

## Overview of materials for Polycarbonate, Glass Fiber Filled, Flame Retardant

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Glass Fiber Filled, Flame Retardant

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polycarbonate, Glass Fiber Filled, Flame Retardant". 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-Fiber-Filled-Flame-Retardant.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polycarbonate-Glass-Fiber-Filled-Flame-Retardant.php)

| Physical Properties                | Metric                   | English                            | Comments                                     |
|------------------------------------|--------------------------|------------------------------------|--|
| Density                            | 1.20 - 1.63 g/cc         | 0.0434 - 0.0589 lb/in <sup>3</sup> | Average value: 1.34 g/cc Grade Count:121     |
| Filler Content                     | 5.00 - 40.0 %            | 5.00 - 40.0 %                      | Average value: 21.0 % Grade Count:36         |
| Water Absorption                   | 0.0600 - 0.350 %         | 0.0600 - 0.350 %                   | Average value: 0.116 % Grade Count:52        |
| Moisture Absorption at Equilibrium | 0.100 - 0.250 %          | 0.100 - 0.250 %                    | Average value: 0.200 % Grade Count:5         |
| Water Absorption at Saturation     | 0.120 - 0.350 %          | 0.120 - 0.350 %                    | Average value: 0.210 % Grade Count:5         |
| Additive Loading                   | 10.0 - 30.0 %            | 10.0 - 30.0 %                      | Average value: 17.5 % Grade Count:8          |
| Linear Mold Shrinkage              | 0.000200 - 0.00900 cm/cm | 0.000200 - 0.00900 in/in           | Average value: 0.00341 cm/cm Grade Count:110 |
| Linear Mold Shrinkage, Transverse  | 0.00200 - 0.00750 cm/cm  | 0.00200 - 0.00750 in/in            | Average value: 0.00442 cm/cm Grade Count:15  |
| Melt Flow                          | 3.00 - 17.0 g/10 min     | 3.00 - 17.0 g/10 min               | Average value: 10.1 g/10 min Grade Count:36  |

| Mechanical Properties      | Metric  | English                                       | Comments                               |
|----------------------------|---|---|--|
| Hardness, Rockwell M       | 83.0 - 95.0                                   | 83.0 - 95.0                                   | Average value: 85.7 Grade Count:9      |
| Hardness, Rockwell R       | 118 - 124                                     | 118 - 124                                     | Average value: 120 Grade Count:43      |
| Tensile Strength, Ultimate | 45.0 - 172 MPa                                | 6530 - 24900 psi                              | Average value: 84.3 MPa Grade Count:94 |
|                            | 25.0 - 85.0 MPa<br>@Temperature 60.0 - 120 °C | 3630 - 12300 psi<br>@Temperature 140 - 248 °F | Average value: 60.0 MPa Grade Count:2  |
| Tensile Strength, Yield    | 55.8 - 172 MPa                                | 8100 - 24900 psi                              | Average value: 79.1 MPa Grade Count:46 |
|                            |   |   | Average value: 8.18 % Grade            |

