

Overview of materials for Phenolic, Novolac, Flock Filled

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

Material Notes:

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

| Physical Properties | Metric | English | Comments |
|-----------------------|-------------------------|------------------------------------|--|
| Density | 1.38 - 1.45 g/cc | 0.0499 - 0.0524 lb/in ³ | Average value: 1.41 g/cc Grade Count:7 |
| Water Absorption | 0.180 - 0.630 % | 0.180 - 0.630 % | Average value: 0.436 % Grade Count:7 |
| Linear Mold Shrinkage | 0.00300 - 0.00850 cm/cm | 0.00300 - 0.00850 in/in | Average value: 0.00576 cm/cm Grade Count:7 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|---------------------------------|------------------------------------|--|
| Hardness, Rockwell E | 63.0 - 91.0 | 63.0 - 91.0 | Average value: 77.7 Grade Count:7 |
| Tensile Strength, Ultimate | 36.0 - 55.7 MPa | 5220 - 8080 psi | Average value: 48.6 MPa Grade Count:7 |
| Elongation at Break | 0.710 - 1.00 % | 0.710 - 1.00 % | Average value: 0.817 % Grade Count:6 |
| Modulus of Elasticity | 6.90 - 8.27 GPa | 1000 - 1200 ksi | Average value: 7.70 GPa Grade Count:6 |
| Flexural Yield Strength | 61.0 - 83.2 MPa | 8850 - 12100 psi | Average value: 74.2 MPa Grade Count:7 |
| Flexural Modulus | 6.20 - 7.72 GPa | 899 - 1120 ksi | Average value: 7.12 GPa Grade Count:7 |
| Compressive Yield Strength | 139 - 213 MPa | 20200 - 30900 psi | Average value: 175 MPa Grade Count:7 |
| Poissons Ratio | 0.300 - 0.350 | 0.300 - 0.350 | Average value: 0.338 Grade Count:4 |
| Shear Modulus | 2.56 - 3.00 GPa | 371 - 435 ksi | Average value: 2.87 GPa Grade Count:4 |
| Izod Impact, Notched | 0.210 - 0.277 J/cm | 0.393 - 0.519 ft-lb/in | Average value: 0.241 J/cm Grade Count:6 |
| Charpy Impact, Notched | 0.199 - 0.400 J/cm ² | 0.947 - 1.90 ft-lb/in ² | Average value: 0.271 J/cm ² Grade Count:7 |

| Thermal Properties | Metric | English | Comments |
|---|---|--|---|
| CTE, linear | 44.0 - 67.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ | 24.4 - 37.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ | Average value: 54.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ Grade Count:3 |
| | @Temperature 40.0 - 130 $^{\circ}\text{C}$ | @Temperature 104 - 266 $^{\circ}\text{F}$ | |
| Thermal Conductivity | 0.370 - 0.400 W/m-K | 2.57 - 2.78 BTU-in/hr-ft ² - $^{\circ}\text{F}$ | Average value: 0.385 W/m-K Grade Count:2 |
| | @Temperature 100 - 100 $^{\circ}\text{C}$ | @Temperature 212 - 212 $^{\circ}\text{F}$ | |
| Maximum Service Temperature, Air | 170 - 200 $^{\circ}\text{C}$ | 338 - 392 $^{\circ}\text{F}$ | Average value: 189 $^{\circ}\text{C}$ Grade Count:7 |
| Deflection Temperature at 1.8 MPa (264 psi) | 156 - 196 $^{\circ}\text{C}$ | 313 - 385 $^{\circ}\text{F}$ | Average value: 173 $^{\circ}\text{C}$ Grade Count:7 |
| Flammability, UL94 | HB - V-0 | HB - V-0 | Grade Count:7 |
| Oxygen Index | 24.2 - 27.1 % | 24.2 - 27.1 % | Average value: 25.7 % Grade Count:3 |

| Electrical Properties | Metric | English | Comments |
|----------------------------|----------------------------|----------------------------|--|
| Electrical Resistivity | 6.38e+10 - 2.13e+12 ohm-cm | 6.38e+10 - 2.13e+12 ohm-cm | Average value: 5.65e+11 ohm-cm Grade Count:7 |
| Dielectric Constant | 4.50 - 6.60 | 4.50 - 6.60 | Average value: 5.14 Grade Count:7 |
| Dielectric Strength | 7.90 - 16.2 kV/mm | 201 - 411 kV/in | Average value: 11.1 kV/mm Grade Count:7 |
| Dissipation Factor | 0.0400 - 0.0760 | 0.0400 - 0.0760 | Average value: 0.0560 Grade Count:7 |
| Arc Resistance | 26.0 - 160 sec | 26.0 - 160 sec | Average value: 110 sec Grade Count:7 |
| Comparative Tracking Index | 150 - 175 V | 150 - 175 V | Average value: 168 V Grade Count:7 |

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