

General Information

Chemical Designation: Poly-Texx® HPVO is a new self-lubricating Bearing Grade Composite containing PTFE fibers as a solid lubricant and impregnated with a lubricating oil to reduce friction and stick-slip occurrences. Typical applications include sleeve and flanged bearings for railroad safety appliances and rail service vehicles.

Phenolic

Fillers: The high load capability and resistance to vibration allows HPVO serve the timber, construction and agricultural industries as kingpin, knuckle boom and center pivot bearings.

Teflon/PTFE

Color: Its main attribute is a PV rating of 40,000. Its compressive strength (P) exceeds 34,000 PSI, and is capable of a low-load velocity (V) of over 50 SFM (higher if lubricated). The combination of excellent bearing properties, self-lubrication and low cost makes Poly-Texx® HPVO the bearing material of choice for severe service applications that require extremely low COF values.

Black/Gray

Specific Gravity:

1.33

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.33	—
Tensile Strength @ Yield, 73°F	D638		psi
Tensile Modulus of Elasticity, 73°F	D638		psi
Tensile Elongation (at break), 73°F	D638		%
Flexural Strength, 73°F	D790	22,000	psi
Flexural Modulus of Elasticity	D790		psi
Shear Strength, 73°F	D732	11,000	psi
Compressive Strength – Ultimate		40,000	psi
Compressive Strength at 2% Deformation	D695	N/A	psi
Compressive Strength at 10% Deformation	D695	N/A	psi
Deformation Under Load		< 1.0	%
Compressive Modulus of Elasticity, 73°F	D695		
Compressive Strength \perp to Laminate (Modulus)			psi
Compressive Strength \perp to Laminate (Yield)		40,000	psi
Compressive Strength \perp to Laminate (Ultimate)		40,000	psi
Hardness, Durometer (Shore "D" scale)	D2240		
Hardness, Rockwell (Scale as noted)	D785	100	Rockwell M
Izod Impact, Notched @ 73°F	D256 Type A	2.3	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM 55007	0.1	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM 55007	0.05	
Maximum Static Bearing Load (P)	PTM 55007	34,000	psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM 55007	50	ft/minute
Maximum Limiting PV (Unlubricated)	PTM 55007	40,000	psi x ft/min.
Wear Factor "K" x 10-10	PTM 55010	3.9	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test		80	UHMW=100
Minimum Mating Surface Hardness			Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion (Tube Stock / Diametric) 1/8" wall / 1/4" wall	PTM	.3 / .8	in/in/°F x 10-5
Coefficient of Thermal Expansion (Sheet Stock) parallel to Laminates (Cross Directional Average)	PTM	1	in/in/°F x 10-5
Coefficient of Thermal Expansion (Sheet Stock) perpendicular to Laminates (Thickness)	PTM	3	in/in/°F x 10-5
Softening Point			°F
Heat Deflection Temperature 264 psi	D648		°F
Embrittlement Temperature		Cryogenic	°F Min.
Continuous Service Temperature in Air		275	°F Max.
Short Term Service Temperature		350	°F Max.
Tg-Glass Transition (Amorphous)	D3418		°F
Melting Point (Crystalline) Peak	D3418		°F
Thermal Conductivity	F433		BTU-in/(hr*ft2°F)
Dielectric Strength Short Term	D149	200	Volts/mil
Volume Resistivity	D257		ohm/cm
Surface Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150		
Dissipation Factor, 106 Hz	D150		
Flammability @ 3.1mm(1/8 in.) UL94	UL94		
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	0.5	%
Water Absorption, Immersion Saturation	D570 (2)	1.3	%
Machinability Rating		5	1=easy, 10=difficult
Tubing Diameter Availability (Made to Order)	.50	60	inches
Sheet Thickness Availability (Made to Order)	.030	6.0	inches
Characteristics / Attributes	High Load / Low Speed / Excellent Vibration Resistance / High PV Rating / Self Lubricating		

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.