

Overview of materials for Polyetherimide (PEI), Carbon Fiber Filled

Category : Polymer , Thermoplastic , Polyetherimide (PEI) , Polyetherimide (PEI), Carbon Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyetherimide, Carbon Fiber Filled". 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-Polyetherimide-PEI-Carbon-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.29 - 1.49 g/cc	0.0466 - 0.0538 lb/in ³	Average value: 1.38 g/cc Grade Count:48
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 25.4 % Grade Count:12
Water Absorption	0.100 - 0.300 %	0.100 - 0.300 %	Average value: 0.199 % Grade Count:27
Additive Loading	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 21.4 % Grade Count:11
Linear Mold Shrinkage	0.000 - 0.00500 cm/cm	0.000 - 0.00500 in/in	Average value: 0.00133 cm/cm Grade Count:40
Linear Mold Shrinkage, Transverse	0.00300 - 0.00500 cm/cm	0.00300 - 0.00500 in/in	Average value: 0.00386 cm/cm Grade Count:7

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	124 - 265 MPa	18000 - 38400 psi	Average value: 186 MPa Grade Count:49
Tensile Strength, Yield	133 - 230 MPa	19300 - 33400 psi	Average value: 173 MPa Grade Count:8
Elongation at Break	0.500 - 8.00 %	0.500 - 8.00 %	Average value: 2.43 % Grade Count:43
Elongation at Yield	0.800 - 3.50 %	0.800 - 3.50 %	Average value: 1.48 % Grade Count:12
Modulus of Elasticity	4.50 - 34.5 GPa	653 - 5000 ksi	Average value: 17.2 GPa Grade Count:42
Flexural Yield Strength	180 - 385 MPa	26100 - 55800 psi	Average value: 262 MPa Grade Count:50
Flexural Modulus	4.50 - 31.0 GPa	653 - 4500 ksi	Average value: 15.4 GPa Grade Count:50
Izod Impact, Notched	0.320 - 2.00 J/cm	0.599 - 3.75 ft-lb/in	Average value: 0.595 J/cm Grade Count:41
Izod Impact, Unnotched	2.67 - 11.2 J/cm	5.00 - 21.0 ft-lb/in	Average value: 5.02 J/cm Grade Count:38

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched (ISO)	24.2 - 34.7 kJ/m ²	11.5 - 16.5 ft-lb/in ²	Average value: 28.4 kJ/m ² Grade Count:4
Charpy Impact Unnotched	1.40 - 4.50 J/cm ²	6.66 - 21.4 ft-lb/in ²	Average value: 3.24 J/cm ² Grade Count:7
Falling Dart Impact	6.21 - 11.4 J	4.58 - 8.41 ft-lb	Average value: 8.11 J Grade Count:9
Coefficient of Friction	0.390 - 0.520	0.390 - 0.520	Average value: 0.482 Grade Count:4
Coefficient of Friction, Static	0.460 - 0.480	0.460 - 0.480	Average value: 0.475 Grade Count:4
K (wear) Factor	62.4 - 151 x 10 ⁻⁸ mm ³ /N-M	31.0 - 75.0 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Average value: 126 x 10 ⁻⁸ mm ³ /N-M Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	8.00 - 32.0 µm/m-°C	4.44 - 17.8 µin/in-°F	Average value: 18.5 µm/m-°C Grade Count:4
Maximum Service Temperature, Air	170 °C	338 °F	Average value: 170 °C Grade Count:7
Deflection Temperature at 0.46 MPa (66 psi)	204 - 224 °C	400 - 435 °F	Average value: 212 °C Grade Count:15
Deflection Temperature at 1.8 MPa (264 psi)	199 - 232 °C	390 - 450 °F	Average value: 208 °C Grade Count:44
Flammability, UL94	V-0	V-0	Grade Count:29

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00 - 9.90e+9 ohm-cm	1.00 - 9.90e+9 ohm-cm	Average value: 2.07e+8 ohm-cm Grade Count:27
Surface Resistance	1.00 - 9.90e+11 ohm	1.00 - 9.90e+11 ohm	Average value: 2.42e+9 ohm Grade Count:25
Insulation Resistance	1000 - 1.00e+6 ohm	1000 - 1.00e+6 ohm	Average value: 173000 ohm Grade Count:7
Static Decay	0.0100 - 2.00 sec	0.0100 - 2.00 sec	Average value: 0.921 sec Grade Count:12

Processing Properties	Metric	English	Comments
Processing Temperature	349 - 382 °C	660 - 720 °F	Average value: 373 °C Grade Count:14
Nozzle Temperature	350 - 421 °C	662 - 790 °F	Average value: 387 °C Grade Count:15
Melt Temperature	330 - 427 °C	626 - 801 °F	Average value: 379 °C Grade Count:41
Mold Temperature	121 - 180 °C	250 - 356 °F	Average value: 152 °C Grade Count:48

Drying Temperature Processing Properties	120 - 150 °C Metric	248 - 302 °F English	Average value: 143 °C Grade Count:41 Comments
Moisture Content	0.0200 - 0.0400 %	0.0200 - 0.0400 %	Average value: 0.0309 % Grade Count:33
Dew Point	-28.9 °C	-20.0 °F	Average value: -28.9 °C Grade Count:18
Injection Pressure	82.7 - 124 MPa	12000 - 18000 psi	Average value: 103 MPa Grade Count:25
Vent Depth	0.00250 - 0.00760 cm	0.000984 - 0.00299 in	Average value: 0.00505 cm Grade Count:8

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