Nylon 6 MoS_2 (Cast, Polyamide MoS_2 Filled)

Tough, wear resistant, wear resistant, and stable engineering thermoplastic that is commonly used for wheels, rollers, cable pulleys and other wear applications

General Information

Chemical Designation:

PA (Polyamide)

Fillers:

MoS_2

Color:

Black

Specific Gravity:

1.16

Cast Nylon 6 with MsO2 as a solid lubricant filler that exhibits outstanding toughness, low coefficient of friction and good abrasion resistance making it an ideal replacement for a wide variety of materials from metal to rubber. Nylatron® GS reduces lubrication requirements, eliminates galling, corrosion and improves wear resistance. It has high impact strength as well as sound dampening characteristics. It is an excellent choice for wheels, rollers and cable pulleys.

MDS Cast Nylon is easily fabricated into precision parts using standard metalworking equipment. Tolerances of +/-.002 are easily achieved with experience. Broad size range availability and a variety of extruded and cast nylon grades are available to match specific application demands.

Technical Information

Specification	Test	Value	Units
Specific Gravity, 73°F	D792	1.16	–
Tensile Strength @ Yield, 73°F	D638	12,500	psi
Tensile Modulus of Elasticity, 73°F	D638	480,000	psi
Tensile Elongation (at break), 73°F	D638	25	%
Flexural Strength, 73°F	D790	17,000	psi
Flexural Modulus of Elasticity	D790	460,000	psi
Shear Strength, 73°F	D732	10,500	psi
Compressive Strength – Ultimate		300	psi
Compressive Strength at 2% Deformation		300	psi
Compressive Strength at 10% Deformation	D695	1,000	psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695	420,000	
Compressive Strength ⊥ to Laminate (Modulus)			psi
Compressive Strength ⊥ to Laminate (Yield)			psi
Compressive Strength ⊥ to Laminate (Ultimate)			psi
Hardness, Durometer (Shore “D” scale)	D2240	D85	
Hardness, Rockwell (Scale as noted)	D785	115	Rockwell R
Izod Impact, Notched @ 73°F	D256 Type “A”	.5	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static		.25	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM 55007	.20	
Maximum Static Bearing Load (P)		300	psi
Maximum Unlubricated No Load Bearing Velocity (V)		30	ft/minute
Maximum Limiting PV (Unlubricated)		5,000	psi x ft/min.
Wear Factor “K” x 10-10		90	Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test			UHMW=100
Minimum Mating Surface Hardness			Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831 (TMA)	4.0	in/in/°F x 10-5
Coefficient of Thermal Expansion // to Laminates		4.0	in/in/°F x 10-5
Coefficient of Thermal Expansion l to Laminates		4.0	in/in/°F x 10-5
Softening Point			°F
Heat Deflection Temperature 264 psi	D648	200	°F
Embrittlement Temperature			°F Min.
Continuous Service Temperature in Air		220	°F Max.
Short Term Service Temperature		260	°F Max.
Tg-Glass Transition (Amorphous)			°F
Melting Point (Crystaline) Peak	D3418	500	°F
Thermal Conductivity	F433	1.7	BTU-in/(hr/ft2°F)
Dielectric Strength Short Term	D149	350	Volts/mil
Volume Resistivity	D257	$>10^{13}$	ohm/cm
Surface Resistivity			ohm/cm
Dielectric Constant, 106 Hz			
Dissipation Factor, 106 Hz			
Flammability @ 3.1mm(1/8 in.) UL94	UL 94	V-2	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	.3	%
Water Absorption, Immersion Saturation	D570 (2)	7.0	%
Machinability Rating		3	1=easy, 10=difficult
Rod Diameter Availability (Off the Shelf)	1.0	6.0	inches
Sheet Thickness Availability (Off the Shelf)	.125	3.0	inches
Characteristics / Attributes	Excellent toughness / High strength and impact resistance / High moisture absorption		

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