Plastifab

PET

PET

PET (Polyethylene Terephthalate)

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 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**

PET superior wear resistance and lack of centerline porosity give it an advantage over other materials for applications involving solvents, chemicals, and food products. 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	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	11,500
	Tensile Modulus	D639	psi	470,000
	Elongation @ Break, 73°F	D638	%	45
	Flexural Strength, 73°F	D790	psi	16,000
	Flexural Modulus, 73°F	D790	psi	430,000
	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	$\frac{in^3}{hr} \times \frac{1}{PV}$	210×10^{-10}
		-		-
	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	3.9×10^{-5}
	Maximum Servicing Temperature, Intermittent	-	°F	320
	Long Term	-	°F	230
	Specific Heat	UL746B	BTU/lb-°F	0.28
	Thermal Conductivity	-	-	2.01
	Vicate Softening Point	-	°F	-
	Melting Point	D2133	°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

MATERIAL AVAILABILITY

Rods: Diameters: 3/16" to 4 3/4" diameter – 10' length
5" and greater diameter – 5' length

Plates: 1/4" to 4" thickness inclusive are 2' x 4'

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.

MEMBER
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