

PBI Performance Products Celazole® TF-60 C Carbon 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-60C is a carbon-reinforced blend, ideal for parts that require high strength, very low creep, and deflection resistance. A great match for planetary gears, office equipment, semiconductor, electronic and mechanical applications. Information provided by PBI Performance Products

Order this product through the following link:

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

Physical Properties	Metric	English	Comments
Specific Gravity	1.41 g/cc	1.41 g/cc	
Water Absorption	0.15 % @Temperature 22.8 °C, Time 86400 sec	0.15 % @Temperature 73.0 °F, Time 24.0 hour	ASTM D570
Moisture Absorption at Equilibrium	4.0 %	4.0 %	ASTM D570
Loss On Ignition	5.0 % @Temperature 599 °C	5.0 % @Temperature 1110 °F	Air; ASTM TGA
	5.0 % @Temperature 627 °C	5.0 % @Temperature 1160 °F	Nitrogen; ASTM TGA

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell A	30	30	ASTM D785
Tensile Strength	230 MPa	33400 psi	ASTM D638
Elongation at Break	1.4 %	1.4 %	
Tensile Modulus	24.0 GPa	3480 ksi	
Flexural Strength	320 MPa	46400 psi	ASTM D790
Flexural Modulus	21.0 GPa	3050 ksi	
Compressive Strength	220 MPa	31900 psi	ASTM D695
Compressive Modulus	3.80 GPa	551 ksi	
Poissons Ratio	0.39	0.39	

Mechanical Properties	Metric	English	Comments
Shear Modulus	8.63 GPa	1250 ksi	Calculated

Thermal Properties	Metric	English	Comments
CTE, linear	26.0 $\mu\text{m/m-}^{\circ}\text{C}$	14.4 $\mu\text{in/in-}^{\circ}\text{F}$	ASTM TMA
	@Temperature 25.0 - 150 $^{\circ}\text{C}$	@Temperature 77.0 - 302 $^{\circ}\text{F}$	
Specific Heat Capacity	1.17 J/g- $^{\circ}\text{C}$	0.280 BTU/lb- $^{\circ}\text{F}$	ASTM D648
	@Temperature 70.0 $^{\circ}\text{C}$	@Temperature 158 $^{\circ}\text{F}$	
Thermal Conductivity	0.447 W/m-K	3.10 BTU-in/hr-ft 2 - $^{\circ}\text{F}$	ASTM F-433
	@Temperature 23.9 $^{\circ}\text{C}$	@Temperature 75.0 $^{\circ}\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	320 $^{\circ}\text{C}$	608 $^{\circ}\text{F}$	ASTM D648

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