

Overview of materials for Polyimide, Graphite Filled

Category : Polymer , Thermoplastic , Polyimide, Thermoplastic , Thermoplastic Polyimide, Graphite Filled

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.33 - 1.65 g/cc	0.0480 - 0.0596 lb/in ³	Average value: 1.48 g/cc Grade Count:25
Filler Content	10.0 - 40.0 %	10.0 - 40.0 %	Average value: 21.7 % Grade Count:13
Water Absorption	0.0800 - 1.81 %	0.0800 - 1.81 %	Average value: 0.636 % Grade Count:19
	0.530 - 3.15 %	0.530 - 3.15 %	Average value: 1.90 % Grade Count:11
	@Temperature 50.0 - 80.0 °C	@Temperature 122 - 176 °F	
	1.50 - 2.18 %	1.50 - 2.18 %	Average value: 1.90 % Grade Count:4
	@Temperature 80.0 - 80.0 °C	@Temperature 176 - 176 °F	
	1.50 - 2.18 %	1.50 - 2.18 %	Average value: 1.90 % Grade Count:4
	@Time 86400 - 86400 sec	@Time 24.0 - 24.0 hour	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	111 - 119	111 - 119	Average value: 115 Grade Count:3
Hardness, Shore D	78.0 - 88.0	78.0 - 88.0	Average value: 83.2 Grade Count:14
Tensile Strength, Ultimate	38.0 - 102 MPa	5510 - 14800 psi	Average value: 59.9 MPa Grade Count:17
	23.0 - 52.0 MPa	3340 - 7540 psi	Average value: 33.3 MPa Grade Count:4
	@Temperature 260 - 260 °C	@Temperature 500 - 500 °F	
Tensile Strength, Yield	63.0 - 101 MPa	9140 - 14600 psi	Average value: 77.9 MPa Grade Count:8
Elongation at Break	1.20 - 10.0 %	1.20 - 10.0 %	Average value: 3.33 % Grade Count:25

Mechanical Properties	2.00 - 9.80 % Metric	2.00 - 9.80 % English	Comments Average value: 5.55 % Grade Count:4
	@Temperature 260 - 260 °C	@Temperature 500 - 500 °F	
Elongation at Yield	1.40 - 4.60 %	1.40 - 4.60 %	Average value: 3.12 % Grade Count:13
Modulus of Elasticity	2.65 - 7.58 GPa	384 - 1100 ksi	Average value: 4.13 GPa Grade Count:16
Flexural Yield Strength	55.0 - 150 MPa	7980 - 21800 psi	Average value: 92.6 MPa Grade Count:22
	31.0 - 45.0 MPa	4500 - 6530 psi	Average value: 38.0 MPa Grade Count:4
	@Temperature 260 - 260 °C	@Temperature 500 - 500 °F	
Flexural Modulus	2.74 - 6.41 GPa	397 - 930 ksi	Average value: 4.02 GPa Grade Count:19
	1.86 - 2.756 GPa	270 - 399.7 ksi	Average value: 2.39 GPa Grade Count:4
	@Temperature 260 - 260 °C	@Temperature 500 - 500 °F	
Compressive Yield Strength	70.0 - 268 MPa	10200 - 38900 psi	Average value: 160 MPa Grade Count:15
Compressive Modulus	0.847 - 2.07 GPa	123 - 300 ksi	Average value: 1.55 GPa Grade Count:11
Izod Impact, Notched	0.160 - 0.507 J/cm	0.300 - 0.950 ft-lb/in	Average value: 0.298 J/cm Grade Count:7
Charpy Impact Unnotched	0.780 - 3.51 J/cm ²	3.71 - 16.7 ft-lb/in ²	Average value: 1.87 J/cm ² Grade Count:11
Charpy Impact, Notched	0.160 - 0.480 J/cm ²	0.761 - 2.28 ft-lb/in ²	Average value: 0.337 J/cm ² Grade Count:11
Compression Set	12.5 - 50.4 %	12.5 - 50.4 %	Average value: 31.1 % Grade Count:11

Thermal Properties	Metric	English	Comments
CTE, linear	30.0 - 57.0 µm/m-°C	16.7 - 31.7 µin/in-°F	Average value: 42.7 µm/m-°C Grade Count:9
	@Temperature 50.0 - 300 °C	@Temperature 122 - 572 °F	
Thermal Conductivity	0.490 - 0.530 W/m-K	3.40 - 3.68 BTU-in/hr-ft ² -°F	Average value: 0.510 W/m-K Grade Count:2
	@Temperature 40.0 - 40.0 °C	@Temperature 104 - 104 °F	
Maximum Service Temperature, Air	280 - 330 °C	536 - 626 °F	Average value: 302 °C Grade Count:7
Deflection Temperature at 1.8 MPa (264 psi)	300 - 417 °C	572 - 783 °F	Average value: 347 °C Grade Count:6
Glass Transition Temp, Tg	260 - 370 °C	500 - 698 °F	Average value: 347 °C Grade Count:10

Thermal Properties	Metric	English	Comments
UL RTI, Electrical	50.0 - 130 °C	122 - 266 °F	Average value: 119 °C Grade Count:3
UL RTI, Mechanical with Impact	50.0 - 130 °C	122 - 266 °F	Average value: 119 °C Grade Count:3
UL RTI, Mechanical without Impact	50.0 - 130 °C	122 - 266 °F	Average value: 119 °C Grade Count:3
Flammability, UL94	V-0 - 5VA	V-0 - 5VA	Grade Count:9

Electrical Properties	Metric	English	Comments
Electrical Resistivity	3.00e+6 - 4.00e+19 ohm-cm	3.00e+6 - 4.00e+19 ohm-cm	Average value: 8.01e+18 ohm-cm Grade Count:5
Surface Resistance	1000 - 4.00e+12 ohm	1000 - 4.00e+12 ohm	Average value: 1.81e+12 ohm Grade Count:7
Dielectric Constant	4.58 - 62.0	4.58 - 62.0	Average value: 18.3 Grade Count:5
Dielectric Strength	3.00 - 23.0 kV/mm	76.2 - 584 kV/in	Average value: 12.4 kV/mm Grade Count:4
Dissipation Factor	0.00130 - 0.310	0.00130 - 0.310	Average value: 0.0565 Grade Count:5

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