

Overview of materials for Polycarbonate, 10% Glass Filled

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, 10% Glass Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polycarbonate, 10% Glass Filled". Specific grades with glass content between 5% and 14% 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-10-Glass-Filled.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---|---|--|
| Density | 1.17 - 1.41 g/cc | 0.0423 - 0.0509 lb/in ³ | Average value: 1.26 g/cc Grade Count:151 |
| | 1.08 - 1.08 g/cc @Temperature 300 - 300 °C | 0.0390 - 0.0390 lb/in ³ @Temperature 572 - 572 °F | Average value: 1.08 g/cc Grade Count:5 |
| Filler Content | 5.00 - 10.0 % | 5.00 - 10.0 % | Average value: 9.31 % Grade Count:29 |
| Water Absorption | 0.0200 - 0.320 % | 0.0200 - 0.320 % | Average value: 0.171 % Grade Count:56 |
| Moisture Absorption at Equilibrium | 0.100 - 0.310 % | 0.100 - 0.310 % | Average value: 0.147 % Grade Count:13 |
| Water Absorption at Saturation | 0.120 - 0.310 % | 0.120 - 0.310 % | Average value: 0.220 % Grade Count:5 |
| Viscosity Test | 42.0 - 56.0 cm ³ /g | 42.0 - 56.0 cm ³ /g | Average value: 49.5 cm ³ /g Grade Count:4 |
| Maximum Moisture Content | 0.0200 | 0.0200 | Average value: 0.0200 Grade Count:5 |
| Linear Mold Shrinkage | 0.000300 - 0.0150 cm/cm | 0.000300 - 0.0150 in/in | Average value: 0.00402 cm/cm Grade Count:139 |
| Linear Mold Shrinkage, Transverse | 0.00100 - 0.00750 cm/cm | 0.00100 - 0.00750 in/in | Average value: 0.00486 cm/cm Grade Count:30 |
| Melt Flow | 5.00 - 36.0 g/10 min | 5.00 - 36.0 g/10 min | Average value: 12.7 g/10 min Grade Count:80 |
| Ash | 10.0 - 10.5 % | 10.0 - 10.5 % | Average value: 10.1 % Grade Count:6 |

| Mechanical Properties | Metric | English | Comments |
|-----------------------|-------------|-------------|------------------------------------|
| Hardness, Rockwell M | 70.0 - 90.0 | 70.0 - 90.0 | Average value: 83.4 Grade Count:17 |
| Hardness, Rockwell R | 89.0 - 124 | 89.0 - 124 | Average value: 117 Grade Count:37 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|-------------------------------|------------------------------|--|
| | 25.0 - 25.0 MPa | 3630 - 3630 psi | Average value: 65.2 MPa Grade Count:102 |
| | @Temperature 60.0 - 60.0 °C | @Temperature 140 - 140 °F | Average value: 25.0 MPa Grade Count:1 |
| Tensile Strength, Yield | 51.0 - 118 MPa | 7400 - 17100 psi | Average value: 68.7 MPa Grade Count:80 |
| Elongation at Break | 1.80 - 60.0 % | 1.80 - 60.0 % | Average value: 10.4 % Grade Count:118 |
| | 28.0 - 28.0 % | 28.0 - 28.0 % | Average value: 76.0 % Grade Count:1 |
| | @Temperature 60.0 - 120 °C | @Temperature 140 - 248 °F | |
| Elongation at Yield | 4.00 - 13.0 % | 4.00 - 13.0 % | Average value: 6.06 % Grade Count:17 |
| | 2.20 - 3.00 % | 2.20 - 3.00 % | Average value: 2.67 % Grade Count:1 |
| | @Temperature 60.0 - 120 °C | @Temperature 140 - 248 °F | |
| Modulus of Elasticity | 2.16 - 7.50 GPa | 313 - 1090 ksi | Average value: 3.63 GPa Grade Count:66 |
| | 2.20 - 2.90 GPa | 319 - 421 ksi | Average value: 2.63 GPa Grade Count:1 |
| | @Temperature 60.0 - 120 °C | @Temperature 140 - 248 °F | |
| Flexural Yield Strength | 82.7 - 186 MPa | 12000 - 27000 psi | Average value: 111 MPa Grade Count:115 |
| Flexural Modulus | 2.30 - 7.35 GPa | 334 - 1070 ksi | Average value: 3.53 GPa Grade Count:135 |
| Compressive Yield Strength | 89.6 - 97.0 MPa | 13000 - 14100 psi | Average value: 94.9 MPa Grade Count:8 |
| Izod Impact, Notched | 0.392 - 2.94 J/cm | 0.735 - 5.51 ft-lb/in | Average value: 1.15 J/cm Grade Count:117 |
| | 1.00 - 1.00 J/cm | 1.87 - 1.87 ft-lb/in | Average value: 0.945 J/cm Grade Count:3 |
| | @Temperature 0.000 - 0.000 °C | @Temperature 32.0 - 32.0 °F | |
| | 0.700 - 1.10 J/cm | 1.31 - 2.06 ft-lb/in | Average value: 0.945 J/cm Grade Count:2 |
| | @Temperature -40.0 - 0.000 °C | @Temperature -40.0 - 32.0 °F | |
| | 0.700 - 1.10 J/cm | 1.31 - 2.06 ft-lb/in | Average value: 0.945 J/cm Grade Count:2 |
| | @Thickness 3.20 - 3.20 mm | @Thickness 0.126 - 0.126 in | |
| Izod Impact, Unnotched | 0.290 J/cm - NB | 0.543 ft-lb/in - NB | Average value: 11.4 J/cm Grade Count:26 |

