

Overview of materials for Polyetherimide (PEI)

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyetherimide". 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.php

Physical Properties	Metric	English	Comments
Density	0.0600 - 1.69 g/cc	0.00217 - 0.0611 lb/in ³	Average value: 1.37 g/cc Grade Count:812
Filler Content	5.00 - 50.0 %	5.00 - 50.0 %	Average value: 22.8 % Grade Count:55
Water Absorption	0.0150 - 4.00 %	0.0150 - 4.00 %	Average value: 0.284 % Grade Count:253
Moisture Absorption at Equilibrium	0.000 - 1.30 %	0.000 - 1.30 %	Average value: 0.532 % Grade Count:390
Water Absorption at Saturation	0.100 - 2.90 %	0.100 - 2.90 %	Average value: 1.03 % Grade Count:294
Additive Loading	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 18.5 % Grade Count:24
Linear Mold Shrinkage	0.000 - 0.0230 cm/cm	0.000 - 0.0230 in/in	Average value: 0.00449 cm/cm Grade Count:704
Linear Mold Shrinkage, Transverse	0.000800 - 0.0170 cm/cm	0.000800 - 0.0170 in/in	Average value: 0.00534 cm/cm Grade Count:241
Melt Flow	1.40 - 113 g/10 min	1.40 - 113 g/10 min	Average value: 16.1 g/10 min Grade Count:456

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85.0 - 118	85.0 - 118	Average value: 111 Grade Count:94
Hardness, Rockwell R	100 - 127	100 - 127	Average value: 120 Grade Count:41
Hardness, H358/30	95.0 - 170 MPa	13800 - 24700 psi	Average value: 145 MPa Grade Count:98
Hardness, Shore D	72.0 - 93.0	72.0 - 93.0	Average value: 83.7 Grade Count:15
Ball Indentation Hardness	165 - 170 MPa	23900 - 24700 psi	Average value: 168 MPa Grade Count:4
Tensile Strength, Ultimate	1.70 - 281 MPa	247 - 40800 psi	Average value: 122 MPa Grade Count:706

Mechanical Properties	Metric	English	Comments
Elongation at Break	0.500 - 400 %	0.500 - 400 %	Average value: 25.8 % Grade Count:776
Elongation at Yield	0.700 - 60.0 %	0.700 - 60.0 %	Average value: 5.86 % Grade Count:344
Modulus of Elasticity	0.0370 - 42.0 GPa	5.37 - 6090 ksi	Average value: 7.22 GPa Grade Count:739
Flexural Yield Strength	18.0 - 429 MPa	2610 - 62200 psi	Average value: 184 MPa Grade Count:798
Flexural Modulus	0.380 - 32.6 GPa	55.1 - 4730 ksi	Average value: 6.74 GPa Grade Count:797
Compressive Yield Strength	0.700 - 282 MPa	102 - 40900 psi	Average value: 145 MPa Grade Count:48
Compressive Modulus	0.0460 - 6.47 GPa	6.67 - 938 ksi	Average value: 3.28 GPa Grade Count:21
Poissons Ratio	0.300 - 0.440	0.300 - 0.440	Average value: 0.380 Grade Count:20
Shear Modulus	0.0140 - 4.73 GPa	2.03 - 685 ksi	Average value: 2.16 GPa Grade Count:10
Shear Strength	0.800 - 128 MPa	116 - 18600 psi	Average value: 78.5 MPa Grade Count:18
Izod Impact, Notched	0.160 - 33.0 J/cm	0.300 - 61.8 ft-lb/in	Average value: 3.38 J/cm Grade Count:677
	0.300 - 1.20 J/cm @Temperature -30.0 - - 30.0 °C	0.562 - 2.25 ft-lb/in @Temperature -22.0 - - 22.0 °F	Average value: 0.567 J/cm Grade Count:122
Izod Impact, Unnotched	0.110 J/cm - NB	0.206 ft-lb/in - NB	Average value: 8.13 J/cm Grade Count:482
	99.99 J/cm - NB @Temperature -30.0 - - 30.0 °C	187.3 ft-lb/in - NB @Temperature -22.0 - - 22.0 °F	Grade Count:13
Izod Impact, Notched (ISO)	2.00 kJ/m ² - NB	0.952 ft-lb/in ² - NB	Average value: 7.56 kJ/m ² Grade Count:342
	2.00 kJ/m ² - NB @Temperature -30.0 - - 30.0 °C	0.952 ft-lb/in ² - NB @Temperature -22.0 - - 22.0 °F	Average value: 7.04 kJ/m ² Grade Count:238
Izod Impact, Unnotched (ISO)	0.700 kJ/m ² - NB	0.333 ft-lb/in ² - NB	Average value: 43.4 kJ/m ² Grade Count:274
	13.0 kJ/m ² - NB @Temperature -30.0 - - 30.0 °C	6.19 ft-lb/in ² - NB @Temperature -22.0 - - 22.0 °F	Average value: 50.3 kJ/m ² Grade Count:175

