

Overview of materials for Epoxy/Carbon Fiber Composite

Category : Polymer , Thermoset , Epoxy , Epoxy/Carbon Fiber Composite

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Epoxy/Carbon Fiber Composite". 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-EpoxyCarbon-Fiber-Composite.php

Physical Properties	Metric	English	Comments
Density	1.15 - 2.25 g/cc	0.0415 - 0.0813 lb/in ³	Average value: 1.47 g/cc Grade Count:33
Water Absorption	0.800 - 3.90 %	0.800 - 3.90 %	Average value: 2.87 % Grade Count:3
Viscosity	25000 - 450000 cP	25000 - 450000 cP	Average value: 242000 cP Grade Count:6
	5000 - 35000 cP @Temperature 60.0 - 60.0 °C	5000 - 35000 cP @Temperature 140 - 140 °F	Average value: 20000 cP Grade Count:3
Linear Mold Shrinkage	0.000 cm/cm	0.000 in/in	Average value: 0.000 cm/cm Grade Count:4

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	60.0 - 65.0	60.0 - 65.0	Average value: 63.3 Grade Count:3
Tensile Strength, Ultimate	50.0 - 2100 MPa	7250 - 305000 psi	Average value: 760 MPa Grade Count:22
Tensile Strength, Yield	4.62 - 2650 MPa	670 - 384000 psi	Average value: 1080 MPa Grade Count:40
	2.965 - 2137 MPa @Temperature -59.0 - 177 °C	430.0 - 309900 psi @Temperature -74.2 - 351 °F	Average value: 945 MPa Grade Count:19
Elongation at Break	0.500 - 11.0 %	0.500 - 11.0 %	Average value: 1.94 % Grade Count:3
Modulus of Elasticity	6.60 - 520 GPa	957 - 75400 ksi	Average value: 105 GPa Grade Count:59
	5.30 - 140 GPa @Temperature -55.0 - 177 °C	769 - 20300 ksi @Temperature -67.0 - 351 °F	Average value: 86.9 GPa Grade Count:18
Flexural Yield Strength	110 - 2000 MPa	16000 - 290000 psi	Average value: 915 MPa Grade

Mechanical Properties	Metric	English	Count:32 Comments
	515 - 1448 MPa @Temperature 71.0 - 90.0 °C	74700 - 210000 psi @Temperature 160 - 194 °F	Average value: 967 MPa Grade Count:9
Flexural Modulus	6.41 - 199 GPa	930 - 28900 ksi	Average value: 75.9 GPa Grade Count:30
	37.0 - 191 GPa @Temperature 71.0 - 90.0 °C	5370 - 27700 ksi @Temperature 160 - 194 °F	Average value: 101 GPa Grade Count:8
Compressive Yield Strength	50.0 - 1720 MPa	7250 - 249000 psi	Average value: 829 MPa Grade Count:54
	350 - 1786 MPa @Temperature -59.0 - 150 °C	50800 - 259000 psi @Temperature -74.2 - 302 °F	Average value: 888 MPa Grade Count:26
Compressive Modulus	8.20 - 138 GPa	1190 - 20000 ksi	Average value: 72.5 GPa Grade Count:25
	36.0 - 119.3 GPa @Temperature -59.0 - 130 °C	5220 - 17300 ksi @Temperature -74.2 - 266 °F	Average value: 84.5 GPa Grade Count:11
Shear Modulus	3.00 - 5.00 GPa	435 - 725 ksi	Average value: 3.83 GPa Grade Count:3
	2.00 - 2.40 GPa @Temperature 130 - 130 °C	290 - 348 ksi @Temperature 266 - 266 °F	Average value: 2.20 GPa Grade Count:2
Shear Strength	30.0 - 120 MPa	4350 - 17400 psi	Average value: 74.6 MPa Grade Count:44
	26.2 - 124 MPa @Temperature -55.0 - 177 °C	3800 - 18000 psi @Temperature -67.0 - 351 °F	Average value: 57.4 MPa Grade Count:22
Izod Impact, Notched	8.00 - 15.0 J/cm	15.0 - 28.1 ft-lb/in	Average value: 10.4 J/cm Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	-0.700 - 29.7 µm/m-°C	-0.389 - 16.5 µin/in-°F	Average value: 9.09 µm/m-°C Grade Count:10
CTE, linear, Transverse to Flow	2.10 - 225 µm/m-°C	1.17 - 125 µin/in-°F	Average value: 82.5 µm/m-°C Grade Count:3
Specific Heat Capacity	1.00 - 1.20 J/g-°C	0.239 - 0.287 BTU/lb-°F	Average value: 1.13 J/g-°C Grade Count:3
		1.53 - 2780 BTU-in/hr-	Average value: 78.8 W/m-K Grade

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	120 - 300 °C	248 - 572 °F	Average value: 176 °C Grade Count:9
Glass Transition Temp, Tg	76.1 - 170 °C	169 - 338 °F	Average value: 107 °C Grade Count:7

Electrical Properties	Metric	English	Comments
Electrical Resistivity	100 - 1.30e+13 ohm-cm	100 - 1.30e+13 ohm-cm	Average value: 1.00e+12 ohm-cm Grade Count:5

Processing Properties	Metric	English	Comments
Processing Temperature	127 - 166 °C	260 - 330 °F	Average value: 143 °C Grade Count:7
Cure Time	5.00 - 10.0 min	0.0833 - 0.167 hour	Average value: 7.50 min Grade Count:3
	5.00 - 10.0 min @Temperature 138 - 138 °C	0.0833 - 0.167 hour @Temperature 280 - 280 °F	Average value: 7.50 min Grade Count:1

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