



TECAPET™ PET

PET (Polyethylene Terephthalate)

TECAPET™PET is an unreinforced, semi-crystalline thermoplastic polyester derived from polyethylene terephthalate. Its excellent wear

resistance, low coefficient of friction, high flexural modulus, and superior dimensional stability make it a versatile material for designing mechanical

and electro-mechanical parts. Because TECAPET™PET has no centerline porosity, the possibility of fluid absorption and leakage is virtually eliminated.

- **Excellent wear resistance**
- **Low coefficient of friction**
- **Very good chemical resistance**
- **No centerline porosity eliminates the possibility of fluid absorption and leakage**
- **Good electrical insulator**
- **High mechanical strength**
- **Excellent hardness and stiffness**
- **Good weather resistance**
- **In compliance with FDA regulations 21 CFR 177.1630 for use in contact with food**
- **Low water absorption**
- **Good resistance to high-energy radiation**

TECAPET™ PET superior wear resistance and lack of centerline porosity give it an advantage over other materials for applications involving solvents, chemicals, and food products. TECAPET™ PET is also used in water purification systems, printing equipment, textile components, food-handling equipment, and valves.

TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	TECAPET™ PET
PHYSICAL	Density	D792	lbs/in ³	0.0499
	Specific Gravity	D792	g/cc	1.38
	Water Absorption, @24 hours, 73°F	D570	%	0.10
	@Saturation, 73°F	D570	%	0.50
MECHANICAL	Tensile Strength @ Yield, 73°F	D638	psi	12,500
	Tensile Modulus	D639	psi	470,000
	Elongation @ Break, 73°F	D638	%	20
	Flexural Strength, 73°F	D790	psi	17,600
	Flexural Modulus, 73°F	D790	psi	430,000
	Compressive Strength	D695	psi	-
	Izod Impact Strength, 73°F	D256	ft-lbs/in	0.70
	Rockwell Hardness, 73°F	D785	M Scale	94
	Shure Hardness	-	D Scale	-
	Wear Factor Against Steel, 40 psi, 50 fpm	D3702	in ³ x $\frac{1}{hr}$	210 x 10 ⁻¹⁰
	-	-	PV	-
	Static Coefficient of Friction	D3702	-	0.19
	Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702	-	0.25
THERMAL	Heat Deflection Temperature @ 66 psi	D648	°F	240
	@264 psi	D648	°F	175
	Coefficient of Linear Thermal Expansion	D696	in/in/°F	3.9 x 10 ⁻⁵
	Maximum Servicing Temperature, Intermittent	-	°F	320
	Long Term	-	°F	230
	Specific Heat	UL746B	BTU/lb-°F	0.28
	Thermal Conductivity	-	-	2.01
	Vicat Softening Point	-	°F	-
	Melting Point	D3418	°F	490
	Flammability	UL94	-	HB
ELECTRICAL	Surface Resistivity	D257	ohm/square	-
	Volume Resistivity	D257	ohm-cm	10 ¹⁵
	Dielectric Strength	D149	V/mil	400
	Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150	-	3.4
	@ 1 MHz	D150	-	-
	@ 20 GHz	D150	-	-
	@ 30 GHz	D150	-	-
	Dissipation Factor, @ 60 HZ, 73°F	D150	-	0.002

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MATERIAL AVAILABILITY

Rods: Diameters: 3/16" to 4 3/4" diameter – 10' length **Plates:** 1/4" to 4" thickness inclusive are 2' x 4' 5" and greater diameter – 5' length

Primary Specification (Resin) (Typical)

ASTM-D-5927 TPES0211

Shapes Specification (Typical)

ASTM-D-6261 S-TPES0211

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



ENSINGER-HYDE

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