| Elongation at Break<br>Mechanical Properties | 1.00 - 100 %<br>Metric  | 1.00 - 100 %<br>English   | Count:102<br>Comments                               |
|--|---|---|---|
|  | 1.50 - 28.0 %<br><br>@Temperature 60.0 - 120 °C                     | 1.50 - 28.0 %<br><br>@Temperature 140 - 248 °F                          | Average value: 38.8 % Grade Count:2                 |
| Elongation at Yield                          | 4.00 - 8.00 %   | 4.00 - 8.00 %   | Average value: 5.44 % Grade Count:9                 |
|  | 2.20 - 3.00 %<br><br>@Temperature 60.0 - 120 °C                     | 2.20 - 3.00 %<br><br>@Temperature 140 - 248 °F                          | Average value: 2.67 % Grade Count:1                 |
| Modulus of Elasticity                        | 2.20 - 16.5 GPa   | 319 - 2390 ksi  | Average value: 5.74 GPa Grade Count:64              |
|  | 2.20 - 6.00 GPa<br><br>@Temperature 60.0 - 120 °C                   | 319 - 870 ksi<br><br>@Temperature 140 - 248 °F                          | Average value: 4.02 GPa Grade Count:2               |
| Flexural Yield Strength                      | 75.8 - 262 MPa  | 11000 - 38000 psi   | Average value: 134 MPa Grade Count:100              |
| Flexural Modulus                             | 2.40 - 12.4 GPa   | 348 - 1800 ksi  | Average value: 4.96 GPa Grade Count:115             |
| Compressive Yield Strength                   | 96.5 - 148 MPa  | 14000 - 21500 psi   | Average value: 114 MPa Grade Count:3                |
| Izod Impact, Notched                         | 0.427 - 8.00 J/cm   | 0.800 - 15.0 ft-lb/in   | Average value: 1.34 J/cm Grade Count:102            |
|  | 1.00 - 1.00 J/cm<br><br>@Temperature 0.000 - 0.000 °C               | 1.87 - 1.87 ft-lb/in<br><br>@Temperature 32.0 - 32.0 °F                 | Average value: 0.960 J/cm Grade Count:2             |
|  | 0.900 - 1.08 J/cm<br><br>@Temperature -30.0 - - 30.0 °C             | 1.69 - 2.02 ft-lb/in<br><br>@Temperature -22.0 - - 22.0 °F              | Average value: 0.960 J/cm Grade Count:4             |
|  | 0.900 - 1.08 J/cm<br><br>@Thickness 3.20 - 3.20 mm                  | 1.69 - 2.02 ft-lb/in<br><br>@Thickness 0.126 - 0.126 in                 | Average value: 0.960 J/cm Grade Count:4             |
| Izod Impact, Unnotched                       | 0.400 J/cm - NB   | 0.749 ft-lb/in - NB   | Average value: 8.97 J/cm Grade Count:44             |
| Izod Impact, Notched (ISO)                   | 8.00 - 11.0 kJ/m <sup>2</sup>                                       | 3.81 - 5.23 ft-lb/in <sup>2</sup>                                       | Average value: 9.20 kJ/m <sup>2</sup> Grade Count:5 |
|  | 8.00 - 8.00 kJ/m <sup>2</sup><br><br>@Temperature -30.0 - - 30.0 °C | 3.81 - 3.81 ft-lb/in <sup>2</sup><br><br>@Temperature -22.0 - - 22.0 °F | Average value: 8.00 kJ/m <sup>2</sup> Grade Count:1 |
| Charpy Impact Unnotched                      | 3.50 - 1000 J/cm <sup>2</sup>                                       | 16.7 - 4760 ft-lb/in <sup>2</sup>                                       | Average value: 4.50 J/cm <sup>2</sup> Grade Count:7 |

| Mechanical Properties   | 0.800 - 999.9 J/cm <sup>2</sup><br>Metric | 3.81 - 4759 ft-lb/in <sup>2</sup><br>English | Comments<br>Average value: 0.800 J/cm <sup>2</sup> Grade Count:2 |
|-------------------------|---|--|--|
|                         | @Temperature -30.0 - -20.0 °C             | @Temperature -22.0 - -4.00 °F                |  |
| Charpy Impact, Notched  | 0.700 - 1.20 J/cm <sup>2</sup>            | 3.33 - 5.71 ft-lb/in <sup>2</sup>            | Average value: 0.850 J/cm <sup>2</sup> Grade Count:13            |
|                         | 0.600 - 0.700 J/cm <sup>2</sup>           | 2.86 - 3.33 ft-lb/in <sup>2</sup>            | Average value: 0.629 J/cm <sup>2</sup> Grade Count:7             |
|                         | @Temperature -20.0 - -20.0 °C             | @Temperature -4.00 - -4.00 °F                |  |
| Tensile Impact Strength | 53.3 - 147 kJ/m <sup>2</sup>              | 25.4 - 69.9 ft-lb/in <sup>2</sup>            | Average value: 100 kJ/m <sup>2</sup> Grade Count:4               |

