

Hexion Bakelite™ PF 31 Phenolic Formaldehyde Resin, UL Listed (discontinued **)

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

Material Notes:

Phenolic molding compound, mainly organically filled, standard molding compound for normal stress, UL listed molding compound 1.5 mm/V-1 (All), 3 mm/V-0 (All), standardized molding compound. Application areas: Moldings of all kinds from screw caps to large casings, electrical installation material, pan handles, operating elements, toaster parts and pistons for braking power energizers, carbon brush holders, lamp housings, decor items, ashtrays. 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-31-Phenolic-Formaldehyde-Resin-UL-Listed-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.42 g/cc	0.0513 lb/in ³	ISO 1183
Apparent Bulk Density	0.630 g/cc	0.0228 lb/in ³	ISO 60
Linear Mold Shrinkage, Flow	0.0040 cm/cm	0.0040 in/in	Compression molding; ISO 2577
	0.0080 cm/cm	0.0080 in/in	Injection molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	325 MPa	47100 psi	H 961/30; ISO 2039/P1
Tensile Strength at Break	50.0 MPa	7250 psi	5 mm/min; ISO 527 - 1/2
Tensile Modulus	7.50 GPa	1090 ksi	1 mm/min; ISO 527 - 1/2
Flexural Strength	95.0 MPa	13800 psi	2 mm/min; ISO 178
Flexural Modulus	7.50 GPa	1090 ksi	ISO 178
Compressive Strength	250 MPa	36300 psi	Test specimen flat tested; ISO 604
Charpy Impact Unnotched	0.700 J/cm ²	3.33 ft-lb/in ²	ISO 179-1/2 eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.150 J/cm ²	0.714 ft-lb/in ²	ISO 179-1/2 eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	140 °C	284 °F	<20000 hours; IEC 60216-P1
	180 °C	356 °F	< 50 hours; IEC 60216-P1

Deflection Temperature at 8.0 MPa Thermal Properties	125 °C Metric	257 °F English	ISO 75-2 Comments
UL RTI, Electrical	150 °C @Thickness 1.50 mm	302 °F @Thickness 0.0591 in	(ALL)
UL RTI, Mechanical with Impact	150 °C @Thickness 1.50 mm	302 °F @Thickness 0.0591 in	(ALL)
UL RTI, Mechanical without Impact	150 °C @Thickness 1.50 mm	302 °F @Thickness 0.0591 in	(ALL)
Flammability, UL94	V-1 @Thickness 1.50 mm	V-1 @Thickness 0.0591 in	(ALL)
	V-0 @Thickness 3.00 mm	V-0 @Thickness 0.118 in	ALL
Shrinkage	0.400 % @Temperature 110 °C	0.400 % @Temperature 230 °F	Compression molding; ISO 2577
	0.500 % @Temperature 110 °C, Time 605000 sec	0.500 % @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	10 @Frequency 100 Hz	10 @Frequency 100 Hz	IEC 60250
Dielectric Strength	25.0 kV/mm @Thickness 1.00 mm	635 kV/in @Thickness 0.0394 in	IEC 60243-P1
Dissipation Factor	0.31 @Frequency 100 Hz	0.31 @Frequency 100 Hz	IEC 60250
Arc Resistance	60 - 120 sec @Thickness 3.00 mm	60 - 120 sec @Thickness 0.118 in	ALL
Comparative Tracking Index	125 V	125 V	Test liquid A; IEC 60112
Hot Wire Ignition, HWI	60 - 120 sec @Thickness 1.50 mm	60 - 120 sec @Thickness 0.0591 in	(ALL)
	>= 120 sec	>= 120 sec	

Electrical Properties	Metric	English	ALL Comments
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Amp Arc Ignition, HAI	60 - 120 arcs	60 - 120 arcs	(ALL)
	@Thickness 1.50 mm	@Thickness 0.0591 in	

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	Subdued Colors	
Creep Rupture Strength	Good	
Holding Pressure	Approximately 40-60% of injection pressure	
Media Resistance	Good	
Moisture Absorption	65 mg	ISO 62, 24 hours at 23°C
Reserves by Peak Temperature	High	
Thermal Expansion	Slight	

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