

Overview of materials for Polybutylene Terephthalate (PBT), 50% Glass Fiber Filled

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), 50% Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polybutylene Terephthalate (PBT), 50% Glass Fiber Filled". Specific grades with glass content between 45% and 54% are included. Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polybutylene-Terephthalate-PBT-50-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.64 - 1.84 g/cc	0.0592 - 0.0665 lb/in ³	Average value: 1.71 g/cc Grade Count:30
	1.47 - 1.60 g/cc @Temperature 250 - 260 °C	0.0531 - 0.0578 lb/in ³ @Temperature 482 - 500 °F	Average value: 1.54 g/cc Grade Count:2
Filler Content	45.0 - 50.0 %	45.0 - 50.0 %	Average value: 47.5 % Grade Count:4
Water Absorption	0.000 - 0.400 %	0.000 - 0.400 %	Average value: 0.248 % Grade Count:8
Moisture Absorption at Equilibrium	0.0300 - 0.500 %	0.0300 - 0.500 %	Average value: 0.145 % Grade Count:13
Water Absorption at Saturation	0.400 - 0.500 %	0.400 - 0.500 %	Average value: 0.425 % Grade Count:4
Linear Mold Shrinkage	0.00100 - 0.00550 cm/cm	0.00100 - 0.00550 in/in	Average value: 0.00266 cm/cm Grade Count:23
Linear Mold Shrinkage, Transverse	0.00400 - 0.0140 cm/cm	0.00400 - 0.0140 in/in	Average value: 0.00876 cm/cm Grade Count:14
Melt Flow	5.00 - 30.0 g/10 min	5.00 - 30.0 g/10 min	Average value: 11.6 g/10 min Grade Count:12

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	40.0 - 180 MPa	5800 - 26100 psi	Average value: 146 MPa Grade Count:26
	45.0 - 90.0 MPa @Temperature 60.0 - 150 °C	6530 - 13100 psi @Temperature 140 - 302 °F	Average value: 65.0 MPa Grade Count:1
Tensile Strength, Yield	130 - 150 MPa	18900 - 21800 psi	Average value: 141 MPa Grade Count:4

Elongation at Break Mechanical Properties	1.00 - 3.00 % Metric	1.00 - 3.00 % English	Average value: 1.95 % Grade Count:28 Comments
	2.50 - 3.00 % @Temperature 60.0 - 150 °C	2.50 - 3.00 % @Temperature 140 - 302 °F	Average value: 2.75 % Grade Count:1
Modulus of Elasticity	4.10 - 18.7 GPa	595 - 2710 ksi	Average value: 15.1 GPa Grade Count:26
	4.50 - 10.0 GPa @Temperature 60.0 - 150 °C	653 - 1450 ksi @Temperature 140 - 302 °F	Average value: 6.93 GPa Grade Count:1
Flexural Yield Strength	68.0 - 285 MPa	9860 - 41300 psi	Average value: 212 MPa Grade Count:16
Flexural Modulus	4.61 - 16.5 GPa	668 - 2400 ksi	Average value: 12.7 GPa Grade Count:18
Shear Modulus	>= 0.409 GPa @Temperature -50.0 - 200 °C	>= 59.3 ksi @Temperature -58.0 - 392 °F	Average value: 1.41 GPa Grade Count:2
Izod Impact, Notched	0.694 - 2.67 J/cm	1.30 - 5.00 ft-lb/in	Average value: 1.16 J/cm Grade Count:9
Izod Impact, Unnotched	7.47 - 10.1 J/cm	14.0 - 19.0 ft-lb/in	Average value: 8.68 J/cm Grade Count:4
Izod Impact, Notched (ISO)	7.30 - 30.0 kJ/m ²	3.47 - 14.3 ft-lb/in ²	Average value: 13.3 kJ/m ² Grade Count:9
	9.00 - 10.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	4.28 - 4.76 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 9.67 kJ/m ² Grade Count:3
Izod Impact, Unnotched (ISO)	33.0 - 80.0 kJ/m ²	15.7 - 38.1 ft-lb/in ²	Average value: 52.0 kJ/m ² Grade Count:3
	43.0 - 43.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	20.5 - 20.5 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 43.0 kJ/m ² Grade Count:1
Charpy Impact Unnotched	2.20 - 7.00 J/cm ²	10.5 - 33.3 ft-lb/in ²	Average value: 5.51 J/cm ² Grade Count:17
	4.00 - 6.90 J/cm ² @Temperature -30.0 - 30.0 °C	19.0 - 32.8 ft-lb/in ² @Temperature -22.0 - 86.0 °F	Average value: 5.95 J/cm ² Grade Count:13
Charpy Impact, Notched	0.700 - 3.20 J/cm ²	3.33 - 15.2 ft-lb/in ²	Average value: 1.23 J/cm ² Grade Count:19
	0.310 - 1.30 J/cm ² @Temperature -30.0 - 30.0 °C	1.48 - 6.19 ft-lb/in ² @Temperature -22.0 - 86.0 °F	Average value: 1.05 J/cm ² Grade Count:11

