



**TECAMID™**

# TECAMID™

## (Nylon)

Nylon was the first engineering resin. It has been used in applications ranging from electronic, marine, and automotive industries to fibers used to make carpet.

Nylon has outstanding wear resistance and low frictional properties. It has very good temperature, chemical, and impact properties. However, nylon's one weakness is a propen-

sity to absorb moisture and thus have poor dimensional stability.

- **TECAMID™ 6/6**  
Type 6/6 general purpose standard grade nylon. Extruded in natural and black. (Weather Resistant Black Grade is also available as a custom.)
- **TECAMID™ 6/12**  
Type 6/12 nylon. This nylon has lower moisture absorption rates than nylon 6/6, hence superior dimensional stability.
- **TECAMID™ ST**  
Type 6/6 nylon. Super Tough nylon. Increased impact resistance and toughness over Tecamid™ 6/6.
- **TECAMID™ HS**  
Type 6/6 nylon. Heat Stabilized nylon. Increased ability to withstand the negative effects of heat exposure and increased overall service temperature over Tecamid™ 6/6.

***TECAMID™ has an excellent balance of properties which make it an ideal material for metal replacement in applications such as automotive parts, industrial valves, railway tie insulators, and other industry uses whose design requirements include high strength, toughness, and weight reduction.***

# TYPICAL PROPERTY VALUES

	PROPERTIES	ASTM Test Method	Units	TECAMID™ 6/6	TECAMID™ 6/12	TECAMID™ ST	TECAMID™ HS
<b>PHYSICAL</b>	Density	D792	lbs/in <sup>3</sup>	0.0412	0.0383	0.0390	0.0412
	Specific Gravity	D792	g/cc	1.14	1.06	1.08	1.14
	Water Absorption, @24 hours, 73°F	D570	%	1.2	0.25	1.2	-
	@Saturation, 73°F	D570	%	8.5	3.0	6.7	-
<b>MECHANICAL</b>	Tensile Strength @ Yield, 73°F	D638	psi	100,00	8,000	7,200	10,000
	Tensile Modulus	D639	psi	350,000	300,000	-	350,000
	Elongation @ Break, 73°F	D638	%	25	20	60	25
	Flexural Strength, 73°F	D790	psi	15,500	-	9,800	-
	Flexural Modulus, 73°F	D790	psi	440,000	275,000	245,000	440,000
	Compressive Strength	D695	psi	5,000	2,400	-	-
	Izod Impact Strength, 73°F	D256	ft-lbs/in	1.1	0.9	17.0	1.2
	Rockwell Hardness, 73°F	D785	M or R Scale	M-90	R-114	R-112	-
	Shore Hardness	-	D Scale	-	-	-	-
	Wear Factor Against Steel, 40 psi, 50 fpm	D3702	$\frac{\text{in}^3 \times 1}{\text{hr PV}}$	200 x 10 <sup>-10</sup>	190 x 10 <sup>-10</sup>	200 x 10 <sup>-10</sup>	-
	Static Coefficient of Friction	D3702	-	-	0.31	-	-
	Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702	-	0.26	-	0.28	-
	<b>THERMAL</b>	Heat Deflection Temperature @ 66 psi	D648	°F	455	-	421
@264 psi		D648	°F	194	142	160	194
Coefficient of Linear Thermal Expansion		D696	in/in/°F	4.5 x 10 <sup>-5</sup>	5 x 10 <sup>-5</sup>	6.7 x 10 <sup>-5</sup>	-
Maximum Servicing Temperature, Intermittent		-	°F	300	-	-	-
Long Term		UL746B	°F	185	-	-	-
Specific Heat		-	BTU/lb-°F	0.4	0.45	-	-
Thermal Conductivity		-	-	-	1.53	-	-
Vicat Softening Point		-	°F	-	-	-	-
Melting Point		D2133	°F	491	422	505	504
Flammability		UL94	(mm)	V-2 (3.0)	HB (0.86)	HB (0.81)	HB (0.75)
<b>ELECTRICAL</b>	Surface Resistivity	D257	ohm/square	-	-	-	-
	Volume Resistivity	D257	ohm-cm	10 <sup>15</sup>	10 <sup>15</sup>	-	-
	Dielectric Strength	D149	V/mil	300-400	-	-	-
	Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150	-	4	4	-	-
	@ 1 MHz	D150	-	3.6	3.5	-	-
	@ 20 GHz	D150	-	-	-	-	-
	@ 30 GHz	D150	-	-	-	-	-
	Dissipation Factor, @ 60 HZ, 73°F	D150	-	0.01	0.02	-	-

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### MATERIAL AVAILABILITY

**Rods:** Diameters: 3/16" to 4 3/4", 10' length  
Length: 5" and greater, 5' length

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

### Primary Specification (Resin) (Typical)

**TECAMID 6/6:** ASTM-D-4066 PA0114      **TECAMID ST:** ASTM-D-4066 PA0162  
**TECAMID 6/12:** ASTM-D-4066 PA0613      **TECAMID HS:** ASTM-D-4066 PA124B54380

### Shapes Specification (Typical)

ASTM-D-5989 S-PA0111      ASTM-D-5989 S-PA0000  
ASTM-D-5989 S-PA0511      ASTM-D-5989 S-PA0131

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



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