



Discover the NYCAST® Advantage

Stock Shapes & Custom Cast Products



Premium Grades

Oil-Filled & Solid Lubricant-Filled Bearing Grades



NYCAST® NYLOIL®

NYCAST NYLOIL nylon was the very first oil-filled cast nylon, introduced to North America 35 years ago. Often copied, never equaled, CNL's NYLOIL is carefully dispersed with an oil-based lubricant during the manufacturing process. The result is a highly crystalline, internally lubricated, high-strength polymer with enhanced wear and reduced friction properties. NYLOIL is green in color, but also available in natural FG, blue, black, orange, MDX gray and blue, yellow, and red.

NYLOIL is offered in grades tailored to specific applications:

■ NYLOIL® FG

(Natural) - Specified for direct contact with food- FDA and USDA 3A compliant

■ NYLOIL® MDX

(Gray, Blue or MoS₂-filled)
- Designed for slightly higher load capabilities

NYCAST® RX/GX/BX

NYCAST RX (red), NYCAST GX (gray), and NYCAST BX (black) are solid lubricant-filled cast nylons designed to provide low coefficient of friction and superior wear resistance, making them an excellent choice in high-load, low-speed applications.



Materials Selector Guide



NYCAST®, NYLOIL® & NYMETAL® Grades

Standard Grades - for bearings, bushings, seals, die blocks, wear pads

- **NYCAST 6PA Natural** - tough, hard, resilient, high strength, for all around use; use for direct food contact

- **NYCAST XHA Blue** - extra heat resistance over 6PA Natural

- **NYCAST MoS₂** - improved wear resistance and higher crystallinity

Premium Bearing Grades - offering improved wear properties as much as five times longer life than unfilled grades

- **NYLOIL** - oil-filled, low coefficient of friction, excellent bearing material

- **NYLOIL FG** - oil-filled, low coefficient of friction, can be used in direct food contact

- **NYCAST MDX** - oil-filled + MoS₂, low coefficient of friction, higher crystallinity

- **NYCAST RX/GX/BX** - solid lubricant-filled, low coefficient of friction for high load, low speeds

Impact Modified Grades -

manufactured to improve impact properties in cold temperatures or high impact areas

- **NYCAST CP** - solid impact modified copolymer, added toughness over standard 6PA Natural

- **NYCAST MP** - liquid impact modified, tailored for high impact applications as in cushion pads

Specialty Grades

- **NYCAST 12** - high impact resistance, low moisture absorption, excellent dimensional stability, higher dielectric properties

- **NYCAST NYMETAL** - nylon bonded to metal cores creates excellent nylon-metal interface for higher torque loading

- **NYCAST Colors** - 13 colors of nylon 6 to choose from to allow color-coding of components

Product Specifications

Property	Units	ASTM Test Method	NYCAST® 6PA	NYCAST® 6PA MoS ₂
Specific Gravity	g/cm ³	D 792	1.15 - 1.17	1.15 - 1.17

Tensile Strength	psi	D 638	10,000 - 13,500	10,000 - 13,500
Tensile Elongation	%	D 638	20 - 55	20 - 55
Tensile Modulus	psi	D 638	400,000 - 550,000	400,000 - 550,000

Compressive Strength	psi	D 695	13,500 - 16,000	14,000 - 16,500
Compressive Modulus	psi	D 695	325,000 - 400,000	345,000 - 425,000
Flexural Strength	psi	D 790	15,000 - 17,500	15,000 - 18,000
Flexural Modulus	psi	D 790	420,000 - 500,000	400,000 - 520,000
Shear Strength	psi	D 732	10,000 - 11,000	10,000 - 11,000

Notched Izod Impact	ft.lbs/in.	D 256	1.5 - 2.5	1.4 - 2.4
Hardness Rockwell	R	D 785	110 - 115	110 - 120
Hardness, Shore	D	D 2240	78 - 84	78 - 86
Melting Point	°F	D 3418	430 +/- 10	430 +/- 10
Coefficient of Linear Thermal Expansion	in./in./°F	D 696	5.0 * 10 ⁻⁵	5.0 * 10 ⁻⁵
Deformation Under Load	%	D 621	0.5 - 2.5	0.5 - 2.6

Deflection Temperature

264 psi	°F	D 570	200 - 300	200 - 300
66 psi	°F	D 570	300 - 400	300 - 400
Continuous Service Temperature	°F	-	230	230
Intermittent Service Temperature	°F	-	330	330
Coefficient of Friction, Dynamic		D 1894	0.26	0.22

Water Absorption

24 hours	%	D 570	0.5 - 0.6	0.5 - 0.6
Saturation	%	D 570	4.0 - 6.0	4.0 - 6.0
Dielectric Strength	v/mil.	D 149	500 - 600	500 - 600