Mechanical Properties	Metric	English	Comments
Tensile Creep Modulus, 1 hour	15000 MPa	2.18e+6 psi	Average value: 14200 MPa Grade Count:3
Tensile Creep Modulus, 1000 hours	9500 - 11600 MPa	1.38e+6 - 1.68e+6 psi	Average value: 10400 MPa Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	2.00 - 50.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	1.11 - 27.8 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 23.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:8
CTE, linear, Transverse to Flow	40.0 - 80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	22.2 - 44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 58.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:5
Specific Heat Capacity	1.40 - 1.60 J/g $\cdot^\circ\text{C}$	0.335 - 0.382 BTU/lb $\cdot^\circ\text{F}$	Average value: 1.49 J/g $\cdot^\circ\text{C}$ Grade Count:3
Melting Point	200 - 250 $^\circ\text{C}$	392 - 482 $^\circ\text{F}$	Average value: 224 $^\circ\text{C}$ Grade Count:18
Maximum Service Temperature, Air	75.0 - 210 $^\circ\text{C}$	167 - 410 $^\circ\text{F}$	Average value: 151 $^\circ\text{C}$ Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	216 - 228 $^\circ\text{C}$	420 - 442 $^\circ\text{F}$	Average value: 222 $^\circ\text{C}$ Grade Count:22
Deflection Temperature at 1.8 MPa (264 psi)	193 - 220 $^\circ\text{C}$	379 - 428 $^\circ\text{F}$	Average value: 210 $^\circ\text{C}$ Grade Count:29
Vicat Softening Point	210 - 225 $^\circ\text{C}$	410 - 437 $^\circ\text{F}$	Average value: 216 $^\circ\text{C}$ Grade Count:10
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:26
Flame Spread	27.0 - 100 mm/min	1.06 - 3.94 in/min	Average value: 51.3 mm/min Grade Count:3
Oxygen Index	20.0 %	20.0 %	Average value: 20.0 % Grade Count:4
Glow Wire Test	650 - 750 $^\circ\text{C}$	1200 - 1380 $^\circ\text{F}$	Average value: 730 $^\circ\text{C}$ Grade Count:5

Electrical Properties	Metric	English	Comments
Electrical Resistivity	7.00e+12 - 1.00e+17 ohm-cm	7.00e+12 - 1.00e+17 ohm-cm	Average value: 9.69e+15 ohm-cm Grade Count:19
Surface Resistance	1.00e+13 - 4.00e+16 ohm	1.00e+13 - 4.00e+16 ohm	Average value: 5.09e+15 ohm Grade Count:13
Dielectric Constant	3.20 - 4.90	3.20 - 4.90	Average value: 4.18 Grade Count:10
Dielectric Strength	16.0 - 100 kV/mm	406 - 2540 kV/in	Average value: 33.3 kV/mm Grade Count:15
Dissipation Factor	0.00120 - 0.0260	0.00120 - 0.0260	Average value: 0.0121 Grade Count:8
Comparative Tracking Index	125 - 600 V	125 - 600 V	Average value: 417 V Grade Count:12

Processing Properties	Metric	English	Comments
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Processing Temperature Processing Properties	75.0 - 270 °C Metric	167 - 518 °F English	Average value: 187 °C Grade Count:4 Comments
Melt Temperature	20.0 - 280 °C	68.0 - 536 °F	Average value: 254 °C Grade Count:12
Mold Temperature	30.0 - 130 °C	86.0 - 266 °F	Average value: 80.4 °C Grade Count:14

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