

Generic PBT - Glass Fiber

Polybutylene Terephthalate

Generic

Message:

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This information is provided for comparative purposes only.

General Information			
Filler / Reinforcement	Glass fiber reinforced material		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.40 - 1.66	g/cm ³	ASTM D792
23°C	1.37 - 1.68	g/cm ³	ISO 1183
Apparent Density	0.70 - 0.81	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)			
250°C/2.16 kg	7.5 - 31	g/10 min	ASTM D1238
250°C/2.16 kg	4.8 - 26	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	2.95 - 30.5	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow: 23°C	0.20 - 1.0	%	ASTM D955
Transverse flow: 23°C	0.50 - 1.4	%	ASTM D955
23°C	0.18 - 1.3	%	ISO 294-4
Water Absorption			
23°C, 24 hr	4.0E-3 - 0.13	%	ASTM D570
23°C, 24 hr	0.032 - 0.40	%	ISO 62
Saturated, 23°C	0.095 - 0.50	%	ASTM D570
Saturated, 23°C	0.053 - 0.42	%	ISO 62
Equilibrium, 23°C	0.049 - 0.31	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.030 - 0.37	%	ISO 62
Viscosity Number (Reduced Viscosity) (23°C)	62.0 - 116.0	ml/g	ISO 1628
Viscosity Number	96.8 - 109	cm ³ /g	ISO 307
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			
23°C	89 - 121		ASTM D785
23°C	85 - 122		ISO 2039-2
Durometer Hardness (23°C)	80 - 85		ISO 868
Ball Indentation Hardness	100 - 220	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			

23°C	4040 - 12000	MPa	ASTM D638
23°C	4060 - 11700	MPa	ISO 527-2
Tensile Strength			
Yield, 23°C	72.2 - 144	MPa	ASTM D638
Yield, 23°C	71.9 - 150	MPa	ISO 527-2
Fracture, 23°C	76.0 - 140	MPa	ASTM D638
Fracture, 23°C	77.0 - 147	MPa	ISO 527-2
23°C	72.7 - 138	MPa	ASTM D638
23°C	78.3 - 155	MPa	ISO 527-2
Tensile Elongation			
Yield, 23°C	1.5 - 6.3	%	ASTM D638
Yield, 23°C	1.4 - 3.1	%	ISO 527-2
Fracture, 23°C	1.0 - 4.9	%	ASTM D638
Fracture, 23°C	1.3 - 4.3	%	ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	7580	MPa	ISO 899-1
1000 hr	6250	MPa	ISO 899-1
Flexural Modulus			
23°C	3680 - 10400	MPa	ASTM D790
23°C	3760 - 11300	MPa	ISO 178
Flexural Strength			
23°C	111 - 217	MPa	ASTM D790
23°C	117 - 224	MPa	ISO 178
Yield, 23°C	108 - 213	MPa	ASTM D790
Fracture, 23°C	121 - 210	MPa	ASTM D790
Compressive Strength (23°C)	109 - 133	MPa	ASTM D695
Coefficient of Friction	0.14 - 0.42		ASTM D1894
Taber Abrasion Resistance (23°C)	16.0 - 56.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	3.4 - 13	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	23 - 71	kJ/m ²	ISO 179
Notched Izod Impact			
23°C	10 - 130	J/m	ASTM D256
23°C	4.9 - 10	kJ/m ²	ISO 180
Notched Izod Impact (23°C)	5.00 - 10.1	kJ/m ²	ASTM D256
Unnotched Izod Impact			
23°C	59 - 870	J/m	ASTM D256
23°C	19 - 56	kJ/m ²	ISO 180
Unnotched Izod Impact (23°C)	47.8 - 60.1	kJ/m ²	ASTM D256
Instrumented Dart Impact			
23°C	3.00 - 14.3	J	ASTM D3763
23°C	1.33 - 2.31	J	ISO 6603-2