Dielectric Constant

60 Hz		D 150	3.7	3.7
1000 Hz		D 150	3.7	3.7
1 MHz		D 150	3.7	3.7

Compliance

FDA			X	-
USDA 3A			X	-
UL 94 HB			X	X

Property	Units	ASTM Test Method	NYCAST® XHA	NYCAST® NYLOIL®
Specific Gravity	g/cm ³	D 792	1.15 - 1.17	1.14 - 1.15
Tensile Strength	psi	D 638	10,000 - 13,500	9,500 - 11,000
Tensile Elongation	%	D 638	20 - 30	35 - 55
Tensile Modulus	psi	D 638	450,000 - 550,000	375,000 - 475,000
Compressive Strength	psi	D 695	13,500 - 16,000	13,500 - 15,000
Compressive Modulus	psi	D 695	325,000 - 400,000	325,000 - 375,000
Flexural Strength	psi	D 790	15,000 - 17,500	14,000 - 16,000
Flexural Modulus	psi	D 790	420,000 - 500,000	375,000 - 475,000
Shear Strength	psi	D 732	10,000 - 11,000	8,000 - 9,000
Notched Izod Impact	ft.lbs/in.	D 256	1.0 - 2.5	1.4 - 1.8
Hardness Rockwell	R	D 785	110 - 120	100 - 115
Hardness, Shore	D	D 2240	78 - 86	74 - 80
Melting Point	°F	D 3418	430 +/- 10	430 +/- 10
Coefficient of Linear Thermal Expansion	in./in./°F	D 696	5.0 × 10 ⁻⁵	5.0 × 10 ⁻⁵
Deformation Under Load	%	D 621	0.5 - 2.6	0.7 - 3.0
Deflection Temperature				
264 psi	°F	D 570	200 - 400	200 - 300
66 psi	°F	D 570	300 - 450	300 - 400
Continuous Service Temperature	°F	-	250	230
Intermittent Service Temperature	°F	-	350	330
Coefficient of Friction, Dynamic		D 1894	0.26	0.12
Water Absorption				
24 hours	%	D 570	0.5 - 0.6	0.4 - 0.6
Saturation	%	D 570	4.0 - 6.0	4.0 - 5.0
Dielectric Strength	v/mil.	D 149	500 - 600	500 - 600
Dielectric Constant				
60 Hz		D 150	3.7	3.7
1000 Hz		D 150	3.7	3.7
1 MHz		D 150	3.7	3.7
Compliance				
FDA			-	-
USDA 3A			-	-
UL 94 HB			X	X

NYCAST® NYLOIL® MDX	NYCAST® RX/GX/BX	NYCAST® SLX	NYCAST® CP	NYCAST® 6 MPD/6 MPY
Blue 1.14 - 1.15	1.14 - 1.15	1.12 - 1.14	1.10 - 1.13	1.14 - 1.16
10,500 - 11,000	11,000 - 11,200	10,000 - 11,000	9,000 - 11,000	9,000 - 11,000
35 - 45	35 - 100	20 - 45	25 - 40	25 - 35
425,000 - 475,000	495,000 - 525,000	400,000 - 475,000	375,000 - 475,000	375,000 - 475,000
13,500 - 14,000	13,000 - 14,500	14,000 - 16,500	12,000 - 14,000	12,500 - 15,000
325,000 - 375,000	390,000 - 410,000	345,000 - 425,000	275,000 - 375,000	300,000 - 375,000
15,500 - 16,000	14,000 - 14,500	13,500 - 16,000	13,000 - 16,000	12,000 - 13,000
425,000 - 475,000	400,000 - 450,000	350,000 - 475,000	325,000 - 475,000	300,000 - 360,000
8,000 - 9,000	8,000 - 9,000	8,000 - 9,000	7,500 - 9,000	7,500 - 10,000
1.4 - 1.8	1.4 - 1.8	1.4 - 1.8	2.0 - 4.0	2.5 - 6.0
110 - 115	110 - 115	100 - 115	100 - 110	95 - 110
74 - 80	74 - 80	74 - 80	74 - 80	70 - 80
430 +/- 10	430 +/- 10	430 +/- 10	400 +/- 10	430 +/- 10
5.0×10^{-5}	5.0×10^{-5}	5.0×10^{-5}	$4.0 - 5.0 \times 10^{-5}$	5.0×10^{-5}
0.7 - 0.8	0.7 - 3.0	0.7 - 3.0	1.0 - 3.0	1.0 - 3.0
200 - 300	200 - 300	200 - 300	200 - 300	200 - 300
300 - 400	300 - 400	300 - 400	300 - 400	300 - 400
230	230	230	210	230
330	330	330	300	330
0.12	0.12	0.14	0.26	0.26
0.4 - 0.6	0.4 - 0.5	0.5 - 0.6	0.2 - 0.3	0.5 - 0.6
4.0 - 5.0	4.0 - 5.0	4.0 - 6.0	3.0 - 5.0	4.0 - 6.0
500 - 600	500 - 600	500 - 600	500 - 600	500 - 600
3.7	3.7	3.7	3.7	3.7
3.7	3.7	3.7	3.7	3.7
3.7	3.7	3.7	3.7	3.7
	-	-	-	-
	-	-	-	-
	X	X	X	X

Curbell Plastics is a proud supplier of Cast Nylons materials.

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Mexico

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