

Overview of materials for Polyetheretherketone, Glass Fiber Filled

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, Glass Fiber Filled

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.30 - 1.93 g/cc	0.0470 - 0.0697 lb/in ³	Average value: 1.54 g/cc Grade Count:174
Filler Content	5.00 - 60.0 %	5.00 - 60.0 %	Average value: 28.8 % Grade Count:70
Water Absorption	0.0110 - 0.180 %	0.0110 - 0.180 %	Average value: 0.103 % Grade Count:85
Water Absorption at Saturation	0.250 - 0.500 %	0.250 - 0.500 %	Average value: 0.355 % Grade Count:20
	0.450 - 0.500 % @Temperature 100 - 100 °C	0.450 - 0.500 % @Temperature 212 - 212 °F	Average value: 0.459 % Grade Count:11
Additive Loading	15.0 - 40.0 %	15.0 - 40.0 %	Average value: 26.0 % Grade Count:5
Viscosity	200000 - 700000 cP @Temperature 400 - 420 °C	200000 - 700000 cP @Temperature 752 - 788 °F	Average value: 445000 cP Grade Count:13
	350000 - 850000 cP @Temperature 400 - 400 °C	350000 - 850000 cP @Temperature 752 - 752 °F	Average value: 445000 cP Grade Count:3
	350000 - 850000 cP @Shear Rate 1000 - 1000 1/s	350000 - 850000 cP @Shear Rate 1000 - 1000 1/s	Average value: 445000 cP Grade Count:3
Linear Mold Shrinkage	0.000500 - 0.0150 cm/cm	0.000500 - 0.0150 in/in	Average value: 0.00421 cm/cm Grade Count:132
Linear Mold Shrinkage, Transverse	0.00250 - 0.0160 cm/cm	0.00250 - 0.0160 in/in	Average value: 0.00810 cm/cm Grade Count:28
Melt Flow	0.700 - 110 g/10 min	0.700 - 110 g/10 min	Average value: 32.7 g/10 min Grade Count:15
	8.50 - 63.0 cm	3.35 - 24.8 in	Average value: 21.7 cm Grade

Spiral Flow Physical Properties	Metric	English	Count:14 Comments
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85.0 - 108	85.0 - 108	Average value: 103 Grade Count:18
Hardness, Rockwell R	115 - 126	115 - 126	Average value: 123 Grade Count:9
Hardness, Shore D	85.0 - 96.0	85.0 - 96.0	Average value: 88.9 Grade Count:22
Tensile Strength, Ultimate	51.0 - 240 MPa	7400 - 34800 psi	Average value: 148 MPa Grade Count:161
	25.0 - 215 MPa @Temperature -55.0 - 275 °C	3630 - 31200 psi @Temperature -67.0 - 527 °F	Average value: 109 MPa Grade Count:18
Tensile Strength, Yield	98.0 - 220 MPa	14200 - 31900 psi	Average value: 163 MPa Grade Count:15
Elongation at Break	0.700 - 30.0 %	0.700 - 30.0 %	Average value: 2.98 % Grade Count:117
	0.700 - 23.0 % @Temperature 60.0 - 150 °C	0.700 - 23.0 % @Temperature 140 - 302 °F	Average value: 2.67 % Grade Count:8
Elongation at Yield	1.00 - 5.00 %	1.00 - 5.00 %	Average value: 2.67 % Grade Count:57
	3.00 - 3.50 % @Temperature 90.0 - 150 °C	3.00 - 3.50 % @Temperature 194 - 302 °F	Average value: 3.17 % Grade Count:1
Modulus of Elasticity	3.86 - 39.7 GPa	561 - 5760 ksi	Average value: 11.1 GPa Grade Count:156
	5.10 - 37.0 GPa @Temperature 60.0 - 150 °C	740 - 5370 ksi @Temperature 140 - 302 °F	Average value: 15.9 GPa Grade Count:8
Flexural Yield Strength	67.6 - 360 MPa	9800 - 52200 psi	Average value: 219 MPa Grade Count:155
	40.0 - 270 MPa @Temperature -55.0 - 275 °C	5800 - 39200 psi @Temperature -67.0 - 527 °F	Average value: 128 MPa Grade Count:8
Flexural Modulus	3.80 - 24.1 GPa	551 - 3500 ksi	Average value: 9.61 GPa Grade Count:155
Compressive Yield Strength	4.14 - 250 MPa	600 - 36300 psi	Average value: 181 MPa Grade Count:21
	35.0 - 160 MPa @Temperature 120 -	5080 - 23200 psi @Temperature 248 -	Average value: 101 MPa Grade Count:9

