

Hexion Bakelite™ PF 13 Phenolic Formaldehyde Resin, UL Listed (discontinued **)

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

Material Notes:

Phenolic molding compound, inorganically mica filled, heat resistance, good electrical properties, UL listed molding compound 0.75 mm/V-1 (NC), 3 mm/V-0, standardized molding compound. Application areas: Electric motor slip ring commutators, commutators (adjustment motors, truck starter motors, vacuum cleaners, kitchen devices, electrical tools, electrical vehicles), bobbins. 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-13-Phenolic-Formaldehyde-Resin-UL-Listed-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.85 g/cc	0.0668 lb/in ³	ISO 1183
Apparent Bulk Density	0.650 g/cc	0.0235 lb/in ³	ISO 60
Linear Mold Shrinkage, Flow	-0.000100 cm/cm	-0.000100 in/in	Compression molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	425 MPa	61600 psi	H 961/30; ISO 2039/P1
Flexural Strength	85.0 MPa	12300 psi	2 mm/min; ISO 178
Flexural Modulus	25.0 GPa	3630 ksi	ISO 178
Compressive Strength	135 MPa	19600 psi	Test specimen flat tested; ISO 604
Charpy Impact Unnotched	0.300 J/cm ² @Temperature 23.0 °C	1.43 ft-lb/in ² @Temperature 73.4 °F	ISO 179-1/2 eU
Charpy Impact, Notched	0.200 J/cm ² @Temperature 23.0 °C	0.952 ft-lb/in ² @Temperature 73.4 °F	ISO 179-1/2 eA

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	150 °C	302 °F	<20000 hours; IEC 60216-P1
	200 °C	392 °F	< 50 hours; IEC 60216-P1
Deflection Temperature at 8.0 MPa	160 °C	320 °F	ISO 75-2
UL RTI, Electrical	150 °C @Thickness 0.750 mm	302 °F @Thickness 0.0295 in	NC
	150 °C	302 °F	

UL RTI, Mechanical with Impact Thermal Properties	Metric @ Thickness 0.750 mm	English @ Thickness 0.0295 in	NC Comments
UL RTI, Mechanical without Impact	150 °C @ Thickness 0.750 mm	302 °F @ Thickness 0.0295 in	NC
Flammability, UL94	V-1 @ Thickness 0.750 mm	V-1 @ Thickness 0.0295 in	NC
	V-0 @ Thickness 3.00 mm	V-0 @ Thickness 0.118 in	(NC)
Shrinkage	0.0200 % @ Temperature 110 °C	0.0200 % @ 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	5.0 @ Frequency 100 Hz	5.0 @ Frequency 100 Hz	IEC 60250
Dielectric Strength	30.0 kV/mm @ Thickness 1.00 mm	762 kV/in @ Thickness 0.0394 in	IEC 60243-P1
Dissipation Factor	0.040 @ Frequency 100 Hz	0.040 @ Frequency 100 Hz	IEC 60250
Arc Resistance	180 - 240 sec @ Thickness 3.00 mm	180 - 240 sec @ Thickness 0.118 in	(NC)
High Voltage Arc Resistance to Ignition (HVAR)	>= 300 sec @ Thickness 0.750 mm	>= 300 sec @ Thickness 0.0295 in	NC
Comparative Tracking Index	175 V	175 V	Test liquid A; IEC 60112
Hot Wire Ignition, HWI	30 - 60 sec @ Thickness 0.750 mm	30 - 60 sec @ Thickness 0.0295 in	NC
	>= 120 sec @ Thickness 1.50 mm	>= 120 sec @ Thickness 0.0591 in	NC
High Amp Arc Ignition, HAI	30 - 60 arcs @ Thickness 0.750 mm	30 - 60 arcs @ Thickness 0.0295 in	NC
High Voltage Arc-Tracking Rate,	0.000 - 10.0 mm/min	0.000 - 0.394 in/min	

Electrical Properties	Metric @ Thickness 3.00 mm	English @ Thickness 0.118 in	(NC) Comments
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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	10 mg	ISO 62, 24 hours at 23°C
Reserves by Peak Temperature	Very High	
Thermal Expansion	Very Slight	

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