



# ENSITEP®

## PET (Polyethylene Terephthalate)

ENSITEP® 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 ENSITEP® 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 CFR 177.1630 for use in contact with food**
- **Low water absorption**
- **Good resistance to high-energy radiation**

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

# TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	Ensitemp®
<b>PHYSICAL</b>	Density	D792	lbs/in <sup>3</sup>	0.0499
	Specific Gravity	D792	g/cc	1.38
	Water Absorption, @24 hours, 73°F	D570	%	0.10
	@Saturation, 73°F	D570	%	0.50
<b>MECHANICAL</b>	Tensile Strength @ Yield, 73°F	D638	psi	11,500
	Tensile Modulus	D639	psi	400,000
	Elongation @ Break, 73°F	D638	%	15
	Flexural Strength, 73°F	D790	psi	15,800
	Flexural Modulus, 73°F	D790	psi	411,000
	Compressive Strength	D695	psi	-
	Izod Impact Strength, 73°F	D256	ft-lbs/in	.60
	Rockwell Hardness, 73°F	D785	R Scale	114
	Shure Hardness	-	D Scale	-
	Wear Factor Against Steel, 40 psi, 50 fpm	D3702	in <sup>3</sup> x $\frac{1}{hr}$ x $\frac{1}{PV}$	210 x 10 <sup>-10</sup>
	Static Coefficient of Friction	D3702	-	0.19
	Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702	-	0.25
	<b>THERMAL</b>	Heat Deflection Temperature @ 66 psi	D648	°F
@264 psi		D648	°F	175
Coefficient of Linear Thermal Expansion		D696	in/in/°F	3.9 x 10 <sup>-5</sup>
Maximum Servicing Temperature, Intermittent		-	°F	320
Long Term		-	°F	230
Specific Heat		UL746B	BTU/lb-°F	0.28
Thermal Conductivity		-	-	2.01
Vicite Softening Point		-	°F	-
Melting Point		D2133	°F	490
Flammability		UL94	-	HB
<b>ELECTRICAL</b>	Surface Resistivity	D257	ohm/square	-
	Volume Resistivity	D257	ohm-cm	10 <sup>15</sup>
	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

This information is only to assist and advise you on current technical knowledge and is given without obligation or liability. All trade and patent rights should be observed. All rights reserved. Data obtained from extruded shapes material.

## MATERIAL AVAILABILITY

**Rods:** Diameters: 3/16" to 4 3/4" diameter, 10' length      **Plates:** 1/4" to 4" thickness inclusive are 2' x 4'  
Length: 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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