



# TECATOR™ (PAI)

TECATOR™ is a high performance melt processable polyamide-imide that maintains its excellent mechanical and wear properties in temperature environments exceeding 500°F. Stock shapes from Ensinger-Hyde are available in three grades: TECATOR™ TI5013

High strength structural grade featuring good electrical properties and strength, making it ideal for demanding applications at a broad range of temperatures.

TECATOR™ TI5031 offers high PV capabilities in bearing applications, primarily at high loads and low speeds.

TECATOR™ GF30 (XP142T) 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 and wear properties**  
At elevated temperatures, TECATOR™TI5031 offers superior wear rates.
- **High strength and stiffness**
- **Excellent electrical values**  
TECATOR™TI5013 has a dielectric strength of 600 V/mil.
- **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™ TI5013 and TI5031 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.*

# TYPICAL PROPERTY VALUES

PROPERTIES	ASTM Test Method	Units	TECATOR™ TI5013	TECATOR™ TI5031	TECATOR™ GF30 (XP142T)
Specific Gravity	D792	-	1.41	1.46	1.58
Water Absorption, @24 hours, 73°F	D570	%	0.3	-	-
Tensile Strength @ Break, 73°F	D638	psi	21,000	19,000	17,000
Elongation @ Break, 73°F	D638	% at break	15	10	2
Flexural Strength, 73°F	D790	psi	33,000	23,000	21,000
Flexural Modulus, 73°F	D790	psi	711,000	870,000	821,000
Compressive Strength (1% offset) Izod	D695	psi	30,000	-	-
Impact Strength, Notched, 73°F	D256	ft-lbs/in	2.3	2.0	.75
Rockwell Hardness, 73°F	D785	"M" Scale	M119	M109	M116
Heat Deflection Temperature, 264 psi	D648	°F	532	534	-
Coefficient of Linear Thermal Expansion	D696	in/in/F	1.66x10 <sup>-5</sup>	-	2.11x10 <sup>-5</sup>
Continuous Service Temperature, Air	-	°F	500	500	500
Flammability	UL94	VO	VO	VO	-
Dielectric Strength	D149	V/mil	600	-	450
Constant, 10 <sup>6</sup> hertz	D150	-	3.9	-	3.8
20 ghz	D150	-	3.2	3.8	4.3
30 ghz	D150	-	3.7	3.9	4.4
Surface Resistivity,	D257	ohms	5.0x10 <sup>15</sup>	-	-
Dissipation Factor, 10 <sup>6</sup> hz	D150	-	0.009	-	0.006
20 ghz	D150	-	0.009	0.012	0.005
30 ghz	D150	-	0.005	0.018	0.008

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## MATERIAL AVAILABILITY

**Rods:** Diameters: 5 mm to 10 mm

Length: 11.8" to 39.3" – 48.0"

**Plates:** 5.0 mm to 40.0 mm thickness inclusive are:

11.8" x 11.8"

11.8" x 39.3"

11.8" x 48.0"

**Primary Specification (Resin) (Typical)**

*Profiles, tubes, and special sizes are custom-produced on request.*



