



NYLON ~ NYLATRON

Characteristics

- * Broad Range of Size Availability
- * Good Electrical Insulative Properties
- * Ideal Balance of Strength and Toughness
- * High Wear and Abrasion Resistance
- * Low Coefficient of Friction
- * Many Grade Options - FDA Compliant, Internally Lubricated, Heat Stabilized

Description

Nylon's toughness, low coefficient of friction and abrasion resistance make it an ideal replacement for a wide variety of materials from metal to rubber. It weighs 1/7th as much as bronze. Using nylon reduces lubrication requirements, eliminates galling, and improves wear resistance and sound dampening characteristics. Nylon has a proven record of outstanding service in a multitude of parts for such diverse fields as paper, textiles, electronics, construction, mining, aircraft, food, and material handling.

Nylon is easily fabricated into precision parts using standard metalworking equipment. Its good property profile combined with a broad size range availability have made the material very popular since first introduced in 1946.

Forms Available

ROD .062 to 8.00 " diameter, Lengths to 12 feet
 BUSHING id's 1.00" and over, od's up to 80"
 PLATE .125" to 4.000" thick, Widths to 48", Lengths to 10 feet
 COIL .010 to .125, Widths .250 to 24"

Typical Property Values

MECHANICAL @ 73°F

		NYLON 6/6	NYLATRON® GS	NYLATRON® GSM	NYLATRON® NSM
Specific Gravity		1.15	1.16	1.16	1.15
Tensile Strength	psi	12,000	12,500	11,000	11,000
Tensile Modulus of Elasticity	psi	425,000	480,000	400,000	410,000
Tensile Elongation (at Break)	%	50	25	30	20
Flexural Strength	psi	15,000	17,000	16,000	16,000
Flexural Modulus of Elasticity	psi	450,000	460,000	500,000	475,000
Shear Strength	psi	10,000	10,500	10,500	10,000
Compressive Strength, 10% Deformation	psi	12,500	16,000	14,000	14,000
Compressive Modulus of Elasticity	psi	420,000	420,000	400,000	400,000
Rockwell Hardness	M Scale	85	85	80	80
Izod Impact Strength, Notched	ft-lbs/in. of notch	0.60	0.50	0.50	0.50
Coefficient of Friction, Dynamic (Dry vs. Steel)		0.25	0.20	0.20	0.18
Limiting PV (4 :1 Safety Factor Applied)	ft.lbs/in. ² min	2,700	3,000	3,000	15,000
Wear Factor	in ³ -min/ft.lbs. hr.	80	90	90	12
Water Absorption 24 hrs	% by wt.	0.30	0.30	0.60	0.30

THERMAL

Coefficient of Linear Expansion (-40°F to 300°F)	in./in./°F	5.5 x 10 ⁻⁵	4 x 10 ⁻⁵	5 x 10 ⁻⁵	5.5 x 10 ⁻⁵
Heat Deflection Temperature @264 psi	°F	200	200	200	200
Melting Point (Crystalline)	°F	500	500	420	420
Continuous Service Temperature in Air	°F	210	220	200	200
Thermal Conductivity	°F	1.70	1.70		

ELECTRICAL

Dielectric Strength, Short Term	Volts/mil	400	350	400	400
Surface Resistivity	Ohms/Sq.	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³
Dielectric Constant	1 MHz	3.60		3.70	
Dissipation Factor	1 MHz	0.020			

(Properties listed above are provided for reference only, they should not be used for design specifications or quality control , Nylatron is a registered Trademark of Quadrant EPP)