

Overview of materials for Polybutylene Terephthalate (PBT), Carbon Fiber Filled

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Carbon Fiber Filled

Material Notes:

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

| Physical Properties | Metric | English | Comments |
|-----------------------|-------------------------|------------------------------------|---|
| Density | 1.30 - 1.75 g/cc | 0.0470 - 0.0632 lb/in ³ | Average value: 1.43 g/cc Grade Count:40 |
| Filler Content | 3.00 - 50.0 % | 3.00 - 50.0 % | Average value: 19.4 % Grade Count:12 |
| Water Absorption | 0.0200 - 0.100 % | 0.0200 - 0.100 % | Average value: 0.0905 % Grade Count:21 |
| Additive Loading | 30.0 - 40.0 % | 30.0 - 40.0 % | Average value: 32.0 % Grade Count:5 |
| Linear Mold Shrinkage | 0.000500 - 0.0150 cm/cm | 0.000500 - 0.0150 in/in | Average value: 0.00348 cm/cm Grade Count:37 |
| Melt Flow | 0.880 - 56.4 g/10 min | 0.880 - 56.4 g/10 min | Average value: 21.7 g/10 min Grade Count:9 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|----------------------------|---------------------------|--|
| Hardness, Rockwell R | 118 - 121 | 118 - 121 | Average value: 119 Grade Count:4 |
| Tensile Strength, Ultimate | 70.0 - 165 MPa | 10200 - 24000 psi | Average value: 123 MPa Grade Count:38 |
| | 45.0 - 110 MPa | 6530 - 16000 psi | Average value: 73.8 MPa Grade Count:1 |
| | @Temperature 60.0 - 150 °C | @Temperature 140 - 302 °F | |
| Elongation at Break | 0.500 - 6.00 % | 0.500 - 6.00 % | Average value: 2.40 % Grade Count:25 |
| | 1.30 - 2.00 % | 1.30 - 2.00 % | Average value: 1.63 % Grade Count:1 |
| | @Temperature 60.0 - 150 °C | @Temperature 140 - 302 °F | |
| Elongation at Yield | 0.800 - 4.50 % | 0.800 - 4.50 % | Average value: 2.36 % Grade Count:15 |
| Modulus of Elasticity | 6.00 - 40.0 GPa | 870 - 5800 ksi | Average value: 14.7 GPa Grade Count:36 |
| | 4.70 - 15.5 GPa | 682 - 2250 ksi | |

| Mechanical Properties | Metric @ Temperature 60.0 - 150 °C | English @ Temperature 140 - 302 °F | Comments Average value: 8.93 GPa Grade Count:1 |
|---------------------------------|--|--|---|
| Flexural Yield Strength | 105 - 248 MPa | 15200 - 36000 psi | Average value: 180 MPa Grade Count:38 |
| Flexural Modulus | 5.00 - 27.6 GPa | 725 - 4000 ksi | Average value: 11.8 GPa Grade Count:38 |
| Izod Impact, Notched | 0.320 - 2.14 J/cm | 0.600 - 4.00 ft-lb/in | Average value: 0.644 J/cm Grade Count:22 |
| Izod Impact, Unnotched | 3.74 - 6.94 J/cm | 7.00 - 13.0 ft-lb/in | Average value: 4.68 J/cm Grade Count:19 |
| Izod Impact, Notched (ISO) | 4.00 - 7.00 kJ/m ² | 1.90 - 3.33 ft-lb/in ² | Average value: 5.33 kJ/m ² Grade Count:3 |
| | 6.00 - 6.00 kJ/m ² @Temperature -30.0 - - 30.0 °C | 2.86 - 2.86 ft-lb/in ² @Temperature -22.0 - - 22.0 °F | Average value: 6.00 kJ/m ² Grade Count:1 |
| Izod Impact, Unnotched (ISO) | 25.0 - 45.0 kJ/m ² | 11.9 - 21.4 ft-lb/in ² | Average value: 33.3 kJ/m ² Grade Count:3 |
| | 40.0 - 40.0 kJ/m ² @Temperature -30.0 - - 30.0 °C | 19.0 - 19.0 ft-lb/in ² @Temperature -22.0 - - 22.0 °F | Average value: 40.0 kJ/m ² Grade Count:1 |
| Charpy Impact Unnotched | 2.00 - 4.50 J/cm ² | 9.52 - 21.4 ft-lb/in ² | Average value: 3.26 J/cm ² Grade Count:15 |
| | 4.00 - 4.00 J/cm ² @Temperature -30.0 - - 30.0 °C | 19.0 - 19.0 ft-lb/in ² @Temperature -22.0 - - 22.0 °F | Average value: 4.00 J/cm ² Grade Count:1 |
| Coefficient of Friction | 0.140 - 0.240 | 0.140 - 0.240 | Average value: 0.190 Grade Count:5 |
| Coefficient of Friction, Static | 0.100 - 0.190 | 0.100 - 0.190 | Average value: 0.148 Grade Count:5 |