Mechanical Properties	250 °C Metric	482 °F English	Comments
Compressive Modulus	3.45 - 4.00 GPa	500 - 580 ksi	Average value: 3.72 GPa Grade Count:6
Shear Strength	75.8 - 105 MPa	11000 - 15300 psi	Average value: 92.4 MPa Grade Count:7
Izod Impact, Notched	0.112 - 2.40 J/cm	0.210 - 4.50 ft-lb/in	Average value: 0.914 J/cm Grade Count:79
Izod Impact, Unnotched	3.74 - 13.3 J/cm	7.00 - 25.0 ft-lb/in	Average value: 7.98 J/cm Grade Count:54
Izod Impact, Notched (ISO)	0.600 - 13.0 kJ/m ²	0.286 - 6.19 ft-lb/in ²	Average value: 8.25 kJ/m ² Grade Count:21
Izod Impact, Unnotched (ISO)	2.50 kJ/m ² - NB	1.19 ft-lb/in ² - NB	Average value: 48.0 kJ/m ² Grade Count:19
Charpy Impact Unnotched	1.80 - 8.50 J/cm ²	8.57 - 40.5 ft-lb/in ²	Average value: 4.46 J/cm ² Grade Count:77
	2.00 - 5.50 J/cm ² @Temperature -30.0 - - 20.0 °C	9.52 - 26.2 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 4.12 J/cm ² Grade Count:18
Charpy Impact, Notched	0.300 - 1.50 J/cm ²	1.43 - 7.14 ft-lb/in ²	Average value: 0.879 J/cm ² Grade Count:37
	0.300 - 4.00 J/cm ² @Temperature -30.0 - - 20.0 °C	1.43 - 19.0 ft-lb/in ² @Temperature -22.0 - - 4.00 °F	Average value: 1.34 J/cm ² Grade Count:7
Coefficient of Friction	0.240 - 0.450	0.240 - 0.450	Average value: 0.308 Grade Count:30
Coefficient of Friction, Static	0.250 - 0.350	0.250 - 0.350	Average value: 0.287 Grade Count:24
K (wear) Factor	6.80 - 353 x 10 ⁻⁸ mm ³ /N-M	3.38 - 175 x 10 ⁻¹⁰ in ³ - min/ft-lb-hr	Average value: 184 x 10 ^{<sup>-8</sup>} mm ³ /N-M Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 - 55.0 µm/m-°C	7.22 - 30.6 µin/in-°F	Average value: 26.6 µm/m-°C Grade Count:63
	15.0 - 130 µm/m-°C @Temperature >=143 °C	8.33 - 72.2 µin/in-°F @Temperature >=289 °F	Average value: 66.2 µm/m-°C Grade Count:12
CTE, linear, Transverse to Flow	36.0 - 110 µm/m-°C	20.0 - 61.1 µin/in-°F	Average value: 59.8 µm/m-°C Grade Count:3
Specific Heat Capacity	1.28 - 1.73 J/g-°C @Temperature 50.0 - 200 °C	0.306 - 0.413 BTU/lb-°F @Temperature 122 - 392 °F	Average value: 1.50 J/g-°C Grade Count:2

Electrical Properties	Metric	English	Comments
Electrical Resistivity	10.0 - 3.80e+17 ohm-cm	10.0 - 3.80e+17 ohm-cm	Average value: 2.29e+16 ohm-cm Grade Count:43
Surface Resistance	1000 - 1.90e+17 ohm	1000 - 1.90e+17 ohm	Average value: 1.06e+16 ohm Grade Count:36
Insulation Resistance	1.00e+12 - 1.00e+16 ohm	1.00e+12 - 1.00e+16 ohm	Average value: 3.89e+14 ohm Grade Count:52
Static Decay	2.00 sec	2.00 sec	Average value: 2.00 sec Grade Count:3
Dielectric Constant	2.80 - 4.20	2.80 - 4.20	Average value: 3.35 Grade Count:19
Dielectric Strength	15.0 - 175 kV/mm	380 - 4450 kV/in	Average value: 26.4 kV/mm Grade Count:26
Dissipation Factor	0.00100 - 0.0100	0.00100 - 0.0100	Average value: 0.00348 Grade Count:17
Comparative Tracking Index	150 - 200 V	150 - 200 V	Average value: 155 V Grade Count:15

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