

Overview of materials for Polybutylene Terephthalate (PBT), Extrusion Grade

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Extrusion Grade

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.22 - 1.45 g/cc	0.0441 - 0.0524 lb/in ³	Average value: 1.32 g/cc Grade Count:30
Water Absorption	0.0800 - 0.600 %	0.0800 - 0.600 %	Average value: 0.391 % Grade Count:16
Moisture Absorption at Equilibrium	0.0800 - 0.200 %	0.0800 - 0.200 %	Average value: 0.175 % Grade Count:16
Viscosity Test	105 - 158 cm ³ /g	105 - 158 cm ³ /g	Average value: 137 cm ³ /g Grade Count:5
Linear Mold Shrinkage	0.00160 - 0.0230 cm/cm	0.00160 - 0.0230 in/in	Average value: 0.00963 cm/cm Grade Count:12
Linear Mold Shrinkage, Transverse	0.00160 - 0.0160 cm/cm	0.00160 - 0.0160 in/in	Average value: 0.00390 cm/cm Grade Count:7
Melt Flow	9.50 - 236 g/10 min	9.50 - 236 g/10 min	Average value: 41.6 g/10 min Grade Count:18

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	79.0 - 119	79.0 - 119	Average value: 108 Grade Count:5
Tensile Strength, Ultimate	34.0 - 68.0 MPa	4930 - 9860 psi	Average value: 55.1 MPa Grade Count:14
Tensile Strength, Yield	35.0 - 62.0 MPa	5080 - 8990 psi	Average value: 52.4 MPa Grade Count:19
Elongation at Break	2.90 - 300 %	2.90 - 300 %	Average value: 70.8 % Grade Count:29
Elongation at Yield	2.90 - 8.00 %	2.90 - 8.00 %	Average value: 4.71 % Grade Count:17
Modulus of Elasticity	1.70 - 2.86 GPa	247 - 415 ksi	Average value: 2.49 GPa Grade Count:19
Flexural Yield Strength	78.5 - 94.0 MPa	11400 - 13600 psi	Average value: 82.1 MPa Grade Count:6
	0.196 - 2.55 GPa	28.4 - 370 ksi	Average value: 2.06 GPa Grade

Flexural Modulus Mechanical Properties	Metric	English	Count:12 Comments
Izod Impact, Notched	0.481 - 0.800 J/cm	0.900 - 1.50 ft-lb/in	Average value: 0.540 J/cm Grade Count:6
Izod Impact, Notched (ISO)	7.00 - 7.00 kJ/m ² @Temperature -30.0 - - 30.0 °C	3.33 - 3.33 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 7.00 kJ/m ² Grade Count:1
Izod Impact, Unnotched (ISO)	NB - NB @Temperature -30.0 - - 30.0 °C	NB - NB @Temperature -22.0 - - 22.0 °F	Grade Count:1
Charpy Impact Unnotched	13.5 J/cm ² - NB	64.2 ft-lb/in ² - NB	Average value: 16.8 J/cm ² Grade Count:15
	12.0 J/cm ² - NB @Temperature -30.0 - - 30.0 °C	57.1 ft-lb/in ² - NB @Temperature -22.0 - - 22.0 °F	Average value: 18.3 J/cm ² Grade Count:14
Charpy Impact, Notched	0.160 - 7.50 J/cm ²	0.761 - 35.7 ft-lb/in ²	Average value: 1.35 J/cm ² Grade Count:19
	0.500 - 2.50 J/cm ² @Temperature -30.0 - - 30.0 °C	2.38 - 11.9 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 1.08 J/cm ² Grade Count:13
Puncture Energy	14.7 - 44.0 J	10.8 - 32.5 ft-lb	Average value: 31.1 J Grade Count:6
	2.00 - 32.0 J @Temperature -30.0 - - 30.0 °C	1.48 - 23.6 ft-lb @Temperature -22.0 - - 22.0 °F	Average value: 17.6 J Grade Count:5
Tensile Creep Modulus, 1 hour	1400 - 2400 MPa	203000 - 348000 psi	Average value: 2120 MPa Grade Count:9
Tensile Creep Modulus, 1000 hours	700 - 1600 MPa	102000 - 232000 psi	Average value: 1280 MPa Grade Count:9

Thermal Properties	Metric	English	Comments
CTE, linear	40.0 - 130 µm/m-°C	22.2 - 72.2 µin/in-°F	Average value: 99.8 µm/m-°C Grade Count:22
CTE, linear, Transverse to Flow	70.0 - 130 µm/m-°C	38.9 - 72.2 µin/in-°F	Average value: 111 µm/m-°C Grade Count:16
Melting Point	221 - 254 °C	430 - 489 °F	Average value: 226 °C Grade Count:20
Deflection Temperature at 0.46 MPa (66 psi)	90.0 - 170 °C	194 - 338 °F	Average value: 144 °C Grade Count:21
Deflection Temperature at 1.8 MPa (264 psi)	50.0 - 78.0 °C	122 - 172 °F	Average value: 60.2 °C Grade Count:30
Deflection Temperature at 8.0 MPa	45.0 - 50.0 °C	113 - 122 °F	Average value: 46.4 °C Grade Count:10

Thermal Properties	Metric	English	Comments
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:27
Oxygen Index	22.0 - 30.0 %	22.0 - 30.0 %	Average value: 25.0 % Grade Count:9

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 1.00e+17 ohm-cm	1.00e+14 - 1.00e+17 ohm-cm	Average value: 9.01e+15 ohm-cm Grade Count:17
Surface Resistance	1.00e+14 - 1.00e+17 ohm	1.00e+14 - 1.00e+17 ohm	Average value: 8.01e+15 ohm Grade Count:14
Dielectric Constant	3.10 - 3.80	3.10 - 3.80	Average value: 3.32 Grade Count:18
Dielectric Strength	15.7 - 30.2 kV/mm	399 - 767 kV/in	Average value: 26.3 kV/mm Grade Count:19
Dissipation Factor	0.00100 - 0.0240	0.00100 - 0.0240	Average value: 0.0106 Grade Count:15
Arc Resistance	110 - 180 sec	110 - 180 sec	Average value: 130 sec Grade Count:4
Comparative Tracking Index	250 - 600 V	250 - 600 V	Average value: 563 V Grade Count:14

Processing Properties	Metric	English	Comments
Melt Temperature	250 - 260 °C	482 - 500 °F	Average value: 258 °C Grade Count:15
Mold Temperature	60.0 - 100 °C	140 - 212 °F	Average value: 80.0 °C Grade Count:16

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