Hexion Bakelite™ PF 4041 Phenolic Formaldehyde Resin, Resistant to High Temperatures (discontinued **)

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

Material Notes:

Phenolic molding compound, glass fiber reinforced and inorganically filled, elasticized. Very good heat resistance, very good mechanical properties, reduced mold shrinkage and post-shrinkage, good chemical resistance.Application areas: Metal substitute, relays.Information provided by Bakelite AGBakelite AG became a part of Hexion in 2005.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Hexion-Bakelite-PF-4041-Phenolic-Formaldehyde-Resin-Resistant-to-High-Temperatures-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.60 g/cc	0.0578 lb/in³	ISO 1183
Apparent Bulk Density	0.650 g/cc	0.0235 lb/in³	ISO 60
Linear Mold Shrinkage, Flow	0.0030 cm/cm	0.0030 in/in	Injection molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Flexural Strength	120 MPa	17400 psi	2 mm/min; ISO 178
Flexural Modulus	9.50 GPa	1380 ksi	ISO 178
Charpy Impact Unnotched	0.800 J/cm² @Temperature 23.0 °C	3.81 ft-lb/in² @Temperature 73.4 °F	ISO 179-1/2 eU
Charpy Impact, Notched	0.250 J/cm² @Temperature 23.0 °C	1.19 ft-lb/in² @Temperature 73.4 °F	ISO 179-1/2 eA

Thermal Properties	Metric	English	Comments
Deflection Temperature at 8.0 MPa	150 °C	302 °F	ISO 75-2
Shrinkage	0.100 % @Temperature 110 °C, Time 605000 sec	0.100 % @Temperature 230 °F, Time 168 hour	Injection molding; ISO 2577

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+11 ohm-cm	1.00e+11 ohm-cm	IEC 60093
Surface Resistance	1.00e+10 ohm	1.00e+10 ohm	IEC 60093
Dielectric Constant	5.2	5.2	IEC 60250

Electrical Properties	Metric	English	Comments
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm @Thickness 1.00 mm	762 kV/in @Thickness 0.0394 in	IEC 60243-P1
Dissipation Factor	0.010 @Frequency 100 Hz	0.010 @Frequency 100 Hz	IEC 60250

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	25 mg	ISO 62, 24 hours at 23°C
Reserves by Peak Temperature	Very High	
Thermal Expansion	Very Slight	

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