

Polyethylene Terephthalate (PET-P)

KEY FEATURES

- Excellent Wear Resistance
- No Centerline Porosity Eliminates the Possibility of Fluid Absorption and Leakage
- Low Coefficient of Friction
- Very Good Chemical Resistance
- Good Weather Resistance
- Good Electrical Insulator
- Low Water Absorption
- High Mechanical Strength
- Good Resistance to High-Energy Radiation
- Excellent Hardness and Stiffness

DESCRIPTION

Polyethylene Terephthalate (PET) is an unreinforced, semi-crystalline thermoplastic polyester. 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.

TYPICAL PROPERTY VALUES

Physical	Properties	Condition	Units	Value	ASTM Test
	Density		g/cm ³	1.38	D792
	Chemical Designation			PET	
	Filler				

Mechanical	Properties	Condition	Units	Value	ASTM Test
	Tensile Modulus	@ 73 °F	PSI	470,000	D638
	Tensile Strength	@ 73 °F	PSI	12,400	D638
	Shear Strength	@ 73 °F	PSI	8,000	D732
	Elongation @ Yld	@ 73 °F	%	5	D638
	Elongation @ Brk	@ 73 °F	%	20	D638
	Flexural Modulus	@ 73 °F	PSI	430,000	D790
	Flexural Strength	@ 73 °F	PSI	17,600	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F, 10% strain	PSI	15,250	D695
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	0.7	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale	94	D785
	Coefficient of Friction	Static		0.19	D3702
	Coefficient of Friction	Dynamic, 40PSI, 50 FPM		0.25	D3702
	Wear (K) Factor		in ³ -min/ft-lbs-hr	210*10 ⁻¹⁰	D3702
Limiting PV		psi-fpm			

Thermal	Properties	Condition	Units	Value	ASTM Test
	Heat Deflection Temperature	@ 66 PSI	°F	240	D648
	Service Temperature	Long Term	°F	230	D648
	Heat Deflection Temperature	@ 264 PSI	°F	175	
	Service Temperature	Intermittent	°F	320	
	Thermal Expansion (CLTE)		in/in/°F	3.9*10 ⁻⁵	D696
	Specific Heat		BTU/lb-°F	0.28	UL746B
	Thermal Conductivity		BTU-in/hr-ft ² -°F	2.01	

Electrical	Properties	Condition	Units	Value	ASTM Test
	Surface Resistivity		ohms/square		
	Volume Resistivity		ohm-cm	10 ¹⁵	D257
	Dielectric Constant	50% RH		3.4	D150
	Dielectric Strength		V/mil	400	D149
	Dissipation Factor	@ 60 Hz, 73 °F		0.002	D150

Other	Properties	Condition	Units	Value	ASTM Test
	Moisture Absorption	@ 24 hrs, 73 °F	%	0.1	D570
	Moisture Absorption	@ Saturation, 73 °F	%	0.5	D570
	Flammability	UL 94		HB	
	Food Grade			Y	
	Relative Cost			\$\$	

• The data stated above are typical values intended for reference and comparison purposes only.
• The data should not be used as a basis for design specifications or quality control.

• The information is provided as a guide to the best of our knowledge and given without obligation or liability.
• Testing under individual application circumstances is recommended