A GE TECHNICAL SOLUTIONS NETWORK Member

MODERN plastics

"Setting the Standards in Plastics Distribution"™

ISO 9001:2000 Certified

TECAMID®

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(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 propensity 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.)
- **Tecamid® 6/12**
  Type 6/12 nylon. This nylon has lower moisture absorpton 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
PHYSICAL	Density	D792	lbs/in^3	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	-
MECHANICAL	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	-
	Shure Hardness	-	D Scale	-	-	-	-
	Wear Factor Against Steel, 40 psi, 50 fpm	D3702	$\frac{in^3}{hr} \times \frac{1}{PV}$	200 x 10^{-10}	190 x 10^{0}	200 x 10^{-10}	-
	Static Coefficient of Friction	D3702	-	-	0.31	-	-
	Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702	-	0.26	-	0.28	-
THERMAL	Heat Deflection Temperature @ 66 psi	D648	°F	455	-	421	392
	@264 psi	D648	°F	194	142	160	194
	Coefficient of Linear Thermal Expansion	D696	in/in/°F	4.5 x 10^{-5}	5 x 10^{-5}	6.7 x 10^{-5}	-
	Maximum Servicing Temperature,Intermittent	-	°F	300	-	-	-
	Long Term	UL746B	°F	185	-	-	-
	Specific Heat	-	BTU/lb-°F	0.4	0.45	-	-
	Thermal Conductivity	-	-	-	1.53	-	-
	Vicate 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)
ELECTRICAL	Surface Resistivity	D257	ohm/square	-	-	-	-
	Volume Resistivity	D257	ohm-cm	10^{15}	10^{15}	-	-
	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	-	-

MATERIAL AVAILABILITY

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

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)

Tecamid 6/6: ASTM-D-4066 PA0111 **Tecamid ST:** ASTM-D-4066 PA0162
Tecamid 6/12: ASTM-D-4066 PA0613 **Tecamid HS:** ASTM-D-4066 PA124B543A

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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