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	207 - 222	°C	ASTM D648
0.45 MPa, not annealed	215 - 223	°C	ISO 75-2/B
0.45 MPa, annealed	212 - 228	°C	ASTM D648
1.8 MPa, not annealed	186 - 219	°C	ASTM D648
1.8 MPa, not annealed	182 - 212	°C	ISO 75-2/A
8.0 MPa, not annealed	63.5 - 168	°C	ISO 75-2/C
Continuous Use Temperature	88.1 - 141	°C	ASTM D794
Glass Transition Temperature	59.5 - 60.8	°C	ISO 11357-2
Vicat Softening Temperature			
--	200 - 222	°C	ASTM D1525
--	198 - 221	°C	ISO 306
Melting Temperature			
--	222 - 228	°C	
--	220 - 225	°C	DSC
--	224 - 225	°C	ISO 11357-3
--	224 - 226	°C	ASTM D3418
--	209 - 225	°C	ISO 3146
Linear thermal expansion coefficient			
Flow	2.2E-5 - 5.0E-5	cm/cm/°C	ASTM D696
Flow	1.9E-5 - 2.7E-5	cm/cm/°C	ASTM E831
Flow	2.0E-5 - 4.9E-5	cm/cm/°C	ISO 11359-2
Lateral	2.7E-5 - 1.2E-4	cm/cm/°C	ASTM E831
Lateral	5.1E-5 - 1.4E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	950 - 1760	J/kg/°C	ASTM C351
Thermal Conductivity			
23°C	0.16 - 0.22	W/m/K	ASTM C177
23°C	0.19 - 0.59	W/m/K	ISO 8302
RTI Elec	73.1 - 143	°C	UL 746
RTI Imp	73.1 - 143	°C	UL 746
RTI	73.1 - 143	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
--	3.5 - 2.5E+15	ohms	ASTM D257
--	1.0E+3 - 7.5E+15	ohms	IEC 60093
Volume Resistivity			
23°C	5.0 - 2.5E+17	ohms·cm	ASTM D257
23°C	1.0E+11 - 2.5E+17	ohms·cm	IEC 60093
Dielectric Strength			
23°C	16 - 31	kV/mm	ASTM D149
23°C	16 - 35	kV/mm	IEC 60243-1

Dielectric Constant			
23°C	3.19 - 3.85		ASTM D150
23°C	3.38 - 4.06		IEC 60250
23°C	3.61		IEC 60250
Dissipation Factor			
23°C	1.0E-3 - 0.023		ASTM D150
23°C	0.0 - 0.023		IEC 60250
Arc Resistance	95.7 - 140	sec	ASTM D495
Comparative Tracking Index (CTI)	218 - 600	V	UL 746
Comparative Tracking Index			
--	119 - 600	V	IEC 60112
--	250 - 504	V	ASTM D3638
Insulation Resistance (23°C)	1.0E+4 - 1.0E+13	ohms	IEC 60167
Flammability	Nominal Value	Unit	Test Method
Burning Rate	0.0 - 100	mm/min	ISO 3795
Glow Wire Flammability Index	743 - 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	642 - 960	°C	IEC 60695-2-13
Oxygen Index			
--	20 - 31	%	ASTM D2863
--	19 - 33	%	ISO 4589-2
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity	87.0 - 211	Pa · s	ASTM D3835
Injection	Nominal Value	Unit	
Drying Temperature	110 - 132	°C	
Drying Time	2.8 - 7.1	hr	
Drying Time, Maximum	9.9	hr	
Suggested Max Moisture	0.014 - 0.052	%	
Suggested Shot Size	50 - 60	%	
Suggested Max Regrind	22	%	
Hopper Temperature	35.0 - 240	°C	
Rear Temperature	227 - 258	°C	
Middle Temperature	239 - 258	°C	
Front Temperature	242 - 266	°C	
Nozzle Temperature	250 - 266	°C	
Processing (Melt) Temp	245 - 266	°C	
Mold Temperature	69.7 - 92.3	°C	
Injection Pressure	77.0 - 87.5	MPa	
Holding Pressure	2.00 - 80.0	MPa	
Back Pressure	0.147 - 1.64	MPa	
Screw Speed	44 - 128	rpm	
Cushion	3.18 - 4.76	mm	
Vent Depth	0.031 - 0.032	mm	

Injection instructions

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