

Overview of materials for Liquid Crystal Polymer (LCP), 40% Glass Fiber Filled

Category : Polymer , Thermoplastic , Liquid Crystal Polymer (LCP) , Liquid Crystal Polymer (LCP), 40% Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Liquid Crystal Polymer (LCP), 40% Glass Fiber Filled". Specific grades with glass content between 35% and 44% 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-Liquid-Crystal-Polymer-LCP-40-Glass-Fiber-Filled.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|------------------------|------------------------------------|---|
| Density | 1.39 - 1.81 g/cc | 0.0502 - 0.0654 lb/in ³ | Average value: 1.70 g/cc Grade Count:43 |
| Filler Content | 40.0 % | 40.0 % | Average value: 40.0 % Grade Count:8 |
| Water Absorption | 0.0200 - 0.100 % | 0.0200 - 0.100 % | Average value: 0.0450 % Grade Count:4 |
| Moisture Absorption at Equilibrium | 0.00200 - 0.0400 % | 0.00200 - 0.0400 % | Average value: 0.0108 % Grade Count:10 |
| Water Absorption at Saturation | 0.00400 - 0.0700 % | 0.00400 - 0.0700 % | Average value: 0.0247 % Grade Count:9 |
| Linear Mold Shrinkage | 0.000 - 0.00400 cm/cm | 0.000 - 0.00400 in/in | Average value: 0.00126 cm/cm Grade Count:39 |
| Linear Mold Shrinkage, Transverse | 0.00200 - 0.0120 cm/cm | 0.00200 - 0.0120 in/in | Average value: 0.00545 cm/cm Grade Count:34 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|-----------------------------|-----------------------------|--|
| Hardness, Rockwell M | 44.0 - 96.0 | 44.0 - 96.0 | Average value: 64.8 Grade Count:8 |
| Tensile Strength, Ultimate | 3.00 - 177 MPa | 435 - 25700 psi | Average value: 114 MPa Grade Count:45 |
| | 9.28 - 138 MPa | 1350 - 20000 psi | Average value: 49.7 MPa Grade Count:1 |
| | @Temperature -20.0 - 200 °C | @Temperature -4.00 - 392 °F | |
| Elongation at Break | 9.28 - 138 MPa | 1350 - 20000 psi | Average value: 49.7 MPa Grade Count:1 |
| | @Strain 0.230 - 4.21 % | @Strain 0.230 - 4.21 % | |
| Elongation at Break | 0.500 - 3.60 % | 0.500 - 3.60 % | Average value: 1.95 % Grade Count:44 |
| Modulus of Elasticity | 7.50 - 34.5 GPa | 1090 - 5000 ksi | Average value: 14.7 GPa Grade Count:45 |

| Mechanical Properties | Metric | English | Comments |
|------------------------------|--|--|--|
| | 7.55 - 350 MPa | 10800 - 50000 psi | Average value: 180 MPa Grade Count:45 |
| Flexural Modulus | 7.20 - 27.6 GPa | 1040 - 4000 ksi | Average value: 14.0 GPa Grade Count:45 |
| Compressive Yield Strength | 53.0 - 134 MPa | 7690 - 19400 psi | Average value: 101 MPa Grade Count:7 |
| Compressive Modulus | 7.70 - 18.0 GPa | 1120 - 2610 ksi | Average value: 13.2 GPa Grade Count:7 |
| Izod Impact, Notched | 0.534 - 1.12 J/cm | 1.00 - 2.10 ft-lb/in | Average value: 0.798 J/cm Grade Count:6 |
| Izod Impact, Unnotched | 2.67 - 4.27 J/cm | 5.00 - 8.00 ft-lb/in | Average value: 3.38 J/cm Grade Count:3 |
| Izod Impact, Notched (ISO) | 3.50 - 60.0 kJ/m ² | 1.67 - 28.6 ft-lb/in ² | Average value: 17.0 kJ/m ² Grade Count:27 |
| Izod Impact, Unnotched (ISO) | 20.0 - 45.0 kJ/m ² | 9.52 - 21.4 ft-lb/in ² | Average value: 26.3 kJ/m ² Grade Count:6 |
| | 20.0 - 20.0 kJ/m ² @Temperature -30.0 - -30.0 °C | 9.52 - 9.52 ft-lb/in ² @Temperature -22.0 - -22.0 °F | Average value: 20.0 kJ/m ² Grade Count:2 |
| Charpy Impact Unnotched | 1.30 - 5.50 J/cm ² | 6.19 - 26.2 ft-lb/in ² | Average value: 3.10 J/cm ² Grade Count:19 |
| | 1.80 - 4.00 J/cm ² @Temperature -30.0 - 30.0 °C | 8.57 - 19.0 ft-lb/in ² @Temperature -22.0 - 86.0 °F | Average value: 2.45 J/cm ² Grade Count:4 |
| Charpy Impact, Notched | 0.400 - 3.00 J/cm ² | 1.90 - 14.3 ft-lb/in ² | Average value: 1.21 J/cm ² Grade Count:30 |
| | 0.600 - 1.50 J/cm ² @Temperature -30.0 - 30.0 °C | 2.86 - 7.14 ft-lb/in ² @Temperature -22.0 - 86.0 °F | Average value: 1.27 J/cm ² Grade Count:4 |

