

Overview of materials for Polycarbonate, 30% Glass Filled

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, 30% Glass Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polycarbonate, 30% Glass Filled". Specific grades with glass content between 25% and 34% are included. 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-30-Glass-Filled.php

Physical Properties	Metric	English	Comments
Density	1.11 - 1.57 g/cc	0.0401 - 0.0567 lb/in ³	Average value: 1.43 g/cc Grade Count:98
Filler Content	25.0 - 30.0 %	25.0 - 30.0 %	Average value: 29.4 % Grade Count:24
Water Absorption	0.0600 - 0.300 %	0.0600 - 0.300 %	Average value: 0.127 % Grade Count:46
Moisture Absorption at Equilibrium	0.0800 - 0.200 %	0.0800 - 0.200 %	Average value: 0.133 % Grade Count:6
Water Absorption at Saturation	0.100 - 0.400 %	0.100 - 0.400 %	Average value: 0.252 % Grade Count:6
Viscosity	250000 - 250000 cP @Temperature 260 - 260 °C	250000 - 250000 cP @Temperature 500 - 500 °F	Average value: 250000 cP Grade Count:1
	250000 - 250000 cP @Shear Rate 1000 - 1000 1/s	250000 - 250000 cP @Shear Rate 1000 - 1000 1/s	Average value: 250000 cP Grade Count:1
Viscosity Test	48.0 cm ³ /g	48.0 cm ³ /g	Average value: 48.0 cm ³ /g Grade Count:3
Maximum Moisture Content	0.0200	0.0200	Average value: 0.0200 Grade Count:4
Linear Mold Shrinkage	0.000 - 0.0300 cm/cm	0.000 - 0.0300 in/in	Average value: 0.00259 cm/cm Grade Count:88
Linear Mold Shrinkage, Transverse	0.00300 - 0.00600 cm/cm	0.00300 - 0.00600 in/in	Average value: 0.00410 cm/cm Grade Count:15
Melt Flow	3.00 - 25.0 g/10 min	3.00 - 25.0 g/10 min	Average value: 8.86 g/10 min Grade Count:38

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	86.0 - 95.0	86.0 - 95.0	Average value: 91.7 Grade Count:12

Hardness, Rockwell R Mechanical Properties	115 - 123 Metric	115 - 123 English	Average value: 119 Grade Count:27 Comments
Tensile Strength, Ultimate	55.0 - 145 MPa	7980 - 21000 psi	Average value: 117 MPa Grade Count:71
	50.0 - 80.0 MPa @Temperature 60.0 - 120 °C	7250 - 11600 psi @Temperature 140 - 248 °F	Average value: 66.7 MPa Grade Count:1
Tensile Strength, Yield	75.8 - 131 MPa	11000 - 19000 psi	Average value: 116 MPa Grade Count:40
Elongation at Break	1.00 - 9.00 %	1.00 - 9.00 %	Average value: 3.19 % Grade Count:82
	1.40 - 1.50 % @Temperature 60.0 - 120 °C	1.40 - 1.50 % @Temperature 140 - 248 °F	Average value: 1.47 % Grade Count:1
Elongation at Yield	3.00 - 5.00 %	3.00 - 5.00 %	Average value: 4.00 % Grade Count:7
Modulus of Elasticity	3.80 - 10.5 GPa	551 - 1520 ksi	Average value: 7.73 GPa Grade Count:38
	6.20 - 7.50 GPa @Temperature 60.0 - 120 °C	899 - 1090 ksi @Temperature 140 - 248 °F	Average value: 6.90 GPa Grade Count:1
Flexural Yield Strength	95.0 - 220 MPa	13800 - 31900 psi	Average value: 167 MPa Grade Count:81
Flexural Modulus	3.33 - 9.65 GPa	484 - 1400 ksi	Average value: 7.20 GPa Grade Count:89
Compressive Yield Strength	110 - 138 MPa	16000 - 20000 psi	Average value: 120 MPa Grade Count:7
Izod Impact, Notched	0.427 - 1.96 J/cm	0.800 - 3.67 ft-lb/in	Average value: 1.22 J/cm Grade Count:76
Izod Impact, Unnotched	0.981 - 11.2 J/cm	1.84 - 21.0 ft-lb/in	Average value: 7.34 J/cm Grade Count:21
Izod Impact, Notched (ISO)	10.0 - 15.0 kJ/m ²	4.76 - 7.14 ft-lb/in ²	Average value: 12.2 kJ/m ² Grade Count:6
	11.0 - 12.0 kJ/m ² @Temperature -30.0 - -30.0 °C	5.23 - 5.71 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 11.7 kJ/m ² Grade Count:3
Izod Impact, Unnotched (ISO)	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	3.00 - 4.50 J/cm ²	14.3 - 21.4 ft-lb/in ²	Average value: 3.90 J/cm ² Grade Count:10
	3.20 - 3.20 J/cm ²	15.2 - 15.2 ft-lb/in ²	Average value: 3.20 J/cm ² Grade

