

Hexion Bakelite™ PF 4260 Phenolic Formaldehyde Resin, Resistant to High Temperatures, Improved Electrical Properties, Low Shrinkage, High Mechanical Strength

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

Material Notes:

Phenolic molding compound, inorganically filled, glass fiber reinforced, high dimensional stability at raised temperature, good media resistance, heat-resistant. Application areas: Commutators (starter motors). Information provided by Bakelite AG. Bakelite AG became a part of Hexion in 2005.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hexion-Bakelite-PF-4260-Phenolic-Formaldehyde-Resin-Resistant-to-High-Temperatures-Improved-Electrical-Properties-Low-Shrinkage-High-Mechanical-Strength.php

Physical Properties	Metric	English	Comments
Density	1.69 g/cc	0.0611 lb/in ³	ISO 1183
Apparent Bulk Density	0.710 g/cc	0.0257 lb/in ³	ISO 60
Linear Mold Shrinkage, Flow	0.00070 cm/cm	0.00070 in/in	Compression molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	425 MPa	61600 psi	H 961/30; ISO 2039/P1
Tensile Strength at Break	85.0 MPa	12300 psi	5 mm/min; ISO 527 - 1/2
Tensile Modulus	13.5 GPa	1960 ksi	1 mm/min; ISO 527 - 1/2
Flexural Strength	150 MPa	21800 psi	2 mm/min; ISO 178
Flexural Modulus	12.0 GPa	1740 ksi	ISO 178
Compressive Strength	250 MPa	36300 psi	Test specimen flat tested; ISO 604
Charpy Impact Unnotched	1.10 J/cm ² @Temperature 23.0 °C	5.24 ft-lb/in ² @Temperature 73.4 °F	ISO 179-1/2 eU
Charpy Impact, Notched	0.350 J/cm ² @Temperature 23.0 °C	1.67 ft-lb/in ² @Temperature 73.4 °F	ISO 179-1/2 eA

Thermal Properties	Metric	English	Comments
Deflection Temperature at 8.0 MPa	175 °C	347 °F	ISO 75-2
Shrinkage	0.0700 % @Temperature 110 °C	0.0700 % @Temperature 230 °F	Compression molding; ISO 2577

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	IEC 60093
Surface Resistance	1.00e+11 ohm	1.00e+11 ohm	IEC 60093
Dielectric Constant	6.0	6.0	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	35.0 kV/mm	889 kV/in	IEC 60243-P1
	@Thickness 1.00 mm	@Thickness 0.0394 in	
Dissipation Factor	0.060	0.060	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	

Processing Properties	Metric	English	Comments
Feed Temperature	60.0 - 75.0 °C	140 - 167 °F	Injection molding
Nozzle Temperature	80.0 - 100 °C	176 - 212 °F	Injection molding
Melt Temperature	80.0 - 100 °C	176 - 212 °F	Injection molding
Mold Temperature	160 - 190 °C	320 - 374 °F	Injection molding
	160 - 190 °C	320 - 374 °F	Compression molding
Injection Pressure	>= 15.0 MPa	>= 2180 psi	Compression and injection cavity mold pressure
Back Pressure	0.500 - 2.00 MPa	72.5 - 290 psi	Injection molding
Cure Time	0.167 - 0.333 min	0.00278 - 0.00556 hour	Per 1 mm of wall thickness, injection molding
	0.333 - 0.667 min	0.00556 - 0.0111 hour	Per 1 mm of wall thickness, compression molding

Descriptive Properties	Value	Comments
Chromatic Spectrum	All Colors	
Creep Rupture Strength	Very Good	
Holding Pressure	Approximately 40-60% of injection pressure	
Media Resistance	Very Good	
Moisture Absorption	11 mg	ISO 62, 24 hours at 23°C
Reserves by Peak Temperature	Very High	
Thermal Expansion	Very Slight	

Descriptive Properties	Value	Comments
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