

Vyncolit 4451 XB Novolac Phenolic

Category : Polymer , Thermoset , Filled/Reinforced Thermoset , Phenolic , Phenolic, Novolac, Mineral Filled

Material Notes:

Organic and mineral filled phenolic molding compound with excellent mechanical properties (highest notched impact strength).USES: Fuse holders, brush holders, circuit breakers, automotive ignition and solenoid covers.Information provided by Vyncolit, a Sumitomo Bakelite Group

Order this product through the following link:

http://www.lookpolymers.com/polymer_Vyncolit-4451-XB-Novolac-Phenolic.php

Physical Properties	Metric	English	Comments
Bulk Density	0.450 - 0.550 g/cc	0.0163 - 0.0199 lb/in ³	Powder Density; ISO 60
Density	1.53 g/cc	0.0553 lb/in ³	Relative Density; ISO 1183
Linear Mold Shrinkage	0.0070 - 0.0080 cm/cm	0.0070 - 0.0080 in/in	Injection Molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	50.0 - 60.0 MPa	7250 - 8700 psi	ISO 527
Elongation at Break	0.75 - 0.85 %	0.75 - 0.85 %	Tensile; ISO 527
	1.3 - 1.5 %	1.3 - 1.5 %	Flexure; ISO 178
Tensile Modulus	8.50 - 10.0 GPa	1230 - 1450 ksi	ISO 527
Flexural Strength	120 - 130 MPa	17400 - 18900 psi	At Rupture; ISO 178
Flexural Modulus	7.00 - 9.00 GPa	1020 - 1310 ksi	ISO 178
Compressive Strength	200 - 230 MPa	29000 - 33400 psi	ISO 604
Charpy Impact Unnotched	0.850 - 1.00 J/cm ²	4.05 - 4.76 ft-lb/in ²	ISO 179
Charpy Impact, Notched	0.350 - 0.450 J/cm ²	1.67 - 2.14 ft-lb/in ²	ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	45.0 - 55.0 $\mu\text{m/m-}^{\circ}\text{C}$ @Temperature 20.0 $^{\circ}\text{C}$	25.0 - 30.6 $\mu\text{in/in-}^{\circ}\text{F}$ @Temperature 68.0 $^{\circ}\text{F}$	TMA
CTE, linear, Transverse to Flow	55.0 - 65.0 $\mu\text{m/m-}^{\circ}\text{C}$ @Temperature 20.0 $^{\circ}\text{C}$	30.6 - 36.1 $\mu\text{in/in-}^{\circ}\text{F}$ @Temperature 68.0 $^{\circ}\text{F}$	TMA
Deflection Temperature at 1.8 MPa (264 psi)	155 - 175 $^{\circ}\text{C}$	311 - 347 $^{\circ}\text{F}$	ISO 75 A
Deflection Temperature at 8.0 MPa	130 - 150 $^{\circ}\text{C}$	266 - 302 $^{\circ}\text{F}$	ISO 75 C

Thermal Properties	Metric	English	Comments
Flammability, UL94			
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	V-0	V-0	
	@Thickness 4.00 mm	@Thickness 0.157 in	
Shrinkage	0.20 - 0.30 %	0.20 - 0.30 %	Post Shrinkage; ISO 2577

Electrical Properties	Metric	English	Comments
Dielectric Strength	25.0 kV/mm	635 kV/in	IEC 243
Comparative Tracking Index	175 V	175 V	IEC 112

Descriptive Properties	Value	Comments
Color	Black	
ISO type	PF 2 C3	
Main Filler	Mineral & Organic	
Molding Method	Compression, transfer, injection	

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