



TECAMID MDS®

(Molybdenum Disulfide Filled Nylon)

Nylon is one of the most widely used and versatile thermoplastic resins. Its combination of physical properties versus its price makes it a favorite choice for numerous applications. Nylon has a consistent history of replacing other materials including: metal, brass, bronze, aluminum, and

rubber. In replacing metal gears in machinery, nylon can be advantageous because of its ability to reduce noise, use less lubrication and increase gear life.

TECAMID MDS® is an extruded "moly" filled nylon 6/6, which is gray in color. The addition of particles of

molybdenum disulfide enhances the surface lubricity and wear resistance over unfilled nylon.

In applications requiring high lubricity, this material may be a good candidate. In addition to the greater lubricity there are many additional property enhancements that occur.

- **Low surface friction**
- **Increased surface hardness**
- **Increased heat resistance**
- **Higher tensile properties**
- **Improved dimensional stability**

TECAMID MDS® has enhanced properties which make it an ideal material to replace metals in machinery. It can increase the life of many moving parts as well as provide a noise reduction benefit and requires less lubrication. A very stable compound with many industrial applications.

TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	Tecamid MDS®
PHYSICAL	Density	D792	lbs/in ³	0.0412
	Specific Gravity	D792	g/cc	1.14
	Water Absorption, @24 hours, 73°F	D570	%	1.2 - 2.5
	@Saturation, 73°F	D570	%	7.5 - 8.5
MECHANICAL	Tensile Strength @ Yield, 73°F	D638	psi	11,000
	Tensile Modulus	D639	psi	450,000
	Elongation @ Break, 73°F	D638	%	15
	Flexural Strength, 73°F	D790	psi	-
	Flexural Modulus, 73°F	D790	psi	-
	Compressive Strength	D695	psi	-
	Izod Impact Strength, 73°F	D256	ft-lbs/in	2.1
	Rockwell Hardness, 73°F	D785	M Scale	R 120
	Shure Hardness	-	D Scale	-
	Wear Factor Against Steel, 40 psi, 50 fpm	D3702	$\frac{\text{in}^3}{\text{hr}} \times \frac{1}{\text{PV}}$	1.9×10^{-8}
	Static Coefficient of Friction	D3702	-	-
Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702	-	-	
THERMAL	Heat Deflection Temperature @ 66 psi	D648	°F	470
	@264 psi	D648	°F	194
	Coefficient of Linear Thermal Expansion	D696	in/in/°F	4.0×10^{-5}
	Maximum Servicing Temperature, Intermittent	-	°F	355
	Long Term	UL746B	°F	230
	Specific Heat	-	BTU/lb-°F	0.4
	Thermal Conductivity	-	-	1.7
	Vicate Softening Point	-	°F	-
	Melting Point	D2133	°F	491
	Flammability	UL94	(mm)	HB
ELECTRICAL	Surface Resistivity	D257	ohm/square	-
	Volume Resistivity	D257	ohm-cm	10^{15}
	Dielectric Strength	D149	V/mil	30
	Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150	-	2.5
	@ 1 MHz	D150	-	-
	@ 20 GHz	D150	-	-
	@ 30 GHz	D150	-	-
	Dissipation Factor, @ 60 HZ, 73°F	D150	-	-

This information is only to assist and advise you on current technical knowledge and is given without obligation or liability. All trade and patent rights should be observed. All rights reserved. Data obtained from extruded shapes material.

MATERIAL AVAILABILITY

Rods: Diameters: 3/16" to 2"
Length: 10'

Plates: 1/32" to 3" thickness inclusive are 2' x 4'
3 3/4" to 4" thickness inclusive are 1' x 2'

Primary Specification (Resin) (Typical)

ASTM-D-4066 PA0110L2A00000

Shapes Specification (Typical)

ASTM-D-5989 S-PA0121

Profiles, tubes, and special sizes are custom-produced on request.



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