| Thermal Properties                          | Metric              | English                                   | Comments                                   |
|---|---------------------|---|--|
| CTE, linear                                 | 20.0 - 40.0 µm/m-°C | 11.1 - 22.2 µin/in-°F                     | Average value: 30.5 µm/m-°C Grade Count:15 |
| CTE, linear, Transverse to Flow             | 60.0 - 65.0 µm/m-°C | 33.3 - 36.1 µin/in-°F                     | Average value: 60.8 µm/m-°C Grade Count:6  |
| Thermal Conductivity                        | 0.216 - 0.350 W/m-K | 1.50 - 2.43 BTU-in/hr-ft <sup>2</sup> -°F | Average value: 0.294 W/m-K Grade Count:3   |
| Hot Ball Pressure Test                      | 135 °C              | 275 °F                                    | Average value: 135 °C Grade Count:3        |
| Deflection Temperature at 0.46 MPa (66 psi) | 130 - 265 °C        | 266 - 509 °F                              | Average value: 147 °C Grade Count:91       |
| Deflection Temperature at 1.8 MPa (264 psi) | 104 - 207 °C        | 220 - 405 °F                              | Average value: 140 °C Grade Count:101      |
| Vicat Softening Point                       | 140 - 186 °C        | 284 - 367 °F                              | Average value: 151 °C Grade Count:26       |
| Heat Distortion Temperature                 | 140 - 146 °C        | 284 - 295 °F                              | Average value: 144 °C Grade Count:4        |
| UL RTI, Electrical                          | 80.0 - 130 °C       | 176 - 266 °F                              | Average value: 102 °C Grade Count:13       |

| Electrical Properties  | Metric                  | English                 | Comments                                      |
|------------------------|-------------------------|-------------------------|---|
| Electrical Resistivity | 1e+05 - 1.00e+16 ohm-cm | 1e+05 - 1.00e+16 ohm-cm | Average value: 8.27e+15 ohm-cm Grade Count:53 |
| Surface Resistance     | 1.00e+9 - 1.00e+16 ohm  | 1.00e+9 - 1.00e+16 ohm  | Average value: 2.84e+15 ohm Grade Count:19    |
| Static Decay           | 2.00 sec                | 2.00 sec                | Average value: 2.00 sec Grade Count:4         |
| Dielectric Constant    | 3.00 - 3.80             | 3.00 - 3.80             | Average value: 3.30 Grade Count:27            |
| Dielectric Strength    | 17.0 - 38.0 kV/mm       | 432 - 965 kV/in         | Average value: 22.2 kV/mm Grade Count:38      |
| Dissipation Factor     | 0.000800 - 0.0200       | 0.000800 - 0.0200       | Average value: 0.00650 Grade Count:26         |

| Electrical Properties                   | 0.000 - 120 sec<br>Metric | 0.000 - 120 sec<br>English | Average value: 96.5 sec Grade<br>Count:15<br>Comments |
|---|---------------------------|----------------------------|---|
| Comparative Tracking Index              | 100 - 250 V               | 100 - 250 V                | Average value: 182 V Grade Count:15                   |
| Hot Wire Ignition, HWI                  | 30.0 - 120 sec            | 30.0 - 120 sec             | Average value: 76.3 sec Grade<br>Count:7              |
| High Amp Arc Ignition, HAI              | 15.0 - 120 arcs           | 15.0 - 120 arcs            | Average value: 99.4 arcs Grade<br>Count:7             |
| High Voltage Arc-Tracking Rate,<br>HVTR | 80.0 - 150 mm/min         | 3.15 - 5.91 in/min         | Average value: 115 mm/min Grade<br>Count:4            |

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China