

General Information

Chemical Designation: *Acetal (Copolymer) is an engineering thermoplastic polymer that provides good strength and stiffness. It is easily machined with conventional metal working equipment and can be machined to very close tolerances. 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: *Also, copolymer acetals offer little or no centerline/core porosity making it the preferred acetal for food contact or medical applications.*

Unfilled

Color: *Acetal (Copolymer) is non hygroscopic and is normally FDA, USDA, Canada AG and 3A-Dairy compliant in both black and white colors. 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.*

White (Opaque) or Black

Specific Gravity: *Although it has many benefits as an unfilled material, Acetal (Copolymer) can be filled with solid lubricants to enhance its bearing and wear properties. Materials such as PTFE Teflon®, MoS2, Graphite and oil are all available in standard sizes.*

1.41

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.41	-
Tensile Strength @ Yield, 73°F	D638	9,500	psi
Tensile Modulus of Elasticity, 73°F	D638	400,000	psi
Tensile Elongation (at break), 73°F	D638	30	%
Flexural Strength, 73°F	D790	12,000	psi
Flexural Modulus of Elasticity	D790	400,000	psi
Shear Strength, 73°F	D732	8,000	psi
Compressive Strength – Ultimate		1,000	psi
Compressive Strength at 2% Deformation	D695	1,000	psi
Compressive Strength at 10% Deformation	D695	15,000	psi
Deformation Under Load		2	%
Compressive Modulus of Elasticity, 73°F	D695	400,000	
Compressive Strength \perp to Laminate (Modulus)		1,000	psi
Compressive Strength \perp to Laminate (Yield)		1,000	psi
Compressive Strength \perp to Laminate (Ultimate)		1,000	psi
Hardness, Durometer (Shore "D" scale)	D2240	D85	
Hardness, Rockwell (Scale as noted)	D785	120	Rockwell R
Izod Impact, Notched @ 73°F	D256 Type A	1.0	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM 55007	0.30	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM 55007	0.25	
Maximum Static Bearing Load (P)	PTM 55007	1,000	psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM 55007	15	ft/minute
Maximum Limiting PV (Unlubricated)	PTM 55007	2,700	psi x ft/min.
Wear Factor "K" x 10 ⁻¹⁰	PTM 55010	200	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test		60	UHMW=100
Minimum Mating Surface Hardness		20	Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831 (TMA)	5.4	in/in/°F x 10 ⁻⁵
Coefficient of Thermal Expansion // to Laminates	E-831 (TMA)	5.4	in/in/°F x 10 ⁻⁵
Coefficient of Thermal Expansion \perp to Laminates	E-831 (TMA)	5.4	in/in/°F x 10 ⁻⁵
Softening Point		220	°F
Heat Deflection Temperature 264 psi	D648	220	°F
Embrittlement Temperature			°F Min.
Continuous Service Temperature in Air		180	°F Max.
Short Term Service Temperature		212	°F Max.
Tg-Glass Transition (Amorphous)	D3418		°F
Melting Point (Crystalline) Peak	D3418	335	°F
Thermal Conductivity	F433	1.6	BTU-in/(hr/ft ² °F)
Dielectric Strength Short Term	D149	420	Volts/mil
Surface Resistivity	D257	>10 ¹³	ohm/cm
Volume Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150	3.8	
Dissipation Factor, 106 Hz	D150	0.005	
Flammability @ 3.1mm(1/8 in.) UL94	UL94	HB	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	0.2	%
Water Absorption, Immersion Saturation	D570 (2)	0.9	%
Machinability Rating		1	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)	.125	60	inches
Sheet Thickness Availability (Off the Shelf)	.030	3.0	inches
Characteristics / Attributes			Rigid / Stiff / Porosity Free / Excellent Machinability

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.