

POLYETHYLENE TEREPHALATE (PET-P)

KEY FEATURES

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

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

	Properties	Condition	Units	Value	ASTM Test
Physical	Chemical Designation			PET	
	Filler				
	Density		g/cm ³	1.38	D792
Mechanical	Tensile Modulus	@ 73 °F	PSI	470,000	D639
	Tensile Strength @ Yld	@ 73 °F	PSI	12,500	D638
	Tensile Strength @ Brk	@ 73 °F	PSI		
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Yld	@ 73 °F	%	5	D638
	Elongation @ Brk	@ 73 °F	%	20	D638
	Flexural Modulus	@ 73 °F	PSI	430,00	D790
	Flexural Strength	@ 73 °F	PSI	17,600	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F, 10% strain	PSI		
	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 /hr(l/PV)	210 x 10 ⁻¹⁰	D3702
Limiting PV		psi-fpm			

TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
Thermal	Vicat Softening Point		°F		
	Melting Temperature		°F	490	D3418
	Heat Deflection Temperature	@ 66	°F	240	D648
	Heat Deflection Temperature	@ 264	°F	175	D648
	Service Temperature	Intermittent	°F	320	
	Service Temperature	Long Term	°F	230	
	Thermal Expansion (CLTE)		in/in/°F	3.9*10 ⁻⁵	D696
	Specific Heat		BTU/lb-°F	0.28	UL746B
	Thermal Conductivity			2.01	
Electrical	Surface Resistivity		ohms/square		
	Volume Resistivity		ohm-cm	10 ¹⁵	D257
	Dielectric Strength		V/mil	400	D149
	Dielectric Constant	@ 60 Hz, 73 °F 50% RH		3.4	D150
	Dissipation Factor	@ 60 Hz, 73 °F		0.002	D150
Other	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.