

CAST NYLONS LIMITED

Discover the NYCAST® Advantage

NYCAST® NYLOIL® NYCAST® NYLOIL® FG

Only NYLOIL from Cast Nylons Limited offers various grades of self-lubricating nylon bearing material tailored to meet your specific application. A cast nylon built-in oil lubrication, NYLOIL provides superior machinability, performance, and durability compared to other plastic and traditional bearing materials. These grades of NYLOIL are available to fit the most demanding applications: original green NYLOIL for most bearing applications; food grade, Natural NYLOIL-FG for direct contact with food.

The incorporation of an oil lubricant package into the nylon matrix provides significant advantages over other bearing materials:

Lubrication results in 25% lower coefficient of friction than other grades of nylon. It performs in harsh environments where lubrication is difficult, impossible or not desirable (food contact):

- Works successfully in marine applications
- Reduced water absorption promotes higher dimensional stability
- Works and machines as easily as brass
- Oil will not spin out, dry out, or drain out, even under the harshest operating conditions
- During NYLOIL's manufacturing process, an oil lubricant package is completely dispersed within the cast nylon matrix, making it an integral part of the casting's structure



*NYLOIL-FG is a self lubricating nylon bearing material which meets the provision of FDA Regulations 21 CFR, Section 177.15 (and others) and USDA 3A Sanitary Standards 20-17 for direct contact with food. This is a particularly useful material where additional lubrication is not desirable because of clean ability, contamination, or other considerations.

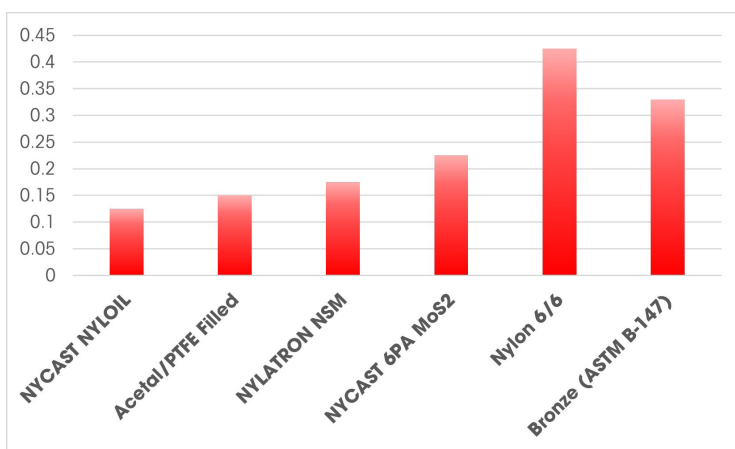
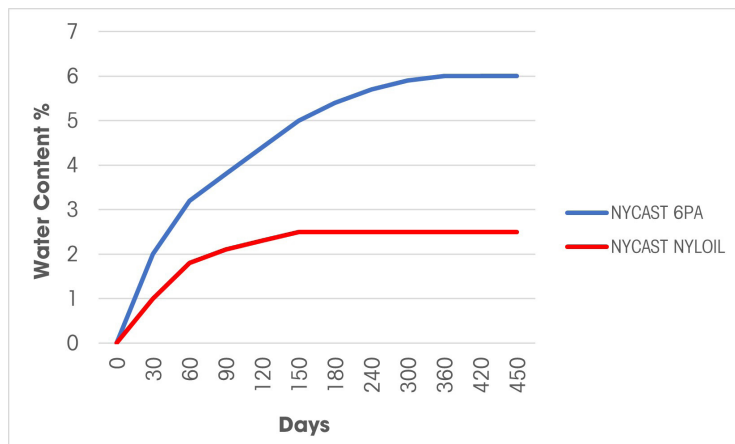


Chart 1: Comparison coefficient of friction on different materials, measured on a thrust washer testing machine, unlubricated at 40 fpm and 50 lb/in²

Dimensional Stability

With their higher crystallinity, all NYCAST products exhibit improved dimensional stability compared to their extruded nylon counterparts. NYLOIL provides even better dimensional stability than regular grades of cast nylon - its oil droplets fill gaps in the amorphous structure of the polymer, allowing less room for water to be absorbed into these areas. The moisture absorption graph shows that despite a slow absorption rate, NYLOIL stabilizes at approximately 2.5% moisture content - less than half the moisture content of other unfilled nylons.



NYCAST® NYLOIL®, NYCAST® NYLOIL® FG Product Specifications

Property	Units	ASTM Test Method	NYCAST® NYLOIL® NYCAST® NYLOIL® FG
Specific Gravity	g/cm ³	D 792	1.14 - 1.15
Tensile Strength	psi	D 638	9,500 - 11,000
Tensile Elongation	%	D 638	35 - 55
Tensile Modulus	psi	D 638	375,000 - 475,000
Compressive Strength	psi	D 695	13,500 - 15,000
Compressive Modulus	psi	D 695	325,000 - 375,000
Flexural Strength	psi	D 790	14,000 - 16,000
Flexural Modulus	psi	D 790	375,000 - 475,000
Shear Strength	psi	D 732	8,000 - 9,000
Notched Izod Impact	ft.lbs/in.	D 256	1.4 - 1.8
Hardness Rockwell	R	D 785	110 - 115
Hardness, Shore	D	D 2240	74 - 80
Limiting Pressure Velocity	psi-ft/min	-	16,000
Melting Point	°F	D 3418	430 +/- 10
Coefficient of Linear Thermal Expansion	in./in./°F	D 696	5.0 * 10 ⁻⁵
Deformation Under Load	%	D 621	0.7 - 3.0
Deflection Temperature			
264 psi	°F	D 648	200 - 300
66 psi	°F	D 648	300 - 400
Continuous Service Temperature	°F	-	230
Intermittent Service Temperature	°F	-	330
Coefficient of Friction, Dynamic		D 1894	0.12
Water Absorption			
24 hours	%	D 570	0.4 - 0.6
Saturation	%	D 570	4.0 - 5.0
Dielectric Strength	v/mil.	D 149	500 - 600
Dielectric Constant			
60 Hz		D 150	3.7
1000 Hz		D 150	3.7
1 MHz		D 150	3.7



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The facts stated and recommendations contained herein are based on experiments and information to be reliable. No guarantee is made of the accuracy, however, and the products are sold without warranty, expressed or implied, and upon the conditions that purchasers shall conduct tests to determine suitability for their intended use.

