

Overview of materials for Polyethersulfone, Carbon Fiber Reinforced

Category : Polymer , Thermoplastic , Polyethersulfone (PES) , Polyethersulfone, Carbon Fiber Reinforced

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.36 - 1.57 g/cc	0.0491 - 0.0567 lb/in ³	Average value: 1.45 g/cc Grade Count:30
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 19.6 % Grade Count:14
Water Absorption	0.100 - 1.50 %	0.100 - 1.50 %	Average value: 0.386 % Grade Count:15
Additive Loading	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 23.3 % Grade Count:3
Linear Mold Shrinkage	0.000500 - 0.00400 cm/cm	0.000500 - 0.00400 in/in	Average value: 0.00188 cm/cm Grade Count:28
Melt Flow	12.1 - 15.3 g/10 min	12.1 - 15.3 g/10 min	Average value: 14.1 g/10 min Grade Count:3

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	90.0 - 325 MPa	13100 - 47100 psi	Average value: 146 MPa Grade Count:29
Elongation at Break	1.00 - 12.0 %	1.00 - 12.0 %	Average value: 2.35 % Grade Count:24
Elongation at Yield	1.30 - 2.80 %	1.30 - 2.80 %	Average value: 2.10 % Grade Count:5
Modulus of Elasticity	2.40 - 36.6 GPa	348 - 5300 ksi	Average value: 14.3 GPa Grade Count:30
Flexural Yield Strength	125 - 303 MPa	18100 - 44000 psi	Average value: 219 MPa Grade Count:28
Flexural Modulus	2.60 - 24.1 GPa	377 - 3500 ksi	Average value: 12.5 GPa Grade Count:29
Izod Impact, Notched	0.534 - 1.60 J/cm	1.00 - 3.00 ft-lb/in	Average value: 0.653 J/cm Grade Count:25
Izod Impact, Unnotched	3.74 - 6.94 J/cm	7.00 - 13.0 ft-lb/in	Average value: 5.15 J/cm Grade Count:24
Charpy Impact Unnotched	1.90 - 2.00 J/cm ²	9.04 - 9.52 ft-lb/in ²	Average value: 1.97 J/cm ² Grade Count:3

Mechanical Properties	Metric	English	Comments
Impact, Charpy, notched	0.600 J/cm ²	1.86 ft-lb/in ²	Average value: 0.550 J/cm ² Grade Count:3
	0.300 - 0.300 J/cm ²	1.43 - 1.43 ft-lb/in ²	Average value: 0.300 J/cm ² Grade Count:1
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 - 13.0 µm/m-°C	7.22 - 7.22 µin/in-°F	Average value: 27.9 µm/m-°C Grade Count:1
	@Temperature 180 - 180 °C	@Temperature 356 - 356 °F	
	26.0 - 34.0 µm/m-°C	14.4 - 18.9 µin/in-°F	Average value: 27.9 µm/m-°C Grade Count:1
	@Temperature 75.0 - 175 °C	@Temperature 167 - 347 °F	
	26.0 - 34.0 µm/m-°C	14.4 - 18.9 µin/in-°F	Average value: 27.9 µm/m-°C Grade Count:1
	@Thickness 2.00 - 4.00 mm	@Thickness 0.0787 - 0.157 in	
CTE, linear, Transverse to Flow	19.5 - 25.0 µm/m-°C	10.8 - 13.9 µin/in-°F	Average value: 22.3 µm/m-°C Grade Count:1
	@Temperature 75.0 - 175 °C	@Temperature 167 - 347 °F	
	19.5 - 25.0 µm/m-°C	10.8 - 13.9 µin/in-°F	Average value: 22.3 µm/m-°C Grade Count:1
	@Thickness 2.00 - 4.00 mm	@Thickness 0.0787 - 0.157 in	
Maximum Service Temperature, Air	180 - 200 °C	356 - 392 °F	Average value: 190 °C Grade Count:4
Deflection Temperature at 0.46 MPa (66 psi)	207 - 210 °C	405 - 410 °F	Average value: 208 °C Grade Count:4
Deflection Temperature at 1.8 MPa (264 psi)	146 - 410 °C	295 - 770 °F	Average value: 216 °C Grade Count:27
Flammability, UL94	V-0	V-0	Grade Count:21

Electrical Properties	Metric	English	Comments
Electrical Resistivity	100 - 9.90e+9 ohm-cm	100 - 9.90e+9 ohm-cm	Average value: 6.61e+8 ohm-cm Grade Count:19
Surface Resistance	4000 - 1.00e+12 ohm	4000 - 1.00e+12 ohm	Average value: 1.17e+11 ohm Grade Count:9
Insulation Resistance	100000 - 1.00e+6 ohm	100000 - 1.00e+6 ohm	Average value: 775000 ohm Grade Count:4
Static Decay	2.00 sec	2.00 sec	Average value: 2.00 sec Grade Count:5

Processing Properties	Metric	English	Comments
Processing Temperature	80.0 - 366 °C	176 - 690 °F	Average value: 322 °C Grade Count:9
Nozzle Temperature	340 - 360 °C	644 - 680 °F	Average value: 350 °C Grade Count:4
Melt Temperature	343 - 390 °C	650 - 734 °F	Average value: 362 °C Grade Count:24
Mold Temperature	120 - 200 °C	248 - 392 °F	Average value: 157 °C Grade Count:28
Drying Temperature	140 - 150 °C	284 - 302 °F	Average value: 149 °C Grade Count:24
Moisture Content	0.0400 %	0.0400 %	Average value: 0.0400 % Grade Count:19
Dew Point	-31.7 °C	-25.0 °F	Average value: -31.7 °C Grade Count:19
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:23

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