

PBI Performance Products Celazole® TF-60 V Glass Fiber Reinforced Melt Processable Polybenzimidazole

Category : Polymer , Thermoplastic , Polybenzimidazole (PBI)

Material Notes:

Celazole® polybenzimidazole (PBI) resin is a unique and highly stable linear hetrocyclic polymer. PBI is characterized by high strength; excellent thermal stability, and broad chemical resistance. Celazole® T-Series products combine the superior mechanical properties and thermal resistance of PBI with the melt process ability of polyaryletherketones. Designed for injection molding and extrusion TF-60V is a glass-reinforced blend offering thermal and electrical insulation, wear resistance and dimensional stability with the cost efficiency of a direct form process. An excellent choice for high temperature electrical insulators, plasma torch drag cup shields, swirl baffles and parts requiring minimal thermal expansion. Information provided by PBI Performance Products

Order this product through the following link:

http://www.lookpolymers.com/polymer_PBI-Performance-Products-Celazole-TF-60-V-Glass-Fiber-Reinforced-Melt-Processable-Polybenzimidazole.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.52 g/cc	1.52 g/cc	
Water Absorption	0.25 % @Temperature 22.8 °C, Time 86400 sec	0.25 % @Temperature 73.0 °F, Time 24.0 hour	ASTM D570
Moisture Absorption at Equilibrium	4.6 %	4.6 %	ASTM D570
Loss On Ignition	5.0 % @Temperature 607 °C	5.0 % @Temperature 1120 °F	Air; ASTM TGA
	5.0 % @Temperature 635 °C	5.0 % @Temperature 1180 °F	Nitrogen; ASTM TGA

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell A	30	30	ASTM D785
Tensile Strength	150 MPa	21800 psi	ASTM D638
Elongation at Break	1.4 %	1.4 %	
Tensile Modulus	12.0 GPa	1740 ksi	
Flexural Strength	225 MPa	32600 psi	ASTM D790
Flexural Modulus	12.5 GPa	1810 ksi	
Compressive Strength	220 MPa	31900 psi	ASTM D695
Compressive Modulus	3.60 GPa	522 ksi	

Mechanical Properties	Metric	English	Comments
Shear Modulus	4.48 GPa	650 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	17.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	9.44 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM TMA
	@Temperature 25.0 - 150 $^{\circ}\text{C}$	@Temperature 77.0 - 302 $^{\circ}\text{F}$	
Specific Heat Capacity	1.13 J/g $\cdot^{\circ}\text{C}$	0.270 BTU/lb $\cdot^{\circ}\text{F}$	ASTM D648
	@Temperature 70.0 $^{\circ}\text{C}$	@Temperature 158 $^{\circ}\text{F}$	
Thermal Conductivity	0.360 W/m-K	2.50 BTU-in/hr-ft $^2\cdot^{\circ}\text{F}$	ASTM F-433
	@Temperature 23.9 $^{\circ}\text{C}$	@Temperature 75.0 $^{\circ}\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	310 $^{\circ}\text{C}$	590 $^{\circ}\text{F}$	ASTM D648

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ASTM D257
Dielectric Constant	3.9	3.9	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	3.9	3.9	ASTM D150
	@Frequency 10000 Hz	@Frequency 10000 Hz	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 10000 Hz	@Frequency 10000 Hz	
Arc Resistance	180 sec	180 sec	ASTM D495

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