

Overview of materials for Phenolic, Novolac, Cellulose Filled

Category : Polymer , Thermoset , Phenolic , Phenolic, Novolac, Cellulose Filled

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.05 - 1.45 g/cc	0.0379 - 0.0524 lb/in ³	Average value: 1.33 g/cc Grade Count:26
Water Absorption	0.280 - 1.90 %	0.280 - 1.90 %	Average value: 0.883 % Grade Count:8
Linear Mold Shrinkage	0.00200 - 0.00400 cm/cm	0.00200 - 0.00400 in/in	Average value: 0.00300 cm/cm Grade Count:7

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	70.0 - 115	70.0 - 115	Average value: 94.0 Grade Count:7
Tensile Strength, Ultimate	38.0 - 120 MPa	5510 - 17400 psi	Average value: 64.6 MPa Grade Count:17
Flexural Yield Strength	55.0 - 135 MPa	7980 - 19600 psi	Average value: 90.0 MPa Grade Count:25
Flexural Modulus	4.80 - 11.0 GPa	696 - 1600 ksi	Average value: 7.41 GPa Grade Count:17
Compressive Yield Strength	70.0 - 300 MPa	10200 - 43500 psi	Average value: 180 MPa Grade Count:25
Shear Strength	10.0 - 20.0 MPa	1450 - 2900 psi	Average value: 15.0 MPa Grade Count:8
Izod Impact, Notched	0.270 - 0.630 J/cm	0.506 - 1.18 ft-lb/in	Average value: 0.447 J/cm Grade Count:9

Thermal Properties	Metric	English	Comments
CTE, linear	24.0 - 47.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	13.3 - 26.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 33.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:5
CTE, linear, Transverse to Flow	52.0 - 69.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	28.9 - 38.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 58.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:3
Thermal Conductivity	0.540 - 0.580 W/m-K	3.75 - 4.03 BTU-in/hr-ft ² -°F	Average value: 0.560 W/m-K Grade Count:3

Maximum Service Temperature, Air Thermal Properties	150 °C Metric	302 °F English	Average value: 150 °C Grade Count:4 Comments
Deflection Temperature at 1.8 MPa (264 psi)	165 - 238 °C	329 - 460 °F	Average value: 189 °C Grade Count:9
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:7

Electrical Properties	Metric	English	Comments
Insulation Resistance	100000 - 1.00e+10 ohm	100000 - 1.00e+10 ohm	Average value: 9.46e+8 ohm Grade Count:14
Dielectric Constant	5.50 - 6.00	5.50 - 6.00	Average value: 5.67 Grade Count:6
Dielectric Strength	1.00 - 14.6 kV/mm	25.4 - 371 kV/in	Average value: 5.72 kV/mm Grade Count:7
Dielectric Breakdown	>= 20000 V @Temperature 90.0 - 90.0 °C	>= 20000 V @Temperature 194 - 194 °F	Average value: 23300 V Grade Count:6
	>= 10000 V @Temperature 90.0 - 90.0 °C	>= 10000 V @Temperature 194 - 194 °F	Average value: 23300 V Grade Count:8
Dielectric Breakdown	>= 10000 V @Time 20.0 - 60.0 sec	>= 10000 V @Time 0.00556 - 0.0167 hour	Average value: 23300 V Grade Count:8
	>= 10000 V @Time 20.0 - 60.0 sec	>= 10000 V @Time 0.00556 - 0.0167 hour	Average value: 23300 V Grade Count:8
Dissipation Factor	0.0500 - 0.0550	0.0500 - 0.0550	Average value: 0.0517 Grade Count:6
Arc Resistance	60.0 - 120 sec	60.0 - 120 sec	Average value: 83.0 sec Grade Count:5
Comparative Tracking Index	100 V	100 V	Average value: 100 V Grade Count:8

Processing Properties	Metric	English	Comments
Mold Temperature	155 - 180 °C	311 - 356 °F	Average value: 168 °C Grade Count:3

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