Poly-Texx 166 (Rulon LR Alternative)

Self-lubricating bearing material that is known for its capabilities in high temperature and corrosive applications.

General Information

Chemical Designation:

PTFE (Polytetrafluoroethylene)

Fillers:

Glass, Pigment

Color:

Maroon/Red, Opaque

Specific Gravity:

2.24-2.28

Poly-Texx 166 is a filled PTFE (polytetrafluoroethylene) products. It is a maroon in color, self-lubricating bearing material best known for its versatile design properties for use as electrical insulators and self-lubricating plane bearings in chemically aggressive applications. It can be used at temperatures up to 550 degrees F.

Besides being chemically inert, its main attributes are low friction, and 1,000 psi compressive strength. It has a total PV rating of 10,000, with a low-load velocity (V) of 400 sfm. The combination of excellent bearing properties, self-lubrication and compression strength makes Poly-Texx 166 a great choice for many demanding applications. Used in sleeve bearings, flanged bearings, and slide plate applications, Poly-Texx 166 is compatible with most hardened steel shafting and/or mating surfaces.

Available in rod stock, tubing, sheet and thin film stock. It is also available with ready to bond surface treatment upon request. Mild steel is acceptable although harder surfaces are better.

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	2.27	–
Tensile Strength @ Yield, 73°F	D638	1,500	psi
Tensile Modulus of Elasticity, 73°F	D638	200,000	psi
Tensile Elongation (at break), 73°F	D638	150	%
Flexural Strength, 73°F	D790	700	psi
Flexural Modulus of Elasticity	D790	110,000	psi
Shear Strength, 73°F	D732		psi
Compressive Strength – Ultimate		1,000	psi
Compressive Strength at 2% Deformation	D695	1,000	psi
Compressive Strength at 10% Deformation	D695		psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695		
Compressive Strength ⊥ to Laminate (Modulus)			psi
Compressive Strength ⊥ to Laminate (Yield)			psi
Compressive Strength ⊥ to Laminate (Ultimate)			psi
Hardness, Durometer (Shore “D” scale)	D2240	65	
Hardness, Rockwell (Scale as noted)	D785		Rockwell M
Izod Impact, Notched @ 73°F	D256 Type A	6.0	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM55007	0.15	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM55007	0.10	
Maximum Static Bearing Load (P)	PTM55007	1,000	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		Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test			UHMW=100
Minimum Mating Surface Hardness		C-35 (327)	Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831(TMA)	5.7	in/in/°F x 10-5
Coefficient of Thermal Expansion // to Laminates	E-831(TMA)		in/in/°F x 10-5
Coefficient of Thermal Expansion I to Laminates	E-831(TMA)		in/in/°F x 10-5
Softening Point			°F
Heat Deflection Temperature 264 psi	D648	240	°F
Embrittlement Temperature		-400	°F Min.
Continuous Service Temperature in Air		550	°F Max.
Short Term Service Temperature		550	°F Max.
Tg-Glass Transition (Amorphous)	D3418		°F
Melting Point (Crystaline Peak)	D3418		°F
Thermal Conductivity	F433		BTU-in/(hr/ft2°F)
Dielectric Strength Short Term	D149	400	Volts/mil
Volume Resistivity	D257	1×1015	ohm/cm
Surface Resistivity	D257	2×1013	ohm/cm
Dielectric Constant, 106 Hz	D150	2.5	
Dissipation Factor, 106 Hz	D150	0.003	
Flammability @ 3.1mm(1/8 in.) UL94	UL94	V-0	
Arc Resistance		180 to 240	seconds
Water Absorption, Immersion 24 Hours	D570 (2)	Nil	%
Water Absorption, Immersion Saturation	D570 (2)	Nil	%
Machinability Rating		3	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)		.250-4.750	inches
Sheet Thickness Availability (Off the Shelf)		.250-1.00	inches
Characteristics / Attributes	Low Coefficient of Friction / Self Lubricating / creep resistant		

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