

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.

Primary Specification (Resin) (Typical)
ASTM-D-4066 PA0110L2A00000

Shapes Specification (Typical)
ASTM-D-5989 S-PA0121

Property	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 (R) Scale	R 120
Wear Factor Against Steel, 40 psi, 50 fpm	D3702	in ³ /hr x 1/PV	1.9 x 10 ⁻⁸
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 x 10 ⁻⁵
Maximum Servicing Temperature, Intermittent		°F	355
Long Term	UL746B	°F	230
Specific Heat		BTU/lb-°F	0.4
Thermal Conductivity			1.7
Melting Point	D2133	°F	491
Flammability	UL94		HB

Property	ASTM Test Method	Units	TECAMID MDS®
Electrical			
Volume Resistivity	D257	ohm-cm	10 ¹⁵
Dielectric Strength	D149	V/mil	30
Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150		2.5

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.