

## Hexion Bakelite™ 460124 Phenolic Formaldehyde Resin (discontinued \*\*)

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

### Material Notes:

Phenolic molding compound, mainly organically filled, standard molding compound for normal stress. Application areas: Cookware fittings, electric devices. 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-460124-Phenolic-Formaldehyde-Resin-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Hexion-Bakelite-460124-Phenolic-Formaldehyde-Resin-nbspdiscontinued-.php)

Physical Properties	Metric	English	Comments
Density	1.43 g/cc	0.0517 lb/in <sup>3</sup>	ISO 1183
Apparent Bulk Density	0.590 g/cc	0.0213 lb/in <sup>3</sup>	ISO 60
Linear Mold Shrinkage, Flow	0.0094 cm/cm	0.0094 in/in	Injection molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	290 MPa	42100 psi	H 961/30; ISO 2039/P1
Tensile Strength at Break	45.0 MPa	6530 psi	5 mm/min; ISO 527 - 1/2
Tensile Modulus	6.50 GPa	943 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	220 MPa	31900 psi	Test specimen flat tested; ISO 604
Charpy Impact Unnotched	0.650 J/cm <sup>2</sup> @Temperature 23.0 °C	3.09 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	ISO 179-1/2 eU
Charpy Impact, Notched	0.150 J/cm <sup>2</sup> @Temperature 23.0 °C	0.714 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	ISO 179-1/2 eA

Thermal Properties	Metric	English	Comments
Deflection Temperature at 8.0 MPa	105 °C	221 °F	ISO 75-2
Shrinkage	0.780 % @Temperature 110 °C, Time 605000 sec	0.780 % @Temperature 230 °F, Time 168 hour	Injection molding; ISO 2577

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	IEC 60093

Electrical Properties	Metric	English	Comments
Dielectric Constant	16 @Frequency 100 Hz	16 @Frequency 100 Hz	IEC 60250
Dielectric Strength	14.0 kV/mm @Thickness 1.00 mm	356 kV/in @Thickness 0.0394 in	IEC 60243-P1
Dissipation Factor	0.36 @Frequency 100 Hz	0.36 @Frequency 100 Hz	IEC 60250
Comparative Tracking Index	125 V	125 V	Test liquid A; IEC 60112

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

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