

Overview of materials for Liquid Crystal Polymer (LCP), 50% Glass Fiber Filled

Category : Polymer , Thermoplastic , Liquid Crystal Polymer (LCP) , Liquid Crystal Polymer (LCP), 50% 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), 50% Glass Fiber Filled". Specific grades with glass content between 45% and 54% 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-50-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.45 - 1.89 g/cc	0.0524 - 0.0683 lb/in ³	Average value: 1.74 g/cc Grade Count:14
Filler Content	45.0 %	45.0 %	Average value: 45.0 % Grade Count:5
Water Absorption	0.0100 - 0.100 %	0.0100 - 0.100 %	Average value: 0.0700 % Grade Count:3
Moisture Absorption at Equilibrium	0.00600 - 1.10 %	0.00600 - 1.10 %	Average value: 0.372 % Grade Count:3
Linear Mold Shrinkage	0.000 - 0.00200 cm/cm	0.000 - 0.00200 in/in	Average value: 0.000869 cm/cm Grade Count:12
Linear Mold Shrinkage, Transverse	0.00100 - 0.00500 cm/cm	0.00100 - 0.00500 in/in	Average value: 0.00425 cm/cm Grade Count:12

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	58.0 - 93.0	58.0 - 93.0	Average value: 72.3 Grade Count:3
Tensile Strength, Ultimate	88.0 - 160 MPa	12800 - 23200 psi	Average value: 124 MPa Grade Count:14
	20.0 - 190 MPa	2900 - 27600 psi	Average value: 85.1 MPa Grade Count:3
	@Temperature -40.0 - 250 °C	@Temperature -40.0 - 482 °F	
	20.0 - 190 MPa	2900 - 27600 psi	Average value: 85.1 MPa Grade Count:3
	@Thickness 1.00 - 4.00 mm	@Thickness 0.0394 - 0.157 in	
Elongation at Break	0.600 - 3.30 %	0.600 - 3.30 %	Average value: 1.46 % Grade Count:14
	0.300 - 0.900 %	0.300 - 0.900 %	Average value: 0.633 % Grade Count:2
	@Temperature -40.0 - 250 °C	@Temperature -40.0 - 482 °F	

Mechanical Properties	0.300 - 0.900 % Metric	0.300 - 0.900 % English	Comments Average value: 0.633 % Grade Count:2
	@Thickness 1.00 - 4.00 mm	@Thickness 0.0394 - 0.157 in	
Modulus of Elasticity	12.0 - 24.5 GPa	1740 - 3550 ksi	Average value: 18.5 GPa Grade Count:13
	6.00 - 27.0 GPa	870 - 3920 ksi	Average value: 15.6 GPa Grade Count:3
	@Temperature -40.0 - 250 °C	@Temperature -40.0 - 482 °F	
	6.00 - 27.0 GPa	870 - 3920 ksi	Average value: 15.6 GPa Grade Count:3
	@Thickness 1.00 - 4.00 mm	@Thickness 0.0394 - 0.157 in	
Flexural Yield Strength	158 - 250 MPa	22900 - 36300 psi	Average value: 192 MPa Grade Count:14
	10.0 - 300 MPa	1450 - 43500 psi	Average value: 121 MPa Grade Count:3
	@Temperature -40.0 - 250 °C	@Temperature -40.0 - 482 °F	
	10.0 - 300 MPa	1450 - 43500 psi	Average value: 121 MPa Grade Count:3
	@Thickness 0.790 - 4.00 mm	@Thickness 0.0311 - 0.157 in	
Flexural Modulus	10.0 - 24.0 GPa	1450 - 3480 ksi	Average value: 16.8 GPa Grade Count:14
	5.00 - 25.5 GPa	725 - 3700 ksi	Average value: 13.8 GPa Grade Count:3
	@Temperature -40.0 - 250 °C	@Temperature -40.0 - 482 °F	
	5.00 - 25.5 GPa	725 - 3700 ksi	Average value: 13.8 GPa Grade Count:3
	@Thickness 0.790 - 4.00 mm	@Thickness 0.0311 - 0.157 in	
Compressive Yield Strength	21.3 - 152 MPa	3090 - 22000 psi	Average value: 88.4 MPa Grade Count:5
Compressive Modulus	18.0 - 21.0 GPa	2610 - 3050 ksi	Average value: 19.8 GPa Grade Count:3
Izod Impact, Notched	0.588 - 2.50 J/cm	1.10 - 4.68 ft-lb/in	Average value: 1.38 J/cm Grade Count:5
Izod Impact, Unnotched	3.16 - 6.53 J/cm	5.92 - 12.2 ft-lb/in	Average value: 4.80 J/cm Grade Count:4
Izod Impact, Notched (ISO)	8.00 - 16.0 kJ/m ²	3.81 - 7.61 ft-lb/in ²	Average value: 10.9 kJ/m ² Grade Count:6
Charpy Impact Unnotched	1.00 - 1.90 J/cm ²	4.76 - 9.04 ft-lb/in ²	Average value: 1.61 J/cm ² Grade Count:7
	1.20 - 1.30 J/cm ²	5.71 - 6.19 ft-lb/in ²	Average value: 1.27 J/cm ² Grade

