

Ensinger TECATOR™ TI 5013 Polyamide-imide (PAI)

Category : Polymer , Thermoplastic , Polyamide-imide (PAI)

Material Notes:

TECATOR™ is a high performance melt processable polyamideimide that maintains its excellent mechanical and wear properties in temperature environments exceeding 500°F. Stock shapes from Ensinger are available in three grades: TECATOR™ TI 5013, high strength structural grade featuring good electrical properties and strength, making it ideal for demanding applications at a broad range of temperatures. TECATOR™ TI 5031 offers high PV capabilities in bearing applications, primarily at high loads and low speeds. TECATOR™ GF30 (XP1424T) is a 30% glass filled grade, compression molded with superior stiffness and dimensional stability. It is available in a wide variety of custom tube, ring, rod and plate sizes. Excellent weather and gamma radiation resistance Outstanding bearing wear properties (at elevated temperatures, TECATOR™ TI 5031 offers superior wear rates) High strength and stiffness Excellent electrical values Good chemical resistance (TECATOR™ is not attacked by common solvents or fuels and is acceptable for use in contact with many acids) Maintains a high proportion of mechanical properties over a broad temperature spectrum - cryogenic to 500°F TECATOR™ TI 5013 and TI 5031 are available in a wide variety of metric sizes in rod and plate TECATOR™ (PAI) typical applications: Pump parts, valve seats, piston rings, seal rings, engine transmission parts and bearing cages. For the semiconductor industry it is used for "burn in" test sockets, nests, chassis and other applications such as welding nozzle tips. Information Provided by Ensinger Industries, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Ensinger-TECATOR-TI-5013-Polyamide-imide-PAI.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.41 g/cc	1.41 g/cc	ASTM D792
Water Absorption	0.30 %	0.30 %	ASTM D570
	@Temperature 22.8 °C, Time 86400 sec	@Temperature 73.0 °F, Time 24.0 hour	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	119	119	ASTM D785
Tensile Strength at Break	145 MPa	21000 psi	ASTM D638
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Elongation at Break	15 %	15 %	ASTM D638
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Flexural Strength	228 MPa	33000 psi	ASTM D790
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Flexural Modulus	4.90 GPa	711 ksi	ASTM D790
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Compressive Strength	207 MPa	30000 psi	1% offset; ASTM D695

Mechanical Properties	1.23 J/cm Metric	2.30 ft-lb/in English	Comments
	@Temperature 22.8 °C	@Temperature 73.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	29.9 µm/m-°C	16.6 µin/in-°F	ASTM D696
Maximum Service Temperature, Air	260 °C	500 °F	continuous
Deflection Temperature at 1.8 MPa (264 psi)	278 °C	532 °F	ASTM D648
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	5.00e+15 ohm	5.00e+15 ohm	ASTM D257
Dielectric Constant	3.2	3.2	ASTM D150
	@Frequency 2.00e+7 Hz	@Frequency 2.00e+7 Hz	
	3.7	3.7	
	@Frequency 3.00e+7 Hz	@Frequency 3.00e+7 Hz	ASTM D150
	3.9	3.9	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	23.6 kV/mm	600 kV/in	ASTM D149
Dissipation Factor	0.0050	0.0050	
	@Frequency 3.00e+7 Hz	@Frequency 3.00e+7 Hz	
	0.0090	0.0090	
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.0090	0.0090	
	@Frequency 2.00e+7 Hz	@Frequency 2.00e+7 Hz	

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