

Overview of materials for Polyetheretherketone, PTFE Filled

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, PTFE-Filled

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.32 - 1.63 g/cc	0.0477 - 0.0589 lb/in ³	Average value: 1.42 g/cc Grade Count:51
Filler Content	5.00 - 45.0 %	5.00 - 45.0 %	Average value: 22.7 % Grade Count:15
Water Absorption	0.0400 - 0.200 %	0.0400 - 0.200 %	Average value: 0.100 % Grade Count:28
Viscosity	250000 - 350000 cP @Temperature 400 - 400 °C	250000 - 350000 cP @Temperature 752 - 752 °F	Average value: 300000 cP Grade Count:2
Linear Mold Shrinkage	0.00100 - 0.0250 cm/cm	0.00100 - 0.0250 in/in	Average value: 0.0117 cm/cm Grade Count:36
Linear Mold Shrinkage, Transverse	0.00600 - 0.0190 cm/cm	0.00600 - 0.0190 in/in	Average value: 0.0130 cm/cm Grade Count:5
Melt Flow	17.0 - 50.0 g/10 min	17.0 - 50.0 g/10 min	Average value: 27.7 g/10 min Grade Count:10

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	90.0 - 117	90.0 - 117	Average value: 98.6 Grade Count:7
Hardness, Shore D	81.0 - 90.0	81.0 - 90.0	Average value: 87.0 Grade Count:10
Tensile Strength, Ultimate	2.70 - 180 MPa	392 - 26100 psi	Average value: 77.9 MPa Grade Count:49
	115 - 115 MPa @Temperature 125 - 125 °C	16700 - 16700 psi @Temperature 257 - 257 °F	Average value: 115 MPa Grade Count:1
Tensile Strength, Yield	64.0 - 155 MPa	9280 - 22500 psi	Average value: 100 MPa Grade Count:6
Elongation at Break	0.900 - 30.0 %	0.900 - 30.0 %	Average value: 7.87 % Grade Count:33
Elongation at Yield	1.50 - 8.50 %	1.50 - 8.50 %	Average value: 5.39 % Grade Count:21

Mechanical Properties	Metric	English	Comments
Modulus of Elasticity	1.17 - 16.0 GPa	170 - 2320 ksi	Average value: 4.07 GPa Grade Count:46
Flexural Yield Strength	48.3 - 280 MPa	7000 - 40600 psi	Average value: 124 MPa Grade Count:49
	13.0 - 170 MPa @Temperature 125 - 275 °C	1890 - 24700 psi @Temperature 257 - 527 °F	Average value: 72.2 MPa Grade Count:2
Flexural Modulus	2.41 - 14.0 GPa	350 - 2030 ksi	Average value: 4.13 GPa Grade Count:47
Compressive Yield Strength	35.0 - 221 MPa	5080 - 32000 psi	Average value: 112 MPa Grade Count:10
	60.0 - 155 MPa @Temperature 120 - 200 °C	8700 - 22500 psi @Temperature 248 - 392 °F	Average value: 93.3 MPa Grade Count:2
Compressive Modulus	2.28 - 5.45 GPa	330 - 791 ksi	Average value: 3.21 GPa Grade Count:5
Izod Impact, Notched	0.235 - 1.07 J/cm	0.440 - 2.00 ft-lb/in	Average value: 0.641 J/cm Grade Count:22
Izod Impact, Unnotched	3.20 - 5340 J/cm	6.00 - 10000 ft-lb/in	Average value: 10.5 J/cm Grade Count:13
Izod Impact, Notched (ISO)	0.800 - 8.80 kJ/m ²	0.381 - 4.19 ft-lb/in ²	Average value: 5.37 kJ/m ² Grade Count:3
Izod Impact, Unnotched (ISO)	35.0 kJ/m ² - NB	16.7 ft-lb/in ² - NB	Average value: 63.1 kJ/m ² Grade Count:3
Charpy Impact Unnotched	2.30 J/cm ² - NB	10.9 ft-lb/in ² - NB	Average value: 5.37 J/cm ² Grade Count:20
	4.50 - 6.00 J/cm ² @Temperature -30.0 - - 30.0 °C	21.4 - 28.6 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 5.25 J/cm ² Grade Count:2
Charpy Impact, Notched	0.400 - 1.20 J/cm ²	1.90 - 5.71 ft-lb/in ²	Average value: 0.670 J/cm ² Grade Count:17
	0.500 - 0.500 J/cm ² @Temperature -30.0 - - 30.0 °C	2.38 - 2.38 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 0.500 J/cm ² Grade Count:1
Coefficient of Friction	0.0400 - 0.520	0.0400 - 0.520	Average value: 0.179 Grade Count:14
	0.0800 - 0.0900 @Temperature 100 - 100 °C	0.0800 - 0.0900 @Temperature 212 - 212 °F	Average value: 0.0850 Grade Count:2
Coefficient of Friction, Static	0.120 - 0.430	0.120 - 0.430	Average value: 0.195 Grade Count:13

