Poly-Texx P40

Self-lubricating bearing material that is self-lubricating and an excellent choice for many low-load bearing applications.

General Information

Chemical Designation:

PTFE (Polytetrafluoroethylene)

Fillers:

Glass

Color:

White

Specific Gravity:

2.27

Poly-Texx P40 is a highly filled Glass Filled PTFE composite bearing material. It is self-lubricating and has very low friction. Typical applications include wheels, rotary thrust washers, bearings and slide plates on industrial machinery and conveying systems. Compatible for use against steel with hardness exceeding 35 Rockwell C or harder. Its main attributes are low friction, and 1,500 psi compressive load capacity. It has a total PV rating of 10,000, with a low-load velocity (V) of over 400 sfm. The combination of excellent bearing properties, self-lubrication and compression strength makes Poly-Texx P40 a great choice for many demanding bearing and wear applications.

P40 is gray / dark gray in color and is available in sheet, rod and tubing. Care should be taken during manufacturing to account for the abrasive nature of the material caused by the high concentration of glass.

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	2.27	–
Tensile Strength @ Yield, 73°F	D638	2,100	psi
Tensile Modulus of Elasticity, 73°F	D638	190,000	psi
Tensile Elongation (at break), 73°F	D638	150-200	%
Flexural Strength, 73°F	D790	1,950	psi
Flexural Modulus of Elasticity	D790		psi
Shear Strength, 73°F	D732	–	psi
Compressive Strength – Ultimate	(Bonded)	5,000	psi
Compressive Strength at 2% Deformation	D695	1,500	psi
Compressive Strength at 10% Deformation	D695		psi
Deformation Under Load		9.5	%
Compressive Modulus of Elasticity, 73°F	D695	110,000	psi
Compressive Strength ⊥ to Laminate (Modulus)		1,000	psi
Compressive Strength ⊥ to Laminate (Yield)		1,000	psi
Compressive Strength ⊥ to Laminate (Ultimate)		1,000	psi
Hardness, Durometer (Shore “D” scale)	D2240	57-60	
Hardness, Rockwell (Scale as noted)	D785	63-65	Rockwell D
Izod Impact, Notched @ 73°F	D256 Type A		ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM55007	0.2	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM55007	0.12	
Maximum Static Bearing Load (P)	PTM55007	1,500	psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM55007	400	ft/minute
Maximum Limiting PV (Unlubricated)	PTM55007	10,000	psi x ft/min.
Wear Factor “K” x 10-10	PTM55010	6	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test		60	UHMW=100
Minimum Mating Surface Hardness			Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831(TMA)	5.5	in/in/°F x 10-5
Coefficient of Thermal Expansion (Bearing Diameter)	E-831(TMA)	5.5	in/in/°F x 10-5
Coefficient of Thermal Expansion (Bearing Length	E-831(TMA)	6.2	in/in/°F x 10-5
Softening Point			°F
Heat Deflection Temperature 264 psi	D648	150	°F
Embrittlement Temperature		cryogenic	°F Min.
Continuous Service Temperature in Air		550	°F Max.
Short Term Service Temperature		550	°F Max.
Tg-Glass Transition (Amorphous)	D3418	636	°F
Melting Point (Crystalline) Peak	D3418	N/A	°F
Thermal Conductivity	F433	3.1	BTU-in/(hr/ft2°F)
Dielectric Strength Short Term	D149	–	Volts/mil
Volume Resistivity	D257		ohm/cm
Surface Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150	2.4	
Dissipation Factor, 106 Hz	D150	1.5	
Flammability @ 3.1mm(1/8 in.) UL94	UL94	V-0	
Arc Resistance	D257	>1015	ohm/square
Water Absorption, Immersion 24 Hours	D570 (2)	.02	%
Water Absorption, Immersion Saturation	D570 (2)	.02	%
Machinability Rating		2	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)		.50-3.0	inches
Sheet Thickness Availability (Off the Shelf)		.020-6.0	inches
Characteristics / Attributes	High PV/ Low Friction/ 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.