



Discover the NYCAST® Advantage

Stock Shapes & Custom Cast Products



Standard Grades

Standard Type 6



NYCAST® 6PA Natural & Black

NYCAST 6PA Natural and Black nylon products have delivered successful performance - with and without lubrication - in a variety of diverse applications, particularly as a bearing material. They are lightweight, offer extremely good wear resistance, high tensile strength and high modulus of elasticity.

Other significant properties include:

- High impact resistance
- Excellent vibration resistance
- Resistance to brittleness and deterioration
- Easy machinability and abrasion resistance
- High heat distortion temperature



Also available in orange, forest green, red, yellow and others.

NYCAST® 6PA MoS₂

NYCAST 6PA MoS₂ is a popular choice as a dry lubricant-filled bearing material. Manufactured to be a more crystalline product with improved wear resistance, NYCAST 6PA MoS₂ also offers improved compressive strength.



NYCAST® XHA Blue

NYCAST XHA Blue has a heat stabilizer that retards the loss of physical properties as temperature increases. This allows the material to function at approximately 10% higher temperatures than standard grades - meaning NYCAST XHA operating at 200°F will have approximately the same physical properties as a standard grade operating at 185°F.

Maximum intermittent temperature for NYCAST XHA is 350°F and continuous operating temperature is 250°F (compared to 230°F for standard grades). Also available in natural, black and forest green.



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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