--	163 - 220	°C	ISO 306
Melting Temperature			
--	221 - 225	°C	
--	220 - 225	°C	DSC
--	224 - 225	°C	ISO 11357-3, ASTM D3418
--	210 - 226	°C	ISO 3146
Linear thermal expansion coefficient			
Flow	3.0E-5 - 9.1E-5	cm/cm/°C	ASTM D696
Flow	1.9E-5 - 1.4E-4	cm/cm/°C	ASTM E831
Flow	7.9E-5 - 1.3E-4	cm/cm/°C	ISO 11359-2
Lateral	7.6E-5 - 1.2E-4	cm/cm/°C	ASTM E831
Lateral	7.7E-5 - 1.5E-4	cm/cm/°C	ISO 11359-2
Thermal Conductivity (23°C)	0.25	W/m/K	ISO 8302
RTI Elec	75.0 - 141	°C	UL 746
RTI Imp	75.0 - 130	°C	UL 746
RTI	75.0 - 140	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
--	1.0E+3 - 2.5E+14	ohms	ASTM D257
--	1.0E+12 - 2.5E+15	ohms	IEC 60093
Volume Resistivity			
23°C	1.1 - 2.5E+17	ohms·cm	ASTM D257
23°C	1.1E+6 - 2.5E+17	ohms·cm	IEC 60093
Dielectric Strength			
23°C	15 - 24	kV/mm	ASTM D149
23°C	12 - 31	kV/mm	IEC 60243-1
Dielectric Constant			
23°C	3.10 - 3.32		ASTM D150

23°C	3.20 - 3.30		IEC 60250
23°C	3.29		IEC 60250
Dissipation Factor			
23°C	1.0E-3 - 0.022		ASTM D150
23°C	0.0 - 0.021		IEC 60250
Arc Resistance	110 - 152	sec	ASTM D495
Comparative Tracking Index (CTI)	249 - 600	V	UL 746
Comparative Tracking Index			
--	588 - 600	V	IEC 60112
--	591 - 600	V	ASTM D3638
Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index	650 - 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	642 - 960	°C	IEC 60695-2-13
Oxygen Index			
--	22 - 30	%	ASTM D2863
--	20 - 30	%	ISO 4589-2
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity	0.0110 - 188	Pa · s	ASTM D3835
Injection	Nominal Value	Unit	
Drying Temperature	110 - 132	°C	
Drying Time	3.0 - 6.1	hr	
Drying Time, Maximum	9.9	hr	
Dew Point	-28.9 - -28.6	°C	
Suggested Max Moisture	0.020 - 0.052	%	
Suggested Shot Size	55 - 60	%	
Suggested Max Regrind	23	%	
Hopper Temperature	35.0 - 245	°C	
Rear Temperature	234 - 251	°C	
Middle Temperature	235 - 252	°C	
Front Temperature	235 - 266	°C	
Nozzle Temperature	239 - 265	°C	
Processing (Melt) Temp	244 - 260	°C	
Mold Temperature	58.4 - 95.7	°C	
Injection Pressure	77.2 - 90.0	MPa	
Holding Pressure	2.00 - 81.8	MPa	
Back Pressure	0.147 - 1.64	MPa	
Screw Speed	45 - 125	rpm	
Cushion	3.18 - 4.76	mm	
Vent Depth	0.019 - 0.032	mm	
Injection instructions			

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Extrusion	Nominal Value	Unit
Drying Temperature	103 - 115	°C
Drying Time	3.5 - 5.0	hr
Suggested Max Moisture	0.020 - 0.040	%
Cylinder Zone 1 Temp.	215 - 255	°C
Cylinder Zone 2 Temp.	240 - 255	°C
Cylinder Zone 3 Temp.	240 - 258	°C
Cylinder Zone 4 Temp.	250 - 260	°C
Adapter Temperature	225 - 260	°C
Melt Temperature	225 - 263	°C
Die Temperature	215 - 260	°C

Extrusion instructions

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