

Vyncolit 4221 XB Novolac Phenolic

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

Material Notes:

Mineral and organic filled phenolic molding compound with good mechanical properties. Information provided by Vyncolit, a Sumitomo Bakelite Group

Order this product through the following link:

http://www.lookpolymers.com/polymer_Vyncolit-4221-XB-Novolac-Phenolic.php

Physical Properties	Metric	English	Comments
Bulk Density	0.600 - 0.750 g/cc	0.0217 - 0.0271 lb/in ³	Powder Density; ISO 60
Density	1.50 g/cc	0.0542 lb/in ³	Relative Density; ISO 1183
Linear Mold Shrinkage	0.0060 - 0.0070 cm/cm	0.0060 - 0.0070 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	0.65 - 0.75 %	0.65 - 0.75 %	Tensile; ISO 527
	1.5 - 1.7 %	1.5 - 1.7 %	Flexure; ISO 178
Tensile Modulus	9.00 - 11.0 GPa	1310 - 1600 ksi	ISO 527
Flexural Strength	110 - 130 MPa	16000 - 18900 psi	At Rupture; ISO 178
Flexural Modulus	8.00 - 10.0 GPa	1160 - 1450 ksi	ISO 178
Compressive Strength	220 - 250 MPa	31900 - 36300 psi	ISO 604
Charpy Impact Unnotched	0.800 - 1.00 J/cm ²	3.81 - 4.76 ft-lb/in ²	ISO 179
Charpy Impact, Notched	0.200 - 0.300 J/cm ²	0.952 - 1.43 ft-lb/in ²	ISO 179

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	40.0 - 50.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	22.2 - 27.8 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	TMA
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	50.0 - 60.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	27.8 - 33.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	TMA
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	155 - 175 $^\circ\text{C}$	311 - 347 $^\circ\text{F}$	ISO 75 Af
Deflection Temperature at 8.0 MPa	130 - 150 $^\circ\text{C}$	266 - 302 $^\circ\text{F}$	ISO 75 C

Thermal Properties	^{V-1} Metric	^{V-1} English	Comments
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	V-0	V-0	
	@Thickness 4.00 mm	@Thickness 0.157 in	
Shrinkage	0.15 - 0.25 %	0.15 - 0.25 %	Post Shrinkage; ISO 2577

Electrical Properties	Metric	English	Comments
Insulation Resistance	1.00e+9 - 1.00e+10 ohm	1.00e+9 - 1.00e+10 ohm	Dry; IEC 167
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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