

## Overview of materials for Phenolic, Novolac, Fabric Filled

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

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Phenolic, Novolac, Fabric 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-Fabric-Filled.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Phenolic-Novolac-Fabric-Filled.php)

Physical Properties	Metric	English	Comments
Density	1.15 - 1.45 g/cc	0.0415 - 0.0524 lb/in <sup>3</sup>	Average value: 1.36 g/cc Grade Count:29
Water Absorption	0.300 - 2.20 %	0.300 - 2.20 %	Average value: 0.806 % Grade Count:10
Linear Mold Shrinkage	0.00250 - 0.00300 cm/cm	0.00250 - 0.00300 in/in	Average value: 0.00275 cm/cm Grade Count:10

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	76.0 - 105	76.0 - 105	Average value: 85.8 Grade Count:4
Hardness, Rockwell M	98.0 - 112	98.0 - 112	Average value: 107 Grade Count:4
Ball Indentation Hardness	130 - 170 MPa	18900 - 24700 psi	Average value: 147 MPa Grade Count:7
Tensile Strength, Ultimate	41.0 - 58.0 MPa	5950 - 8410 psi	Average value: 50.1 MPa Grade Count:10
Tensile Strength, Yield	40.0 - 100 MPa	5800 - 14500 psi	Average value: 63.3 MPa Grade Count:9
Modulus of Elasticity	6.00 - 8.00 GPa	870 - 1160 ksi	Average value: 7.14 GPa Grade Count:7
Flexural Yield Strength	60.0 - 180 MPa	8700 - 26100 psi	Average value: 94.6 MPa Grade Count:25
Flexural Modulus	7.00 - 11.0 GPa	1020 - 1600 ksi	Average value: 9.38 GPa Grade Count:8
Compressive Yield Strength	80.0 - 320 MPa	11600 - 46400 psi	Average value: 146 MPa Grade Count:29
Izod Impact, Notched	0.683 - 1.44 J/cm	1.28 - 2.71 ft-lb/in	Average value: 0.991 J/cm Grade Count:10
Izod Impact, Notched (ISO)	8.00 - 55.0 kJ/m <sup>2</sup>	3.81 - 26.2 ft-lb/in <sup>2</sup>	Average value: 19.9 kJ/m <sup>2</sup> Grade Count:9
Coefficient of Friction	0.0200 - 0.200	0.0200 - 0.200	Average value: 0.0650 Grade Count:5

Mechanical Properties	Metric	English	Comments
CTE, linear	15.0 - 40.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.33 - 22.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 29.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:11
Thermal Conductivity	0.290 - 0.300 W/m-K	2.01 - 2.08 BTU-in/hr-ft <sup>2</sup> -°F	Average value: 0.296 W/m-K Grade Count:7
Maximum Service Temperature, Air	120 - 150 °C	248 - 302 °F	Average value: 137 °C Grade Count:12
Deflection Temperature at 1.8 MPa (264 psi)	121 - 260 °C	250 - 500 °F	Average value: 196 °C Grade Count:10
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:3

Electrical Properties	Metric	English	Comments
Surface Resistance	1.00e+8 ohm	1.00e+8 ohm	Average value: 1.00e+8 ohm Grade Count:5
Insulation Resistance	100000 - 2.00e+7 ohm	100000 - 2.00e+7 ohm	Average value: 4.44e+6 ohm Grade Count:10
Dielectric Constant	5.00 - 10.0	5.00 - 10.0	Average value: 6.00 Grade Count:6
Dielectric Strength	3.10 - 20.0 kV/mm	78.7 - 508 kV/in	Average value: 11.0 kV/mm Grade Count:9
Dielectric Breakdown	$\geq 1000$ V @Temperature 90.0 - 90.0 °C	$\geq 1000$ V @Temperature 194 - 194 °F	Average value: 7220 V Grade Count:9
	$\geq 1000$ V @Time 20.0 - 60.0 sec	$\geq 1000$ V @Time 0.00556 - 0.0167 hour	Average value: 7220 V Grade Count:9
Dielectric Loss Index	0.300 - 0.400	0.300 - 0.400	Average value: 0.340 Grade Count:5

Processing Properties	Metric	English	Comments
Mold Temperature	150 - 180 °C	302 - 356 °F	Average value: 164 °C Grade Count:9

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