| Thermal Properties | Metric | English | Comments |
|--------------------|--|---|--|
| CTE, linear | 1.00 - 23.0 µm/m-°C | 0.556 - 12.8 µin/in-°F | Average value: 5.74 µm/m-°C Grade Count:31 |
| | -2.00 - 3.00 µm/m-°C @Temperature 55.0 - 320 °C | -1.11 - 1.67 µin/in-°F @Temperature 131 - 608 °F | Average value: 1.79 µm/m-°C Grade Count:2 |
| | -2.00 - 5.00 µm/m-°C @Temperature 55.0 - 320 °C | -1.11 - 2.78 µin/in-°F @Temperature 131 - 608 °F | Average value: 1.79 µm/m-°C Grade Count:4 |
| | -2.00 - 5.00 µm/m-°C @Thickness 2.00 - 4.00 | -1.11 - 2.78 µin/in-°F @Thickness 0.0787 - | Average value: 1.79 µm/m-°C Grade Count:4 |

| Thermal Properties | mm Metric | 0.157 in English | Comments |
|---|---|---|--|
| CTE, linear, Transverse to Flow | 11.0 - 82.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 6.11 - 45.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | Average value: 52.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:31 |
| | 71.0 - 88.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 39.4 - 48.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | Average value: 84.1 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:2 |
| | @Temperature 55.0 - 320 $^\circ\text{C}$ | @Temperature 131 - 608 $^\circ\text{F}$ | |
| | 71.0 - 94.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 39.4 - 52.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | Average value: 84.1 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:4 |
| | @Temperature 55.0 - 320 $^\circ\text{C}$ | @Temperature 131 - 608 $^\circ\text{F}$ | |
| | 71.0 - 94.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 39.4 - 52.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | Average value: 84.1 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:4 |
| | @Thickness 2.00 - 4.00 mm | @Thickness 0.0787 - 0.157 in | |
| Melting Point | 280 - 357 $^\circ\text{C}$ | 536 - 675 $^\circ\text{F}$ | Average value: 331 $^\circ\text{C}$ Grade Count:35 |
| Deflection Temperature at 0.46 MPa (66 psi) | 250 - 286 $^\circ\text{C}$ | 482 - 547 $^\circ\text{F}$ | Average value: 271 $^\circ\text{C}$ Grade Count:6 |
| Deflection Temperature at 1.8 MPa (264 psi) | 215 - 356 $^\circ\text{C}$ | 419 - 673 $^\circ\text{F}$ | Average value: 267 $^\circ\text{C}$ Grade Count:45 |
| Deflection Temperature at 8.0 MPa | 119 - 267 $^\circ\text{C}$ | 246 - 513 $^\circ\text{F}$ | Average value: 191 $^\circ\text{C}$ Grade Count:8 |
| Vicat Softening Point | 146 - 239 $^\circ\text{C}$ | 295 - 462 $^\circ\text{F}$ | Average value: 196 $^\circ\text{C}$ Grade Count:9 |
| UL RTI, Electrical | 130 - 240 $^\circ\text{C}$ | 266 - 464 $^\circ\text{F}$ | Average value: 191 $^\circ\text{C}$ Grade Count:5 |
| UL RTI, Mechanical with Impact | 130 - 220 $^\circ\text{C}$ | 266 - 428 $^\circ\text{F}$ | Average value: 180 $^\circ\text{C}$ Grade Count:5 |
| UL RTI, Mechanical without Impact | 130 - 240 $^\circ\text{C}$ | 266 - 464 $^\circ\text{F}$ | Average value: 199 $^\circ\text{C}$ Grade Count:4 |
| Flammability, UL94 | V-0 | V-0 | Grade Count:29 |

| Electrical Properties | Metric | English | Comments |
|----------------------------|-------------------------|-------------------------|---|
| Electrical Resistivity | 1e+05 - 1.00e+17 ohm-cm | 1e+05 - 1.00e+17 ohm-cm | Average value: 9.72e+15 ohm-cm Grade Count:24 |
| Surface Resistance | 1.00e+7 - 1.00e+17 ohm | 1.00e+7 - 1.00e+17 ohm | Average value: 2.12e+16 ohm Grade Count:26 |
| Dielectric Constant | 3.10 - 4.97 | 3.10 - 4.97 | Average value: 3.89 Grade Count:21 |
| Dielectric Strength | 22.6 - 59.0 kV/mm | 575 - 1500 kV/in | Average value: 36.2 kV/mm Grade Count:17 |
| Dissipation Factor | 0.00200 - 70.0 | 0.00200 - 70.0 | Average value: 7.02 Grade Count:22 |
| Arc Resistance | 130 - 180 sec | 130 - 180 sec | Average value: 156 sec Grade Count:5 |
| Comparative Tracking Index | 150 - 249 V | 150 - 249 V | Average value: 182 V Grade Count:20 |

| Processing Properties | Metric | English | Comments |
|------------------------|---------------|---------------|--------------------------------------|
| Processing Temperature | 20.0 - 391 °C | 68.0 - 735 °F | Average value: 172 °C Grade Count:31 |
| Die Temperature | 290 - 380 °C | 554 - 716 °F | Average value: 342 °C Grade Count:25 |

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

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