

Overview of materials for Polycarbonate, Glass + PTFE Filled

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

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.28 - 1.61 g/cc	0.0462 - 0.0582 lb/in ³	Average value: 1.43 g/cc Grade Count:102
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 20.3 % Grade Count:44
Water Absorption	0.0170 - 0.250 %	0.0170 - 0.250 %	Average value: 0.123 % Grade Count:62
Additive Loading	15.0 - 30.0 %	15.0 - 30.0 %	Average value: 20.8 % Grade Count:6
Linear Mold Shrinkage	0.000500 - 0.00800 cm/cm	0.000500 - 0.00800 in/in	Average value: 0.00313 cm/cm Grade Count:101
Linear Mold Shrinkage, Transverse	0.00400 - 0.00700 cm/cm	0.00400 - 0.00700 in/in	Average value: 0.00529 cm/cm Grade Count:7
Melt Flow	3.00 - 22.2 g/10 min	3.00 - 22.2 g/10 min	Average value: 12.0 g/10 min Grade Count:8

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	90.0 - 95.0	90.0 - 95.0	Average value: 92.3 Grade Count:3
Hardness, Rockwell R	114 - 120	114 - 120	Average value: 118 Grade Count:25
Tensile Strength, Ultimate	27.6 - 124 MPa	4000 - 18000 psi	Average value: 83.6 MPa Grade Count:99
Tensile Strength, Yield	0.539 - 117 MPa	78.2 - 17000 psi	Average value: 61.4 MPa Grade Count:12
Elongation at Break	1.00 - 120 %	1.00 - 120 %	Average value: 5.52 % Grade Count:79
Elongation at Yield	1.80 - 7.00 %	1.80 - 7.00 %	Average value: 3.54 % Grade Count:17
Modulus of Elasticity	2.41 - 13.8 GPa	350 - 2000 ksi	Average value: 6.03 GPa Grade Count:86
Flexural Yield Strength	39.3 - 193 MPa	5700 - 28000 psi	Average value: 132 MPa Grade Count:100

Flexural Modulus Mechanical Properties	2.28 - 10.7 GPa Metric	331 - 1550 ksi English	Average value: 5.47 GPa Grade Count:15 Comments
Compressive Yield Strength	72.4 - 110 MPa	10500 - 16000 psi	Average value: 92.2 MPa Grade Count:8
Izod Impact, Notched	0.320 - 12.3 J/cm	0.600 - 23.0 ft-lb/in	Average value: 1.73 J/cm Grade Count:89
Izod Impact, Unnotched	0.801 - 16.0 J/cm	1.50 - 30.0 ft-lb/in	Average value: 7.99 J/cm Grade Count:66
Izod Impact, Notched (ISO)	9.50 - 17.9 kJ/m ²	4.52 - 8.52 ft-lb/in ²	Average value: 12.8 kJ/m ² Grade Count:5
Izod Impact, Unnotched (ISO)	34.4 - 58.1 kJ/m ²	16.4 - 27.6 ft-lb/in ²	Average value: 43.5 kJ/m ² Grade Count:5
Charpy Impact Unnotched	2.70 - 6.00 J/cm ²	12.8 - 28.6 ft-lb/in ²	Average value: 3.82 J/cm ² Grade Count:12
	2.00 - 3.70 J/cm ² @Temperature -30.0 - - 30.0 °C	9.52 - 17.6 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 2.97 J/cm ² Grade Count:7
Charpy Impact, Notched	0.800 - 2.50 J/cm ²	3.81 - 11.9 ft-lb/in ²	Average value: 1.72 J/cm ² Grade Count:6
	2.00 - 2.00 J/cm ² @Temperature -30.0 - - 30.0 °C	9.52 - 9.52 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 2.00 J/cm ² Grade Count:2
Falling Dart Impact	11.6 - 18.4 J	8.56 - 13.6 ft-lb	Average value: 15.9 J Grade Count:6
Coefficient of Friction	0.150 - 0.550	0.150 - 0.550	Average value: 0.281 Grade Count:11
Coefficient of Friction, Static	0.120 - 0.480	0.120 - 0.480	Average value: 0.225 Grade Count:11
K (wear) Factor	15.0 - 254 x 10 ⁻⁸ mm ³ /N-M	7.45 - 126 x 10 ⁻¹⁰ in ³ - min/ft-lb-hr	Average value: 108 x 10 ^{<sup>-8</sup>}

Thermal Properties	Metric	English	Comments
CTE, linear	23.4 - 58.0 μm/m-°C	13.0 - 32.2 μin/in-°F	Average value: 36.3 μm/m-°C Grade Count:19
Thermal Conductivity	0.202 - 0.317 W/m-K	1.40 - 2.20 BTU-in/hr- ft ² -°F	Average value: 0.283 W/m-K Grade Count:15
Maximum Service Temperature, Air	130 - 150 °C	266 - 302 °F	Average value: 140 °C Grade Count:12
Deflection Temperature at 0.46 MPa (66 psi)	136 - 149 °C	277 - 300 °F	Average value: 145 °C Grade Count:46
Deflection Temperature at 1.8 MPa (264 psi)	121 - 152 °C	250 - 306 °F	Average value: 140 °C Grade Count:73
Vicat Softening Point	150 - 170 °C	302 - 338 °F	Average value: 161 °C Grade Count:10

Flammability: UL 94 Thermal Properties	HB - 5VA Metric	HB - 5VA English	Grade Count:73 Comments
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Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+16 ohm-cm	1000 - 1.00e+16 ohm-cm	Average value: 7.38e+15 ohm-cm Grade Count:53
Surface Resistance	1000 - 1.00e+16 ohm	1000 - 1.00e+16 ohm	Average value: 7.72e+14 ohm Grade Count:13
Insulation Resistance	1.00e+12 ohm	1.00e+12 ohm	Average value: 1.00e+12 ohm Grade Count:10
Dielectric Constant	3.20 - 3.40	3.20 - 3.40	Average value: 3.34 Grade Count:5
Dielectric Strength	17.7 - 18.1 kV/mm	450 - 460 kV/in	Average value: 17.9 kV/mm Grade Count:5
Dissipation Factor	0.00700 - 0.0100	0.00700 - 0.0100	Average value: 0.00780 Grade Count:5
Arc Resistance	120 sec	120 sec	Average value: 120 sec Grade Count:3

Processing Properties	Metric	English	Comments
Processing Temperature	249 - 299 °C	480 - 570 °F	Average value: 280 °C Grade Count:34
Nozzle Temperature	282 - 310 °C	540 - 590 °F	Average value: 299 °C Grade Count:13
Melt Temperature	221 - 338 °C	430 - 640 °F	Average value: 302 °C Grade Count:70
Mold Temperature	65.6 - 121 °C	150 - 250 °F	Average value: 96.4 °C Grade Count:90
Drying Temperature	110 - 130 °C	230 - 266 °F	Average value: 121 °C Grade Count:67
Moisture Content	0.0200 %	0.0200 %	Average value: 0.0200 % Grade Count:42
Dew Point	-28.9 °C	-20.0 °F	Average value: -28.9 °C Grade Count:35
Injection Pressure	41.4 - 138 MPa	6000 - 20000 psi	Average value: 86.8 MPa Grade Count:57

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