

PET

PET, also known as Polyethylene Terephthalate, is a semi-crystalline thermoplastic polyester with excellent wear resistance, a low coefficient of friction, a high flexural modulus, and superior dimensional stability. It is a very versatile option for mechanical and electro-mechanical parts.

Applications

PET is desirable in industries such as food processing, the pharmaceutical industry, packaging and paper machinery, semiconductor technology, and the electrical industry. Some common applications include products involving solvents, chemicals, and food products. Other applications include water purification systems, printing equipment, textile components, food-handling equipment, and valves.

Key Product Benefits

- High Mechanical Strength
- Wear Resistance
- Chemical Resistance
- Low Coefficient of Friction
- Low Moisture Absorption

Properties

Property	Test Method	Value
Density	ASTM D792	1.38-1.41 g/cm ³
Water Absorption @ 24 hours	ASTM D570	0.04-0.07%
Water Absorption @ Saturation	ASTM D570	0.5-0.9%
Dissipation Factor @ 1 MHz	ASTM D150	0.02
Shore Hardness (D Scale)	ASTM D2240	80-87
Tensile Strength @ Yield	ASTM D638	10,000-12,000 psi
Tensile Modulus	ASTM D638	460,000-470,000 psi
Elongation @ Yield	ASTM D638	4%
Elongation @ Break	ASTM D638	>12%
Flexural Strength	ASTM D790	15,500-18,000 psi
Flexural Modulus	ASTM D790	470,000-490,000 psi
Compressive Strength	ASTM D695	14,000-15,000 psi

Property (Continued)	Test Method (Continued)	Value (Continued)
Rockwell Hardness (M Scale)	ASTM D785	93-101
Rockwell Hardness (R Scale)	ASTM D785	125
Shear Strength	ASTM D732	8,000 psi
Izod Impact, Notched	ASTM D256	0.50-0.53 ft-lb/in
Dynamic Coefficient of Friction		0.20-0.25
Thermal Conductivity		1.80-2.01 BTU-in/hr/ft ² /°F
Coefficient of Linear Thermal Expansion	ASTM D696	3.3-3.9 in/in/°F x 10 ⁻⁵
Melting Point	ASTM D789	490-491°F
Continuous Service Temperature, Air		210-230°F
Heat Deflection Temperature @ 264 psi	ASTM D648	220-240°F
Flammability	UL 94	HB
Dielectric Constant @ 1 MHz	ASTM D150	3.1-3.4
Dielectric Strength	ASTM D149	385-400 V/mil
Surface Resistivity	ASTM D257	>10 ¹³ ohm/cm