

Overview of materials for Polybutylene Terephthalate (PBT), Flame Retardant

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Flame Retardant

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.13 - 1.75 g/cc	0.0408 - 0.0632 lb/in ³	Average value: 1.48 g/cc Grade Count:151
Filler Content	15.0 - 35.0 %	15.0 - 35.0 %	Average value: 25.5 % Grade Count:10
Water Absorption	0.000 - 0.600 %	0.000 - 0.600 %	Average value: 0.123 % Grade Count:52
Moisture Absorption at Equilibrium	0.0300 - 0.500 %	0.0300 - 0.500 %	Average value: 0.107 % Grade Count:57
Water Absorption at Saturation	0.350 - 0.500 %	0.350 - 0.500 %	Average value: 0.438 % Grade Count:4
Linear Mold Shrinkage	0.00170 - 0.0260 cm/cm	0.00170 - 0.0260 in/in	Average value: 0.0109 cm/cm Grade Count:137
Linear Mold Shrinkage, Transverse	0.00170 - 0.0300 cm/cm	0.00170 - 0.0300 in/in	Average value: 0.0116 cm/cm Grade Count:27
Melt Flow	3.00 - 82.0 g/10 min	3.00 - 82.0 g/10 min	Average value: 27.0 g/10 min Grade Count:35

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	79.0 - 88.0	79.0 - 88.0	Average value: 84.6 Grade Count:5
Hardness, Rockwell R	116 - 124	116 - 124	Average value: 119 Grade Count:30
Tensile Strength, Ultimate	29.0 - 147 MPa	4210 - 21300 psi	Average value: 70.3 MPa Grade Count:77
	12.0 - 85.0 MPa @Temperature 60.0 - 150 °C	1740 - 12300 psi @Temperature 140 - 302 °F	Average value: 41.5 MPa Grade Count:3
Tensile Strength, Yield	30.0 - 130 MPa	4350 - 18900 psi	Average value: 77.9 MPa Grade Count:91
Elongation at Break	1.00 - 145 %	1.00 - 145 %	Average value: 17.3 % Grade Count:85

Mechanical Properties	4.00 - 90.0 % Metric	4.00 - 90.0 % English	Comments Average value: 56.9 % Grade Count:3
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Elongation at Yield	2.00 - 75.0 %	2.00 - 75.0 %	Average value: 13.0 % Grade Count:27
	4.50 - 10.0 %	4.50 - 10.0 %	
	@Temperature 60.0 - 90.0 °C	@Temperature 140 - 194 °F	Average value: 7.00 % Grade Count:2
Modulus of Elasticity	0.750 - 11.0 GPa	109 - 1600 ksi	Average value: 3.95 GPa Grade Count:46
	0.350 - 7.20 GPa	50.8 - 1040 ksi	
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	Average value: 2.13 GPa Grade Count:3
Flexural Yield Strength	55.0 - 216 MPa	7980 - 31300 psi	Average value: 127 MPa Grade Count:121
	35.0 - 35.0 MPa	5080 - 5080 psi	
	@Temperature 90.0 - 90.0 °C	@Temperature 194 - 194 °F	Average value: 35.0 MPa Grade Count:1
Flexural Modulus	1.57 - 11.0 GPa	228 - 1600 ksi	Average value: 5.37 GPa Grade Count:127
	0.600 - 0.600 GPa	87.0 - 87.0 ksi	
	@Temperature 90.0 - 90.0 °C	@Temperature 194 - 194 °F	Average value: 0.600 GPa Grade Count:1
Izod Impact, Notched	0.250 - 6.41 J/cm	0.468 - 12.0 ft-lb/in	Average value: 1.05 J/cm Grade Count:69
	1.53 - 3.2034 J/cm	2.87 - 6.0013 ft-lb/in	
	@Temperature -40.0 - -30.0 °C	@Temperature -40.0 - -22.0 °F	Average value: 2.37 J/cm Grade Count:2
Izod Impact, Unnotched	0.588 J/cm - NB	1.10 ft-lb/in - NB	Average value: 7.79 J/cm Grade Count:8
Izod Impact, Notched (ISO)	4.00 - 45.0 kJ/m ²	1.90 - 21.4 ft-lb/in ²	Average value: 8.51 kJ/m ² Grade Count:51
	2.00 - 10.0 kJ/m ²	0.952 - 4.76 ft-lb/in ²	
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	Average value: 5.50 kJ/m ² Grade Count:4
Izod Impact, Unnotched (ISO)	30.0 - 80.0 kJ/m ²	14.3 - 38.1 ft-lb/in ²	Average value: 52.4 kJ/m ² Grade Count:45
	42.0 - 42.0 kJ/m ²	20.0 - 20.0 ft-lb/in ²	
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	Average value: 42.0 kJ/m ² Grade Count:1

