

## Overview of materials for Phenolic, Resole, Wood Filled

Category : Polymer , Thermoset , Phenolic , Phenolic, Resole, Wood Filled

### Material Notes:

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

Physical Properties	Metric	English	Comments
Density	1.36 - 1.54 g/cc	0.0491 - 0.0556 lb/in <sup>3</sup>	Average value: 1.43 g/cc Grade Count:10
Water Absorption	0.360 - 0.630 %	0.360 - 0.630 %	Average value: 0.484 % Grade Count:10
Linear Mold Shrinkage	0.00233 - 0.0101 cm/cm	0.00233 - 0.0101 in/in	Average value: 0.00554 cm/cm Grade Count:10

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell E	57.0 - 89.0	57.0 - 89.0	Average value: 75.3 Grade Count:10
Tensile Strength, Ultimate	51.0 - 69.0 MPa	7400 - 10000 psi	Average value: 58.0 MPa Grade Count:10
Elongation at Break	0.680 - 1.26 %	0.680 - 1.26 %	Average value: 0.927 % Grade Count:10
Modulus of Elasticity	6.60 - 9.40 GPa	957 - 1360 ksi	Average value: 8.03 GPa Grade Count:10
Flexural Yield Strength	74.0 - 105 MPa	10700 - 15200 psi	Average value: 85.4 MPa Grade Count:10
Flexural Modulus	6.60 - 8.60 GPa	957 - 1250 ksi	Average value: 7.50 GPa Grade Count:10
Compressive Yield Strength	157 - 215 MPa	22800 - 31200 psi	Average value: 189 MPa Grade Count:10
Poissons Ratio	0.330 - 0.360	0.330 - 0.360	Average value: 0.346 Grade Count:5
Shear Modulus	2.70 - 3.26 GPa	392 - 473 ksi	Average value: 2.96 GPa Grade Count:5
Izod Impact, Notched	0.152 - 0.209 J/cm	0.285 - 0.392 ft-lb/in	Average value: 0.183 J/cm Grade Count:10
Charpy Impact, Notched	0.182 - 0.220 J/cm <sup>2</sup>	0.866 - 1.05 ft-lb/in <sup>2</sup>	Average value: 0.194 J/cm <sup>2</sup> Grade Count:10

Thermal Properties	Metric	English	Comments
CTE, linear	37.0 - 67.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	20.6 - 37.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average value: 56.6 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Grade Count:7
	@Temperature 40.0 - 130 $^\circ\text{C}$	@Temperature 104 - 266 $^\circ\text{F}$	
Thermal Conductivity	0.370 - 0.460 W/m-K	2.57 - 3.19 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$	Average value: 0.400 W/m-K Grade Count:4
	@Temperature 100 - 100 $^\circ\text{C}$	@Temperature 212 - 212 $^\circ\text{F}$	
Maximum Service Temperature, Air	183 - 207 $^\circ\text{C}$	361 - 405 $^\circ\text{F}$	Average value: 196 $^\circ\text{C}$ Grade Count:10
Deflection Temperature at 1.8 MPa (264 psi)	158 - 225 $^\circ\text{C}$	316 - 437 $^\circ\text{F}$	Average value: 186 $^\circ\text{C}$ Grade Count:10
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:10
Oxygen Index	25.5 - 31.0 %	25.5 - 31.0 %	Average value: 28.3 % Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	8.30e+11 - 3.00e+13 ohm-cm	8.30e+11 - 3.00e+13 ohm-cm	Average value: 1.04e+13 ohm-cm Grade Count:9
Dielectric Constant	4.40 - 7.00	4.40 - 7.00	Average value: 5.74 Grade Count:9
Dielectric Strength	8.00 - 14.2 kV/mm	203 - 361 kV/in	Average value: 11.2 kV/mm Grade Count:9
Dissipation Factor	0.0410 - 0.172	0.0410 - 0.172	Average value: 0.0658 Grade Count:9
Arc Resistance	87.0 - 183 sec	87.0 - 183 sec	Average value: 144 sec Grade Count:9
Comparative Tracking Index	175 V	175 V	Average value: 175 V Grade Count:10

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