

General Information

Chemical Designation: *PET (polyethylenetarapthalate) is an engineering thermoplastic polyester that provides excellent strength and stiffness. It has slightly higher chemical resistance than that of the acetal family of thermoplastics. It too is easily machined with conventional metal working equipment and can be held to very close tolerances with experience. Both sheet and rod are available in many thicknesses and diameters. Rod stock comes ground to diameter to accommodate through spindle turning. Standard colors are black and (opaque) milk white, while custom colors are available as custom runs.*

POM (Polyoxymethylene)

Fillers:

Unfilled *PET (Thermoplastic Polyester) is non hygroscopic and is FDA compliant. It absorbs minimal amounts of moisture and can be cleaned easily. As a result, it finds applications in high moisture, food handling, medical and marine components.*

Color:

White, Opaque *Although it has many benefits as an unfilled material, PET can be filled with solid lubricants to enhance its bearing and wear properties. Materials such as PTFE Teflon and is available in some standard sizes.*

Specific Gravity:

1.41

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.41	-
Tensile Strength @ Yield, 73°F	D638	12,400	psi
Tensile Modulus of Elasticity, 73°F	D638	460,000	psi
Tensile Elongation (at break), 73°F	D638	20	%
Flexural Strength, 73°F	D790	18,000	psi
Flexural Modulus of Elasticity	D790	490,000	psi
Shear Strength, 73°F	D732	8,000	psi
Compressive Strength – Ultimate		10,000	psi
Compressive Strength at 2% Deformation	D695	12,000	psi
Compressive Strength at 10% Deformation	D695	15,000	psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695	420,000	
Compressive Strength to Laminate (Modulus)			psi
Compressive Strength to Laminate (Yield)		10,000	psi
Compressive Strength to Laminate (Ultimate)		10,000	psi
Hardness, Durometer (Shore "D" scale)	D2240	D87	
Hardness, Rockwell (Scale as noted)	D785	M93(R125)	Rockwell M
Izod Impact, Notched @ 73°F	D256 Type A	0.5	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM 55007	0.25	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM 55007	0.20	
Maximum Static Bearing Load (P)	PTM 55007	10,000	psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM 55007	15	ft/minute
Maximum Limiting PV (Unlubricated)	PTM 55007	2,800	psi x ft/min.
Wear Factor "K" x 10-10	PTM 55010	60	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test		50	UHMW=100
Minimum Mating Surface Hardness		20	Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831 (TMA)	3.3	in/in°F x 10-5
Coefficient of Thermal Expansion // to Laminates	E-831 (TMA)	3.3	in/in°F x 10-5
Coefficient of Thermal Expansion I to Laminates	E-831 (TMA)	3.3	in/in°F x 10-5
Softening Point		240	°F
Heat Deflection Temperature 264 psi	D648	240	°F
Embrittlement Temperature			°F Min.
Continuous Service Temperature in Air		210	°F Max.
Short Term Service Temperature		210	°F Max.
Tg-Glass Transition (Amorphous)	D3418		°F
Melting Point (Crystalline) Peak	D3418	491	°F
Thermal Conductivity	F433	2.0	BTU-in/(hr/ft2°F)
Dielectric Strength Short Term	D149	385	Volts/mil
Volume Resistivity	D257	>1013	ohm/cm
Surface Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150	3.4	
Dissipation Factor, 106 Hz	D150	.02	
Flammability @ 3.1mm(1/8 in.) UL94	UL94	HB	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	0.07	%
Water Absorption, Immersion Saturation	D570 (2)	0.9	%
Machinability Rating		1	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)	.250	6.0	inches
Sheet Thickness Availability (Off the Shelf)	.250	3.0	inches
Characteristics / Attributes	Chemical Resistance / Self Lubricating / Easily Machined		

Thank you for your interest in our materials. All statements, technical information and recommendations presented are in good faith, based upon tests believed to be reliable and practical field experience. Poly-Tech is not responsible for its accuracy or completeness. It is our recommendation and the customer's responsibility to determine the suitability of any material for any given application.