Mechanical Properties	Metric	English	Comments
	4.40 - 258 x 10 ⁻⁹ N/mm ² /N-M	2.18 - 128 x 10 ⁻¹⁰ in ² - lb/in ² /lb-hr	Average value: 89.0 x 10 ^{-sup>-} 89.0 x 10 ^{-sup>-} mm ² /N-M Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	9.00 - 65.0 μm/m-°C	5.00 - 36.1 μin/in-°F	Average value: 44.3 μm/m-°C Grade Count:10
	9.00 - 140 μm/m-°C @Temperature >=143 °C	5.00 - 77.8 μin/in-°F @Temperature >=289 °F	Average value: 94.8 μm/m-°C Grade Count:2
Thermal Conductivity	0.240 - 0.250 W/m-K	1.67 - 1.74 BTU-in/hr-ft ² -°F	Average value: 0.246 W/m-K Grade Count:5
Melting Point	340 - 343 °C	644 - 649 °F	Average value: 342 °C Grade Count:16
Maximum Service Temperature, Air	115 - 260 °C	239 - 500 °F	Average value: 249 °C Grade Count:20
Deflection Temperature at 0.46 MPa (66 psi)	190 - 293 °C	374 - 559 °F	Average value: 234 °C Grade Count:3
Deflection Temperature at 1.8 MPa (264 psi)	149 - 325 °C	300 - 617 °F	Average value: 187 °C Grade Count:19
Vicat Softening Point	270 - 290 °C	518 - 554 °F	Average value: 280 °C Grade Count:9
Glass Transition Temp, Tg	143 - 150 °C	289 - 302 °F	Average value: 145 °C Grade Count:5
Flammability, UL94	V-0	V-0	Grade Count:27

Electrical Properties	Metric	English	Comments
Electrical Resistivity	30000 - 6.00e+16 ohm-cm	30000 - 6.00e+16 ohm-cm	Average value: 9.58e+15 ohm-cm Grade Count:12
Surface Resistance	10000 - 1.00e+14 ohm	10000 - 1.00e+14 ohm	Average value: 1.68e+13 ohm Grade Count:7
Insulation Resistance	1.00e+9 - 1.00e+12 ohm	1.00e+9 - 1.00e+12 ohm	Average value: 9.29e+11 ohm Grade Count:14
Dielectric Constant	2.80 - 3.50	2.80 - 3.50	Average value: 3.27 Grade Count:5
Dielectric Strength	0.100 - 27.0 kV/mm	2.54 - 686 kV/in	Average value: 19.0 kV/mm Grade Count:7
Dissipation Factor	0.00200 - 0.0610	0.00200 - 0.0610	Average value: 0.0200 Grade Count:5

Processing Properties	Metric	English	Comments
Processing Temperature	100 - 390 °C	212 - 734 °F	Average value: 360 °C Grade Count:21
Nozzle Temperature	360 - 380 °C	680 - 716 °F	Average value: 370 °C Grade Count:18
Melt Temperature	349 - 400 °C	660 - 752 °F	Average value: 380 °C Grade Count:32

Processing Properties	Metric	English	Comments
Mold Temperature	135 - 218 °C	275 - 425 °F	Average value: 184 °C Grade Count:36
Drying Temperature	120 - 150 °C	248 - 302 °F	Average value: 138 °C Grade Count:33

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