| Thermal Properties | Metric | English | Comments |
|--|---------------------|-----------------------|--|
| CTE, linear | 16.0 - 48.6 µm/m-°C | 8.89 - 27.0 µin/in-°F | Average value: 25.1 µm/m-°C Grade Count:4 |
| Melting Point | 225 - 227 °C | 437 - 441 °F | Average value: 227 °C Grade Count:4 |
| Maximum Service Temperature, Air | 120 - 180 °C | 248 - 356 °F | Average value: 150 °C Grade Count:15 |
| Deflection Temperature at 0.46 MPa (66 psi) | 182 - 224 °C | 360 - 435 °F | Average value: 202 °C Grade Count:7 |
| Deflection Temperature at 1.8 MPa (264 psi) | 171 - 226 °C | 340 - 438 °F | Average value: 202 °C Grade Count:18 |
| Vicat Softening Point | 205 - 225 °C | 401 - 437 °F | Average value: 213 °C Grade Count:6 |

| Flammability: UL 94 Thermal Properties | HB - V-0 Metric | HB - V-0 English | Grade Count:22 Comments |
|---|--------------------|---------------------|----------------------------|
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| Electrical Properties | Metric | English | Comments |
|------------------------|-----------------------|-----------------------|---|
| Electrical Resistivity | 10.0 - 1.00e+9 ohm-cm | 10.0 - 1.00e+9 ohm-cm | Average value: 5.67e+7 ohm-cm Grade Count:19 |
| Surface Resistance | 10.0 - 1.00e+12 ohm | 10.0 - 1.00e+12 ohm | Average value: 3.89e+10 ohm Grade Count:26 |
| Insulation Resistance | 10.0 - 1.00e+10 ohm | 10.0 - 1.00e+10 ohm | Average value: 7.22e+8 ohm Grade Count:14 |
| Static Decay | 0.500 - 2.00 sec | 0.500 - 2.00 sec | Average value: 1.50 sec Grade Count:6 |

| Processing Properties | Metric | English | Comments |
|------------------------|-------------------|-------------------|---|
| Processing Temperature | 232 - 270 °C | 450 - 518 °F | Average value: 249 °C Grade Count:19 |
| Nozzle Temperature | 250 - 265 °C | 482 - 509 °F | Average value: 258 °C Grade Count:14 |
| Melt Temperature | 238 - 280 °C | 460 - 536 °F | Average value: 258 °C Grade Count:30 |
| Mold Temperature | 60.0 - 120 °C | 140 - 248 °F | Average value: 91.2 °C Grade Count:35 |
| Drying Temperature | 80.0 - 130 °C | 176 - 266 °F | Average value: 108 °C Grade Count:31 |
| Moisture Content | 0.0300 - 0.0800 % | 0.0300 - 0.0800 % | Average value: 0.0331 % Grade Count:16 |
| Dew Point | -28.9 °C | -20.0 °F | Average value: -28.9 °C Grade Count:15 |
| Injection Pressure | 68.9 - 103 MPa | 10000 - 15000 psi | Average value: 86.2 MPa Grade Count:19 |

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