

General Information

Chemical Designation:

PA 66 (Polyamide 66)

Fillers:

Aramide (Kevlar) Fibers

Color:

Gray

Specific Gravity:

1.16

Poly-Texx® MDS is a filled polyamide (Cast Nylon® Type 6) that is abrasive resistant, strong and self-lubricating. Its main attributes are impact strength and toughness. Its natural color is dark gray to black and is UV stable. Typical applications include sleeve and flanged bearings, thrust washers and wear plates for high aggregate bearing applications. Its machinability and toughness makes it well suited for bushings, bearings, sheaves and pulleys of all sizes.

Poly-Texx® MDS is available in many shapes and sizes; it is easily machined and can be sawed, milled and turned with conventional metal working equipment. Poly-Texx® MDS is a great choice for many demanding applications. See our Technical Assistance page on our website for additional materials and information.

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.16	-
Tensile Strength @ Yield, 73°F	D638	10,500	psi
Tensile Modulus of Elasticity, 73°F	D638	400,000	psi
Tensile Elongation (at break), 73°F	D638	30	%
Flexural Strength, 73°F	D790	16,000	psi
Flexural Modulus of Elasticity	D790	500,000	psi
Shear Strength, 73°F	D732	10,500	psi
Compressive Strength – Ultimate		300	psi
Compressive Strength at 2% Deformation	D695	500	psi
Compressive Strength at 10% Deformation	D695	10,000	psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695	400,000	
Compressive Strength \perp to Laminate (Modulus)		500,000	psi
Compressive Strength \perp to Laminate (Yield)		300	psi
Compressive Strength \perp to Laminate (Ultimate)			psi
Hardness, Durometer (Shore "D" scale)	D2240	D85	
Hardness, Rockwell (Scale as noted)	D785	R110	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	0.2	
Maximum Static Bearing Load (P)	PTM 55007	300	psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM 55007	15	ft/minute
Maximum Limiting PV (Unlubricated)	PTM 55007	3,000	psi x ft/min.
Wear Factor "K" x 10-10	PTM 55010	90	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test		80	UHMW=100
Minimum Mating Surface Hardness		20	Rockwell (Brinell)
Coefficient of Linear Thermal Expansion	E-831 (TMA)	3.5	in/in/°F x 10-5
Coefficient of Thermal Expansion // to Laminates	E-831 (TMA)	3.5	in/in/°F x 10-5
Coefficient of Thermal Expansion \perp to Laminates	E-831 (TMA)	3.5	in/in/°F x 10-5
Softening Point		200	°F
Heat Deflection Temperature 264 psi	D648	200	°F
Embrittlement Temperature		Cryogenic	°F Min.
Continuous Service Temperature in Air		200	°F Max.
Short Term Service Temperature		220	°F Max.
Tg-Glass Transition (Amorphous)	D3418		°F
Melting Point (Crystalline) Peak	D3418	420	°F
Thermal Conductivity	F433		BTU-in/(hr/ft ² F)
Dielectric Strength Short Term	D149	400	Volts/mil
Volume Resistivity	D257	>1013	ohm/cm
Surface Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150	3.7	
Dissipation Factor, 106 Hz	D150		
Flammability @ 3.1mm(1/8 in.) UL94	UL94	HB	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	0.3	%
Water Absorption, Immersion Saturation	D570 (2)	7	%
Machinability Rating		3	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)		.50-8.0	inches
Sheet Thickness Availability (Off the Shelf)		.030-3.0	inches
Characteristics / Attributes	Excellent Toughness / 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.