

Overview of materials for Polybutylene Terephthalate (PBT), Glass Bead Filled

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Glass Bead Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polybutylene Terephthalate (PBT), Glass Bead Filled". 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-Glass-Bead-Filled.php

Physical Properties	Metric	English	Comments
Density	1.25 - 1.73 g/cc	0.0452 - 0.0625 lb/in ³	Average value: 1.53 g/cc Grade Count:50
	1.25 - 1.25 g/cc @Temperature 250 - 250 °C	0.0452 - 0.0452 lb/in ³ @Temperature 482 - 482 °F	Average value: 1.25 g/cc Grade Count:1
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 26.7 % Grade Count:6
Water Absorption	0.0500 - 0.500 %	0.0500 - 0.500 %	Average value: 0.165 % Grade Count:26
Moisture Absorption at Equilibrium	0.0500 - 0.200 %	0.0500 - 0.200 %	Average value: 0.145 % Grade Count:13
Water Absorption at Saturation	0.450 - 0.500 %	0.450 - 0.500 %	Average value: 0.467 % Grade Count:3
Viscosity	20000 - 700000 cP @Temperature 230 - 270 °C	20000 - 700000 cP @Temperature 446 - 518 °F	Average value: 260000 cP Grade Count:2
	20000 - 700000 cP @Shear Rate 1.00 - 100000 1/s	20000 - 700000 cP @Shear Rate 1.00 - 100000 1/s	Average value: 260000 cP Grade Count:2
Linear Mold Shrinkage	0.00200 - 0.0400 cm/cm	0.00200 - 0.0400 in/in	Average value: 0.0125 cm/cm Grade Count:44
Linear Mold Shrinkage, Transverse	0.00200 - 0.0400 cm/cm	0.00200 - 0.0400 in/in	Average value: 0.0143 cm/cm Grade Count:17
Melt Flow	4.00 - 48.0 g/10 min	4.00 - 48.0 g/10 min	Average value: 21.0 g/10 min Grade Count:11

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	117 - 120	117 - 120	Average value: 118 Grade Count:11
Ball Indentation Hardness			Average value: 170 MPa Grade

Mechanical Properties	150 - 200 MPa Metric	21800 - 29000 psi English	Count:4 Comments
Tensile Strength, Ultimate	40.7 - 130 MPa	5900 - 18900 psi	Average value: 66.1 MPa Grade Count:38
Tensile Strength, Yield	44.0 - 120 MPa	6380 - 17400 psi	Average value: 55.2 MPa Grade Count:14
Elongation at Break	1.80 - 16.0 %	1.80 - 16.0 %	Average value: 3.92 % Grade Count:49
Elongation at Yield	2.80 - 4.20 %	2.80 - 4.20 %	Average value: 3.42 % Grade Count:5
Modulus of Elasticity	3.10 - 15.2 GPa	450 - 2200 ksi	Average value: 5.35 GPa Grade Count:33
Flexural Yield Strength	77.9 - 207 MPa	11300 - 30000 psi	Average value: 109 MPa Grade Count:37
Flexural Modulus	2.10 - 13.1 GPa	305 - 1900 ksi	Average value: 4.73 GPa Grade Count:39
Compressive Yield Strength	49.6 - 138 MPa	7200 - 20000 psi	Average value: 73.8 MPa Grade Count:8
Shear Modulus	>= 0.0710 GPa @Temperature -50.0 - 200 °C	>= 10.3 ksi @Temperature -58.0 - 392 °F	Average value: 0.621 GPa Grade Count:1
Izod Impact, Notched	0.220 - 12.0 J/cm	0.412 - 22.5 ft-lb/in	Average value: 0.998 J/cm Grade Count:29
Izod Impact, Unnotched	1.72 - 6.41 J/cm	3.22 - 12.0 ft-lb/in	Average value: 3.71 J/cm Grade Count:20
Izod Impact, Notched (ISO)	2.00 - 10.0 kJ/m ²	0.952 - 4.76 ft-lb/in ²	Average value: 4.33 kJ/m ² Grade Count:9
	3.00 - 10.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	1.43 - 4.76 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 5.00 kJ/m ² Grade Count:4
Izod Impact, Unnotched (ISO)	11.0 - 80.0 kJ/m ²	5.23 - 38.1 ft-lb/in ²	Average value: 31.5 kJ/m ² Grade Count:9
	25.0 - 190 kJ/m ² @Temperature -30.0 - - 30.0 °C	11.9 - 90.4 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 69.8 kJ/m ² Grade Count:4
Charpy Impact Unnotched	2.20 - 5.00 J/cm ²	10.5 - 23.8 ft-lb/in ²	Average value: 3.55 J/cm ² Grade Count:15
	1.90 - 5.00 J/cm ² @Temperature -30.0 - 30.0 °C	9.04 - 23.8 ft-lb/in ² @Temperature -22.0 - 86.0 °F	Average value: 3.19 J/cm ² Grade Count:12
Charpy Impact, Notched	0.170 - 1.00 J/cm ²	0.809 - 4.76 ft-lb/in ²	Average value: 0.442 J/cm ² Grade Count:17
	0.200 - 1.00 J/cm ²	0.952 - 4.76 ft-lb/in ²	

