

Raschig Group RESINOL® 400 EPF Phenolic

Category : Polymer , Thermoset , Phenolic

Material Notes:

Glass-fiber reinforced phenolic molding compound. Excellent heat resistance, low mould shrinkage and post-shrinkage, good chemical resistance and very good mechanical properties. This product meets the allowed upper limits for heavy metals and PCAs and also conforms to the requirements of the EU directives 2002/95 (RoHS), 2002/96 (WEEE) and 2006/122 (PFOS) Processing: Injection and compression molding Applications: Commutators Information provided by Raschig Group

Order this product through the following link:

http://www.lookpolymers.com/polymer_Raschig-Group-RESINOL-400-EPF-Phenolic.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.85 - 1.95 g/cc	1.85 - 1.95 g/cc	ISO 1183
Apparent Bulk Density	0.600 - 0.800 g/cc	0.0217 - 0.0289 lb/in ³	ISO 60
Water Absorption	<= 0.200 % @Temperature 23.0 °C, Time 86400 sec	<= 0.200 % @Temperature 73.4 °F, Time 24.0 hour	ISO 62
Linear Mold Shrinkage, Flow	0.00300 - 0.00500 cm/cm	0.00300 - 0.00500 in/in	Injection and Compression; ISO 2577

Mechanical Properties	Metric	English	Comments
Tensile Strength	70.0 - 90.0 MPa	10200 - 13100 psi	Compression; ISO 527
	100 - 120 MPa	14500 - 17400 psi	Injection; ISO 527
Modulus of Elasticity	7.00 - 9.00 GPa	1020 - 1310 ksi	Injection and Compression; ISO 527
Flexural Strength	120 - 140 MPa	17400 - 20300 psi	Compression; ISO 178
	200 - 220 MPa	29000 - 31900 psi	Injection; ISO 178
Flexural Modulus	16.0 - 18.0 GPa	2320 - 2610 ksi	Compression; ISO 178
	18.0 - 22.0 GPa	2610 - 3190 ksi	Injection; ISO 178
Compressive Strength	250 - 300 MPa	36300 - 43500 psi	ISO 604
Charpy Impact Unnotched	0.600 - 0.800 J/cm ²	2.86 - 3.81 ft-lb/in ²	Compression; ISO 179/1eU
	1.00 - 1.20 J/cm ²	4.76 - 5.71 ft-lb/in ²	Injection; ISO 179/1eU
Charpy Impact, Notched	0.200 - 0.300 J/cm ²	0.952 - 1.43 ft-lb/in ²	Compression; ISO 179/1eA
	0.300 - 0.500 J/cm ²	1.43 - 2.38 ft-lb/in ²	Injection; ISO 179/1eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 - 20.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.33 - 11.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 50.0 - 150 $^\circ\text{C}$	@Temperature 122 - 302 $^\circ\text{F}$	
Thermal Conductivity	0.400 - 0.600 W/m-K	2.78 - 4.16 BTU-in/hr-ft ² - $^\circ\text{F}$	ASTM E1461
Maximum Service Temperature, Air	150 $^\circ\text{C}$	302 $^\circ\text{F}$	IEC 60216/T1
	@Time 7.20e+7 sec	@Time 20000 hour	
	230 $^\circ\text{C}$	446 $^\circ\text{F}$	IEC 60216/T1
	@Time <= 180000 sec	@Time <= 50.0 hour	
Deflection Temperature at 1.8 MPa (264 psi)	>= 200 $^\circ\text{C}$	>= 392 $^\circ\text{F}$	ISO 75-A
Deflection Temperature at 8.0 MPa	160 - 180 $^\circ\text{C}$	320 - 356 $^\circ\text{F}$	ISO 75-C
Flammability, UL94	V-0	V-0	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
Shrinkage	<= 0.0500 %	<= 0.0500 %	Post shrinkage; ISO 2577
	@Temperature 110 $^\circ\text{C}$, Time 605000 sec	@Temperature 230 $^\circ\text{F}$, Time 168 hour	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 - 1.00e+13 ohm-cm	1.00e+12 - 1.00e+13 ohm-cm	IEC 60093
Surface Resistance	1.00e+10 - 1.00e+11 ohm	1.00e+10 - 1.00e+11 ohm	IEC 60093
Dielectric Constant	4.00 - 6.00	4.00 - 6.00	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	6.00 - 8.00	6.00 - 8.00	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	20.0 - 30.0 kV/mm	508 - 762 kV/in	IEC 60243-1
Dissipation Factor	0.0200 - 0.0300	0.0200 - 0.0300	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.100 - 0.200	0.100 - 0.200	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	

Arc Resistance Electrical Properties	180 - 240 sec Metric	180 - 240 sec English	ASTM D495 Comments
Comparative Tracking Index	>= 175 V	>= 175 V	IEC 60112

Processing Properties	Metric	English	Comments
Shelf Life	12.0 Month @Temperature 20.0 - 30.0 °C	12.0 Month @Temperature 68.0 - 86.0 °F	

Descriptive Properties	Value	Comments
Glow wire flammability test	960/1	IEC 60695 2-12
Glow wire ignitability test	960/1	IEC 60695 2-13
Water Absorption	<20 mg	24 hr, 23°C; ISO 62

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