Mechanical Properties	Metric	English	Comments
	1.40 - 999.9 J/cm ² @Temperature -30.0 - -30.0 °C	6.66 - 4759 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 4.92 J/cm ² Grade Count:113
Charpy Impact, Notched	0.200 - 1000 J/cm ²	0.952 - 4760 ft-lb/in ²	Average value: 0.766 J/cm ² Grade Count:239
	0.300 - 1.50 J/cm ² @Temperature -30.0 - -30.0 °C	1.43 - 7.14 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 0.614 J/cm ² Grade Count:84
Gardner Impact	2.26 - 36.0 J	1.67 - 26.6 ft-lb	Average value: 29.1 J Grade Count:52
Dart Drop, Total Energy	2.00 - 380 J	1.48 - 280 ft-lb	Average value: 29.0 J Grade Count:158
	8.00 - 99.0 J @Temperature -30.0 - 0.000 °C	5.90 - 73.0 ft-lb @Temperature -22.0 - 32.0 °F	Average value: 76.7 J Grade Count:15
Falling Dart Impact	4.90 - 21.4 J	3.61 - 15.8 ft-lb	Average value: 9.18 J Grade Count:17
Coefficient of Friction	0.110 - 0.550	0.110 - 0.550	Average value: 0.383 Grade Count:53
Coefficient of Friction, Static	0.110 - 0.600	0.110 - 0.600	Average value: 0.384 Grade Count:41
Tear Strength	37.0 - 147 kN/m	211 - 839 pli	Average value: 73.7 kN/m Grade Count:3
K (wear) Factor	24.2 - 5840 x 10 ⁻⁸ mm ³ /N-M	12.0 - 2900 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	Average value: 508 x 10 ⁻⁸ mm ³ /N-M Grade Count:47
Limiting Pressure Velocity	0.0657 - 2.80 MPa-m/sec	1880 - 79900 psi-ft/min	Average value: 1.40 MPa-m/sec Grade Count:10
Taber Abrasion, mg/1000 Cycles	2.00 - 60.0	2.00 - 60.0	Average value: 16.0 Grade Count:97

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.100 - 6.70e+17 ohm-cm	0.100 - 6.70e+17 ohm-cm	Average value: 2.85e+16 ohm-cm Grade Count:351
Surface Resistance	1.00 - 1.60e+17 ohm	1.00 - 1.60e+17 ohm	Average value: 5.70e+15 ohm Grade Count:271
Insulation Resistance	1000 - 1.00e+12 ohm	1000 - 1.00e+12 ohm	Average value: 7.08e+11 ohm Grade Count:24
Static Decay	0.0100 - 2.00 sec	0.0100 - 2.00 sec	Average value: 1.04 sec Grade Count:48
Shielding Effectiveness	50.0 - 97.0 dB	50.0 - 97.0 dB	Average value: 76.0 dB Grade Count:4
Dielectric Constant	2.70 - 6.80	2.70 - 6.80	Average value: 3.28 Grade Count:221

Electrical Properties	Metric	English	Comments
Dielectric Strength	1.38 - 244 kV/mm	35.0 - 6200 kV/in	Average value: 25.5 kV/mm Grade Count:249
Dissipation Factor	0.000500 - 0.266	0.000500 - 0.266	Average value: 0.00487 Grade Count:247
Arc Resistance	0.000 - 180 sec	0.000 - 180 sec	Average value: 126 sec Grade Count:130
Comparative Tracking Index	0.000 - 250 V	0.000 - 250 V	Average value: 138 V Grade Count:262

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