Mechanical Properties	Metric	English	Comments
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	Count:4
Charpy Impact, Notched	0.360 - 1.20 J/cm ²	1.71 - 5.71 ft-lb/in ²	Average value: 0.866 J/cm ² Grade Count:10
	0.800 - 1.00 J/cm ² @Temperature -30.0 - - 30.0 °C	3.81 - 4.76 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 0.950 J/cm ² Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	2.00 - 15.0 µm/m-°C	1.11 - 8.33 µin/in-°F	Average value: 4.82 µm/m-°C Grade Count:12
	-1.00 - 7.00 µm/m-°C @Temperature 55.0 - 260 °C	-0.556 - 3.89 µin/in-°F @Temperature 131 - 500 °F	Average value: 2.88 µm/m-°C Grade Count:4
	-1.00 - 7.00 µm/m-°C @Thickness 2.00 - 4.00 mm	-0.556 - 3.89 µin/in-°F @Thickness 0.0787 - 0.157 in	Average value: 2.88 µm/m-°C Grade Count:4
CTE, linear, Transverse to Flow	17.0 - 80.0 µm/m-°C	9.44 - 44.4 µin/in-°F	Average value: 55.4 µm/m-°C Grade Count:12
	76.0 - 100 µm/m-°C @Temperature 55.0 - 260 °C	42.2 - 55.6 µin/in-°F @Temperature 131 - 500 °F	Average value: 83.8 µm/m-°C Grade Count:4
	76.0 - 100 µm/m-°C @Thickness 2.00 - 4.00 mm	42.2 - 55.6 µin/in-°F @Thickness 0.0787 - 0.157 in	Average value: 83.8 µm/m-°C Grade Count:4
Specific Heat Capacity	1.50 J/g-°C	0.359 BTU/lb-°F	Average value: 1.50 J/g-°C Grade Count:3
Thermal Conductivity	0.320 - 0.400 W/m-K	2.22 - 2.78 BTU-in/hr- ft ² -°F	Average value: 0.357 W/m-K Grade Count:3
Melting Point	280 - 357 °C	536 - 675 °F	Average value: 337 °C Grade Count:13
Deflection Temperature at 1.8 MPa (264 psi)	240 - 315 °C	464 - 599 °F	Average value: 286 °C Grade Count:14

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+16 ohm-cm	1.00e+12 - 1.00e+16 ohm-cm	Average value: 2.42e+15 ohm-cm Grade Count:11
Surface Resistance	1.00e+11 - 1.00e+17 ohm	1.00e+11 - 1.00e+17 ohm	Average value: 9.84e+15 ohm Grade Count:11
Dielectric Constant	3.40 - 5.00	3.40 - 5.00	Average value: 4.32 Grade Count:12

Electrical Properties	5.20 - 5.60 Metric	5.20 - 5.60 English	Comments
	@Temperature 120 - 200 °C	@Temperature 248 - 392 °F	Average value: 5.37 Grade Count:2
	5.20 - 5.60	5.20 - 5.60	Average value: 5.37 Grade Count:2
	@Frequency 60.0 - 1.00e+6 Hz	@Frequency 60.0 - 1.00e+6 Hz	
Dielectric Strength	21.0 - 45.0 kV/mm	533 - 1140 kV/in	Average value: 30.4 kV/mm Grade Count:10
	20.0 - 40.0 kV/mm	508 - 1020 kV/in	Average value: 27.6 kV/mm Grade Count:3
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
	20.0 - 40.0 kV/mm	508 - 1020 kV/in	Average value: 27.6 kV/mm Grade Count:3
	@Thickness 0.800 - 3.20 mm	@Thickness 0.0315 - 0.126 in	
Dissipation Factor	0.00600 - 0.0310	0.00600 - 0.0310	Average value: 0.0171 Grade Count:12
	0.00800 - 0.0830	0.00800 - 0.0830	Average value: 0.0226 Grade Count:2
	@Temperature 120 - 200 °C	@Temperature 248 - 392 °F	
	0.00800 - 0.0830	0.00800 - 0.0830	Average value: 0.0226 Grade Count:2
	@Frequency 60.0 - 1.00e+6 Hz	@Frequency 60.0 - 1.00e+6 Hz	
Comparative Tracking Index	150 - 250 V	150 - 250 V	Average value: 191 V Grade Count:10

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