

Overview of materials for Thermoplastic Polyimide, Carbon Fiber

Category : Polymer , Thermoplastic , Polyimide, Thermoplastic , Thermoplastic Polyimide, Carbon Fiber

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Thermoplastic Polyimide, Carbon Fiber".

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-Thermoplastic-Polyimide-Carbon-Fiber.php

Physical Properties	Metric	English	Comments
Density	1.38 - 1.51 g/cc	0.0499 - 0.0546 lb/in ³	Average value: 1.44 g/cc Grade Count:10
Filler Content	20.0 - 30.0 %	20.0 - 30.0 %	Average value: 26.7 % Grade Count:3
Water Absorption	0.100 - 0.690 %	0.100 - 0.690 %	Average value: 0.257 % Grade Count:4
	0.660 - 4.17 % @Temperature 80.0 - 80.0 °C	0.660 - 4.17 % @Temperature 176 - 176 °F	Average value: 2.33 % Grade Count:2
	2.24 - 2.24 % @Temperature 80.0 - 80.0 °C	2.24 - 2.24 % @Temperature 176 - 176 °F	Average value: 2.33 % Grade Count:1
	2.24 - 2.24 % @Time 86400 - 86400 sec	2.24 - 2.24 % @Time 24.0 - 24.0 hour	Average value: 2.33 % Grade Count:1
Linear Mold Shrinkage	0.000100 - 0.00400 cm/cm	0.000100 - 0.00400 in/in	Average value: 0.00183 cm/cm Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	89.0 - 91.0	89.0 - 91.0	Average value: 90.0 Grade Count:3
Tensile Strength, Ultimate	36.5 - 241 MPa	5300 - 35000 psi	Average value: 174 MPa Grade Count:7
Elongation at Break	0.800 - 5.50 %	0.800 - 5.50 %	Average value: 2.17 % Grade Count:6
Elongation at Yield	1.80 - 4.30 %	1.80 - 4.30 %	Average value: 2.67 % Grade Count:5
Modulus of Elasticity	4.50 - 29.0 GPa	653 - 4200 ksi	Average value: 16.5 GPa Grade Count:8
Flexural Yield Strength	97.9 - 345 MPa	14200 - 50000 psi	Average value: 225 MPa Grade Count:10

Mechanical Properties	Metric	English	Comments
	15.5 GPa	22500 ksi	Average value: 12.6 GPa Grade Count:10
Compressive Yield Strength	184 - 474 MPa	26700 - 68700 psi	Average value: 279 MPa Grade Count:4
Izod Impact, Notched	0.801 - 1.07 J/cm	1.50 - 2.00 ft-lb/in	Average value: 0.921 J/cm Grade Count:4
Izod Impact, Unnotched	4.81 - 6.41 J/cm	9.00 - 12.0 ft-lb/in	Average value: 5.94 J/cm Grade Count:4
Charpy Impact Unnotched	1.96 - 3.74 J/cm ²	9.33 - 17.8 ft-lb/in ²	Average value: 2.90 J/cm ² Grade Count:3
	3.50 - 3.50 J/cm ² @Temperature -30.0 - -30.0 °C	16.7 - 16.7 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 3.50 J/cm ² Grade Count:1
Charpy Impact, Notched	1.00 - 1.00 J/cm ² @Temperature -30.0 - -30.0 °C	4.76 - 4.76 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 1.00 J/cm ² Grade Count:1
Compression Set	49.0 - 98.0 %	49.0 - 98.0 %	Average value: 69.0 % Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	41.0 - 88.0 µm/m-°C @Temperature 50.0 - 300 °C	22.8 - 48.9 µin/in-°F @Temperature 122 - 572 °F	Average value: 61.0 µm/m-°C Grade Count:3
CTE, linear, Transverse to Flow	43.0 - 67.0 µm/m-°C @Temperature 50.0 - 300 °C	23.9 - 37.2 µin/in-°F @Temperature 122 - 572 °F	Average value: 54.5 µm/m-°C Grade Count:2
Deflection Temperature at 1.8 MPa (264 psi)	240 - 340 °C	464 - 644 °F	Average value: 297 °C Grade Count:5
Flammability, UL94	V-0	V-0	Grade Count:7

Electrical Properties	Metric	English	Comments
Surface Resistance	10000 - 1.00e+12 ohm	10000 - 1.00e+12 ohm	Average value: 1.40e+11 ohm Grade Count:4

Processing Properties	Metric	English	Comments
Processing Temperature	371 - 410 °C	700 - 770 °F	Average value: 384 °C Grade Count:3
Melt Temperature	370 - 416 °C	698 - 780 °F	Average value: 392 °C Grade Count:5
Mold Temperature	177 - 232 °C	350 - 450 °F	Average value: 200 °C Grade Count:6
Drying Temperature	180 - 204 °C	356 - 400 °F	Average value: 196 °C Grade Count:5

Processing Properties	Metric %	English %	Comments
			Average value: 0.0100 % Grade Count:3
Dew Point	-40.0 °C	-40.0 °F	Average value: -40.0 °C Grade Count:3
Injection Pressure	138 - 193 MPa	20000 - 28000 psi	Average value: 165 MPa Grade Count:4

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