

Overview of materials for Polycarbonate, Carbon + PTFE Filled

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Carbon + PTFE Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polycarbonate, Carbon + PTFE 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-Polycarbonate-Carbon-PTFE-Filled.php

Physical Properties	Metric	English	Comments
Density	1.27 - 1.50 g/cc	0.0459 - 0.0542 lb/in ³	Average value: 1.36 g/cc Grade Count:57
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 19.8 % Grade Count:29
Water Absorption	0.0600 - 0.310 %	0.0600 - 0.310 %	Average value: 0.118 % Grade Count:32
Additive Loading	10.0 - 15.0 %	10.0 - 15.0 %	Average value: 11.7 % Grade Count:3
Linear Mold Shrinkage	0.000 - 0.0100 cm/cm	0.000 - 0.0100 in/in	Average value: 0.00164 cm/cm Grade Count:50
Linear Mold Shrinkage, Transverse	0.000800 - 0.00500 cm/cm	0.000800 - 0.00500 in/in	Average value: 0.00373 cm/cm Grade Count:9

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	116 - 120	116 - 120	Average value: 118 Grade Count:5
Tensile Strength, Ultimate	89.6 - 193 MPa	13000 - 28000 psi	Average value: 121 MPa Grade Count:58
Tensile Strength, Yield	91.7 - 129 MPa	13300 - 18700 psi	Average value: 110 MPa Grade Count:7
Elongation at Break	1.00 - 10.0 %	1.00 - 10.0 %	Average value: 2.65 % Grade Count:54
Elongation at Yield	1.90 - 6.00 %	1.90 - 6.00 %	Average value: 2.97 % Grade Count:10
Modulus of Elasticity	6.89 - 24.1 GPa	999 - 3500 ksi	Average value: 12.3 GPa Grade Count:43
Flexural Yield Strength	121 - 255 MPa	17500 - 37000 psi	Average value: 181 MPa Grade Count:55
Flexural Modulus	6.21 - 21.7 GPa	900 - 3150 ksi	Average value: 11.2 GPa Grade Count:53
Izod Impact, Notched	0.427 - 3.50 J/cm	0.800 - 6.56 ft-lb/in	Average value: 0.972 J/cm Grade Count:56

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched (ISO)	7.20 - 8.95 kJ/m ²	3.43 - 4.26 ft-lb/in ²	Average value: 8.05 kJ/m ² Grade Count:5
Izod Impact, Unnotched (ISO)	22.0 - 34.0 kJ/m ²	10.5 - 16.2 ft-lb/in ²	Average value: 27.8 kJ/m ² Grade Count:5
Charpy Impact Unnotched	3.00 - 4.50 J/cm ²	14.3 - 21.4 ft-lb/in ²	Average value: 3.50 J/cm ² Grade Count:3
Falling Dart Impact	11.3 - 16.1 J	8.33 - 11.9 ft-lb	Average value: 13.5 J Grade Count:8
Coefficient of Friction	0.160 - 0.430	0.160 - 0.430	Average value: 0.253 Grade Count:3
Coefficient of Friction, Static	0.220 - 0.340	0.220 - 0.340	Average value: 0.267 Grade Count:3
K (wear) Factor	7.00 - 76.5 x 10 ⁻⁸ mm ³ /N-M	3.47 - 38.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Average value: 30.8 x 10 ⁻⁸ mm ³ /N-M Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	18.0 - 40.0 µm/m-°C	10.0 - 22.2 µin/in-°F	Average value: 28.8 µm/m-°C Grade Count:9
CTE, linear, Transverse to Flow	32.0 - 45.0 µm/m-°C	17.8 - 25.0 µin/in-°F	Average value: 38.0 µm/m-°C Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	135 - 151 °C	275 - 304 °F	Average value: 145 °C Grade Count:32
Deflection Temperature at 1.8 MPa (264 psi)	132 - 149 °C	270 - 300 °F	Average value: 142 °C Grade Count:49
Vicat Softening Point	147 - 150 °C	297 - 302 °F	Average value: 149 °C Grade Count:3
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:39

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 1.00e+7 ohm-cm	1.00 - 1.00e+7 ohm-cm	Average value: 160000 ohm-cm Grade Count:39
Surface Resistance	10.0 - 1.00e+7 ohm	10.0 - 1.00e+7 ohm	Average value: 797000 ohm Grade Count:21

Processing Properties	Metric	English	Comments
Processing Temperature	249 - 293 °C	480 - 560 °F	Average value: 271 °C Grade Count:15
Nozzle Temperature	271 - 316 °C	520 - 601 °F	Average value: 293 °C Grade Count:8
Melt Temperature	254 - 327 °C	489 - 621 °F	Average value: 296 °C Grade Count:36
Mold Temperature	48.9 - 121 °C	120 - 250 °F	Average value: 91.4 °C Grade Count:51

Drying Temperature Processing Properties	110 - 130 °C Metric	230 - 266 °F English	Average value: 121 °C Grade Count:36 Comments
Moisture Content	0.0200 %	0.0200 %	Average value: 0.0200 % Grade Count:32
Dew Point	-28.9 °C	-20.0 °F	Average value: -28.9 °C Grade Count:17
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:32
Vent Depth	0.00250 - 0.00760 cm	0.000984 - 0.00299 in	Average value: 0.00505 cm Grade Count:8

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