

## Hexion Bakelite™ X65 Phenolic Formaldehyde Resin, UL Listed (discontinued \*\*)

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

### Material Notes:

Phenolic molding compound, inorganically/organically filled, good heat-resistance and dimensional stability, UL listed molding compound 3.0 mm/V-0 (BN, BK). Application areas: Oven strips. 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-X65-Phenolic-Formaldehyde-Resin-UL-Listed-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Hexion-Bakelite-X65-Phenolic-Formaldehyde-Resin-UL-Listed-nbspdiscontinued-.php)

Physical Properties	Metric	English	Comments
Density	1.51 g/cc	0.0546 lb/in <sup>3</sup>	ISO 1183
Apparent Bulk Density	0.680 g/cc	0.0246 lb/in <sup>3</sup>	ISO 60
Linear Mold Shrinkage, Flow	0.0055 cm/cm	0.0055 in/in	Compression molding; ISO 2577
	0.0075 cm/cm	0.0075 in/in	Injection molding; ISO 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	275 MPa	39900 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	8.00 GPa	1160 ksi	1 mm/min; ISO 527 - 1/2
Flexural Strength	80.0 MPa	11600 psi	2 mm/min; ISO 178
Flexural Modulus	8.00 GPa	1160 ksi	ISO 178
Compressive Strength	165 MPa	23900 psi	Test specimen flat tested; ISO 604
Charpy Impact Unnotched	0.650 J/cm <sup>2</sup>	3.09 ft-lb/in <sup>2</sup>	ISO 179-1/2 eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.140 J/cm <sup>2</sup>	0.666 ft-lb/in <sup>2</sup>	ISO 179-1/2 eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
Deflection Temperature at 8.0 MPa	115 °C	239 °F	ISO 75-2
UL RTI, Electrical	150 °C	302 °F	BN, BK
	@Thickness 1.50 mm	@Thickness 0.0591 in	
UL RTI, Mechanical with Impact	150 °C	302 °F	BN, BK

Thermal Properties	@Thickness 1.50 mm Metric	@Thickness 0.0591 in English	Comments
UL RTI, Mechanical without Impact	150 °C @Thickness 1.50 mm	302 °F @Thickness 0.0591 in	BN, BK
Flammability, UL94	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	BN, BK
	V-0 @Thickness 3.00 mm	V-0 @Thickness 0.118 in	BN, BK
Shrinkage	0.550 % @Temperature 110 °C	0.550 % @Temperature 230 °F	Compression molding; ISO 2577
	0.350 % @Temperature 110 °C, Time 605000 sec	0.350 % @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	13 @Frequency 100 Hz	13 @Frequency 100 Hz	IEC 60250
Dielectric Strength	15.0 kV/mm @Thickness 1.00 mm	381 kV/in @Thickness 0.0394 in	IEC 60243-P1
Dissipation Factor	0.30 @Frequency 100 Hz	0.30 @Frequency 100 Hz	IEC 60250
Arc Resistance	120 - 180 sec @Thickness 3.00 mm	120 - 180 sec @Thickness 0.118 in	BN, BK
Comparative Tracking Index	175 - 250 V @Thickness 3.00 mm	175 - 250 V @Thickness 0.118 in	BN, BK
Hot Wire Ignition, HWI	60 - 120 sec @Thickness 1.50 mm	60 - 120 sec @Thickness 0.0591 in	BN, BK
	>= 120 sec @Thickness 3.00 mm	>= 120 sec @Thickness 0.118 in	BN, BK
High Amp Arc Ignition, HAI	30 - 60 arcs @Thickness 1.50 mm	30 - 60 arcs @Thickness 0.0591 in	BN, BK

Electrical Properties High Voltage Arc-Tracking Rate, HVTR	Metric 25.4 mm/min @Thickness 3.00 mm	English 1.00 in/min @Thickness 0.118 in	Comments BR, BR
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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	50 mg	ISO 62, 24 hours at 23°C
Reserves by Peak Temperature	Very High	
Thermal Expansion	Very Slight	

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China