Mechanical Properties	Metric @Temperature -20.0 - - 20.0 °C	English @Temperature -4.00 - - 4.00 °F	Count:1 Comments
Charpy Impact, Notched	0.400 - 1.20 J/cm ²	1.90 - 5.71 ft-lb/in ²	Average value: 0.842 J/cm ² Grade Count:12
	0.600 - 0.680 J/cm ² @Temperature -20.0 - - 20.0 °C	2.86 - 3.24 ft-lb/in ² @Temperature -4.00 - - 4.00 °F	Average value: 0.616 J/cm ² Grade Count:5

Thermal Properties	Metric	English	Comments
CTE, linear	10.0 - 50.0 µm/m-°C	5.56 - 27.8 µin/in-°F	Average value: 25.9 µm/m-°C Grade Count:27
CTE, linear, Transverse to Flow	60.0 µm/m-°C	33.3 µin/in-°F	Average value: 60.0 µm/m-°C Grade Count:7
Thermal Conductivity	0.220 - 0.317 W/m-K	1.53 - 2.20 BTU-in/hr- ft ² -°F	Average value: 0.272 W/m-K Grade Count:9
Maximum Service Temperature, Air	120 - 140 °C	248 - 284 °F	Average value: 128 °C Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	98.9 - 182 °C	210 - 360 °F	Average value: 147 °C Grade Count:63
Deflection Temperature at 1.8 MPa (264 psi)	90.6 - 149 °C	195 - 300 °F	Average value: 142 °C Grade Count:83
Vicat Softening Point	98.9 - 166 °C	210 - 331 °F	Average value: 150 °C Grade Count:29
UL RTI, Electrical	80.0 - 130 °C	176 - 266 °F	Average value: 109 °C Grade Count:13
UL RTI, Mechanical with Impact	80.0 - 130 °C	176 - 266 °F	Average value: 103 °C Grade Count:13
UL RTI, Mechanical without Impact	80.0 - 130 °C	176 - 266 °F	Average value: 107 °C Grade Count:13
Flammability, UL94	HB - 5VA	HB - 5VA	Average value: 2.00 Grade Count:67
Oxygen Index	31.0 - 36.0 %	31.0 - 36.0 %	Average value: 33.8 % Grade Count:6
Glow Wire Test	850 - 960 °C	1560 - 1760 °F	Average value: 919 °C Grade Count:8

Electrical Properties	Metric	English	Comments
Electrical Resistivity	100 - 1.00e+17 ohm- cm	100 - 1.00e+17 ohm- cm	Average value: 1.27e+16 ohm-cm Grade Count:37
Surface Resistance	100 - 1.00e+17 ohm	100 - 1.00e+17 ohm	Average value: 5.52e+15 ohm Grade Count:23
Static Decay	2.00 sec	2.00 sec	Average value: 2.00 sec Grade Count:3
Dielectric Constant	3.20 - 3.80	3.20 - 3.80	Average value: 3.42 Grade Count:22
			Average value: 29.2 kV/mm Grade

Dielectric Strength Electrical Properties	16.9 - 47.5 kV/mm Metric	430 - 1210 kV/in English	Count:26 Comments
Dissipation Factor	0.000800 - 0.00970	0.000800 - 0.00970	Average value: 0.00501 Grade Count:19
Arc Resistance	60.0 - 120 sec	60.0 - 120 sec	Average value: 114 sec Grade Count:9
Comparative Tracking Index	100 - 249 V	100 - 249 V	Average value: 178 V Grade Count:16

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