Charpy Impact Unnotched Mechanical Properties	2.00 J/cm ² - NB Metric	9.52 ft-lb/in ² - NB English	Average value: 6.08 J/cm ² Grade Count:31 Comments
	2.50 - 999.9 J/cm ² @Temperature -30.0 - - 20.0 °C	11.9 - 4759 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 8.16 J/cm ² Grade Count:22
Charpy Impact, Notched	0.160 - 4.50 J/cm ²	0.761 - 21.4 ft-lb/in ²	Average value: 0.723 J/cm ² Grade Count:35
	0.200 - 1.00 J/cm ² @Temperature -30.0 - - 20.0 °C	0.952 - 4.76 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 0.620 J/cm ² Grade Count:20
Gardner Impact	9.49 - 43.0 J	7.00 - 31.7 ft-lb	Average value: 30.4 J Grade Count:8
Tensile Impact Strength	45.0 - 100 kJ/m ²	21.4 - 47.6 ft-lb/in ²	Average value: 65.0 kJ/m ² Grade Count:3
Tensile Creep Modulus, 1 hour	950 - 3000 MPa	138000 - 435000 psi	Average value: 2310 MPa Grade Count:8
Tensile Creep Modulus, 1000 hours	650 - 1800 MPa	94300 - 261000 psi	Average value: 1460 MPa Grade Count:8

Thermal Properties	Metric	English	Comments
CTE, linear	19.8 - 139 µm/m-°C	11.0 - 77.2 µin/in-°F	Average value: 72.2 µm/m-°C Grade Count:46
	124 - 124 µm/m-°C @Temperature 60.0 - 138 °C	68.9 - 68.9 µin/in-°F @Temperature 140 - 280 °F	Average value: 124 µm/m-°C Grade Count:1
CTE, linear, Transverse to Flow	84.0 - 120 µm/m-°C	46.7 - 66.7 µin/in-°F	Average value: 103 µm/m-°C Grade Count:14
Thermal Conductivity	0.173 - 14.0 W/m-K	1.20 - 97.2 BTU-in/hr- ft ² -°F	Average value: 3.31 W/m-K Grade Count:4
Melting Point	200 - 240 °C	392 - 464 °F	Average value: 222 °C Grade Count:30

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1e+05 - 1.00e+17 ohm- cm	1e+05 - 1.00e+17 ohm- cm	Average value: 1.51e+16 ohm-cm Grade Count:106
Surface Resistance	1.00e+8 - 1.00e+17 ohm	1.00e+8 - 1.00e+17 ohm	Average value: 3.60e+15 ohm Grade Count:34
Dielectric Constant	2.80 - 4.00	2.80 - 4.00	Average value: 3.25 Grade Count:84
Dielectric Strength	15.0 - 42.9 kV/mm	381 - 1090 kV/in	Average value: 22.3 kV/mm Grade Count:104
Dissipation Factor	0.00100 - 0.0300	0.00100 - 0.0300	Average value: 0.0132 Grade Count:28

Electrical Properties	Metric	English	Comments
Arc Resistance	21.0 - 120 sec	21.0 - 120 sec	Average value: 97.1 sec Grade Count:16
Comparative Tracking Index	0.000 - 600 V	0.000 - 600 V	Average value: 339 V Grade Count:34
Hot Wire Ignition, HWI	7.00 - 120 sec	7.00 - 120 sec	Average value: 34.5 sec Grade Count:6
High Amp Arc Ignition, HAI	15.0 - 120 arcs	15.0 - 120 arcs	Average value: 98.0 arcs Grade Count:6
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	Average value: 127 mm/min Grade Count:6

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