| Mechanical Properties | Metric | English | Comments |
|------------------------------|--|--|---|
| Charpy Impact, Notched (ISO) | 25.0 kJ/m ² | 1.9 ft-lb/in ² | Average value: 12.3 kJ/m ² Grade Count:13 |
| | 5.00 - 9.00 kJ/m ² @Temperature -30.0 - -30.0 °C | 2.38 - 4.28 ft-lb/in ² @Temperature -22.0 - -22.0 °F | Average value: 7.80 kJ/m ² Grade Count:5 |
| Charpy Impact Unnotched | 3.50 J/cm ² - NB | 16.7 ft-lb/in ² - NB | Average value: 4.77 J/cm ² Grade Count:9 |
| | 999.9 - 999.9 J/cm ² @Temperature -20.0 - -20.0 °C | 4759 - 4759 ft-lb/in ² @Temperature -4.00 - -4.00 °F | Grade Count:1 |
| Charpy Impact, Notched | 0.700 - 1.20 J/cm ² | 3.33 - 5.71 ft-lb/in ² | Average value: 0.896 J/cm ² Grade Count:13 |
| | 0.600 - 0.700 J/cm ² @Temperature -20.0 - -20.0 °C | 2.86 - 3.33 ft-lb/in ² @Temperature -4.00 - -4.00 °F | Average value: 0.680 J/cm ² Grade Count:5 |
| Puncture Energy | 25.0 - 35.0 J | 18.4 - 25.8 ft-lb | Average value: 28.0 J Grade Count:5 |
| | 10.0 - 30.0 J @Temperature -30.0 - -30.0 °C | 7.38 - 22.1 ft-lb @Temperature -22.0 - -22.0 °F | Average value: 19.0 J Grade Count:5 |

| Thermal Properties | Metric | English | Comments |
|----------------------------------|---------------------|---|--|
| CTE, linear | 3.24 - 88.0 μm/m-°C | 1.80 - 48.9 μin/in-°F | Average value: 40.3 μm/m-°C Grade Count:33 |
| CTE, linear, Transverse to Flow | 55.0 - 74.0 μm/m-°C | 30.6 - 41.1 μin/in-°F | Average value: 63.4 μm/m-°C Grade Count:13 |
| Specific Heat Capacity | 1.21 - 2.04 J/g-°C | 0.290 - 0.488 BTU/lb-°F | Average value: 1.61 J/g-°C Grade Count:7 |
| Thermal Conductivity | 0.191 - 0.663 W/m-K | 1.33 - 4.60 BTU-in/hr-ft ² -°F | Average value: 0.239 W/m-K Grade Count:16 |
| Maximum Service Temperature, Air | 80.0 - 150 °C | 176 - 302 °F | Average value: 131 °C Grade Count:8 |
| Hot Ball Pressure Test | 135 - 140 °C | 275 - 284 °F | Average value: 137 °C Grade Count:6 |

| Electrical Properties | Metric | English | Comments |
|------------------------|------------------------|------------------------|---|
| Electrical Resistivity | 3000 - 1.00e+17 ohm-cm | 3000 - 1.00e+17 ohm-cm | Average value: 1.56e+16 ohm-cm Grade Count:56 |
| Surface Resistance | 2000 - 1.00e+16 ohm | 2000 - 1.00e+16 ohm | Average value: 8.84e+14 ohm Grade Count:35 |
| Dielectric Constant | 2.80 - 3.30 | 2.80 - 3.30 | Average value: 3.11 Grade Count:35 |

| Electrical Properties | Metric | English | Comments |
|------------------------------|-------------------|-------------------|--|
| Dissipation Factor | 0.000800 - 0.0100 | 0.000800 - 0.0100 | Average value: 0.00580 Grade Count:27 |
| Arc Resistance | 110 - 125 sec | 110 - 125 sec | Average value: 120 sec Grade Count:13 |
| Comparative Tracking Index | 175 - 250 V | 175 - 250 V | Average value: 188 V Grade Count:28 |
| Hot Wire Ignition, HWI | 30.0 - 120 sec | 30.0 - 120 sec | Average value: 85.0 sec Grade Count:3 |
| High Amp Arc Ignition, HAI | 15.0 - 120 arcs | 15.0 - 120 arcs | Average value: 78.8 arcs Grade Count:3 |

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