Mechanical Properties	Metric @Temperature -30.0 - 30.0 °C	English @Temperature -22.0 - 86.0 °F	Comments Average value: 0.503 J/cm ² Grade Count:10
Tensile Creep Modulus, 1000 hours	1300 - 2700 MPa	189000 - 392000 psi	Average value: 2150 MPa Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	21.6 - 110 µm/m-°C	12.0 - 61.1 µin/in-°F	Average value: 66.6 µm/m-°C Grade Count:27
	140 - 140 µm/m-°C @Temperature 60.0 - 138 °C	77.8 - 77.8 µin/in-°F @Temperature 140 - 280 °F	Average value: 140 µm/m-°C Grade Count:1
CTE, linear, Transverse to Flow	68.0 - 130 µm/m-°C	37.8 - 72.2 µin/in-°F	Average value: 88.6 µm/m-°C Grade Count:14
	150 - 150 µm/m-°C @Temperature 60.0 - 138 °C	83.3 - 83.3 µin/in-°F @Temperature 140 - 280 °F	Average value: 150 µm/m-°C Grade Count:1
Specific Heat Capacity	1.50 - 1.85 J/g-°C	0.359 - 0.442 BTU/lb-°F	Average value: 1.65 J/g-°C Grade Count:3
Thermal Conductivity	0.159 - 0.270 W/m-K	1.10 - 1.87 BTU-in/hr- ft ² -°F	Average value: 0.211 W/m-K Grade Count:11
Melting Point	200 - 228 °C	392 - 442 °F	Average value: 224 °C Grade Count:19
Deflection Temperature at 0.46 MPa (66 psi)	154 - 220 °C	310 - 428 °F	Average value: 192 °C Grade Count:32
Deflection Temperature at 1.8 MPa (264 psi)	62.8 - 213 °C	145 - 415 °F	Average value: 136 °C Grade Count:47
Vicat Softening Point	180 - 245 °C	356 - 473 °F	Average value: 202 °C Grade Count:11
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:35
Flame Spread	24.0 - 100 mm/min	0.945 - 3.94 in/min	Average value: 74.7 mm/min Grade Count:3
Oxygen Index	21.0 - 23.0 %	21.0 - 23.0 %	Average value: 22.3 % Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+13 - 1.00e+18 ohm-cm	1.00e+13 - 1.00e+18 ohm-cm	Average value: 3.76e+16 ohm-cm Grade Count:33
Surface Resistance	1.00e+13 - 1.00e+17 ohm	1.00e+13 - 1.00e+17 ohm	Average value: 1.34e+16 ohm Grade Count:16
Dielectric Constant	2.60 - 4.20	2.60 - 4.20	Average value: 3.73 Grade Count:18
Dielectric Strength			Average value: 28.1 kV/mm Grade

Electrical Properties	15.0 - 100 kV/mm Metric	381 - 2540 kV/in English	Count:26 Comments
Dissipation Factor	0.00120 - 0.130	0.00120 - 0.130	Average value: 0.0194 Grade Count:15
Arc Resistance	120 - 150 sec	120 - 150 sec	Average value: 136 sec Grade Count:8
Comparative Tracking Index	125 - 500 V	125 - 500 V	Average value: 273 V Grade Count:12

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