


Nylon

Cast and Extruded Nylon Product Offerings

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 **WARNING:** These products can potentially expose you to chemicals including, 4-Dioxane, Acetaldehyde, Acrylonitrile, Bisphenol-A, Carbon Black, Chromium, Cumene, Dichloromethane, Ethyl Acrylate, Ethylbenzene, Ethylene Glycol, Formaldehyde, Glass Fibers, Hexachlorobenzene, Lead, Methanol, Nickel, Polyvinyl Chloride, Silica-crystalline, Styrene, Tetrafluoroethylene, Titanium Dioxide, and Toluene, which are known to the state of California to cause cancer and/or birth defects or other reproductive harm. For more information, visit www.P65Warnings.ca.gov

Nylon - Cast

Type 6 / PA 6 / Cast Nylon

Nylon is one of the most widely used and versatile thermoplastic resins. Its combination of physical properties and reasonable price make it a favorite choice for numerous applications. Nylons toughness, wear resistance, tensile strength and lubricity make it a good choice for many mechanical machine parts.

Nylon has a consistent history of replacing other materials including: metal, brass, bronze, aluminum and rubber. In replacing metal gears in machinery, Nylon can be advantageous because of its ability to reduce noise, use less lubrication and increase gear life. It can also be lighter weight as Nylon weighs 1/7 as much as Bronze. Nylon can also be fabricated on most mills with high precision.

Cast Nylon exhibits all the properties which generally make nylon a superior engineering material: high strength, low friction and wear resistance. However, because of the casting process, part size and thickness are almost unlimited without degradation of the materials internal structure. Cast Nylon meets FDA standards.

Common Trade Names:

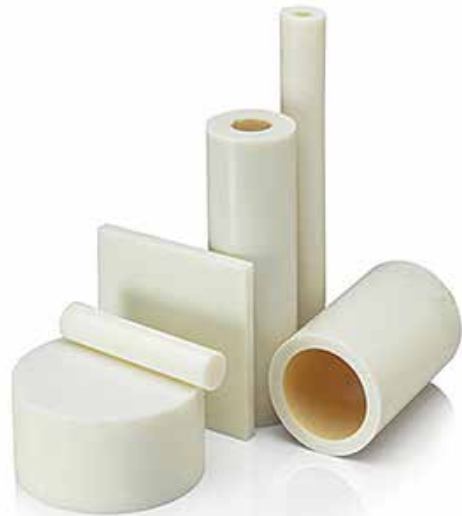
- MC[®] 907 (MCG)
- Nycast[®] 6PA (Cast Nylons LTD)
- Nylatron[®] (MCG)
- Sustamid[®] G (Rochling Sustaplast)
- TECAST PA6 C (Ensinger)
- ZL[®] 1100 (ZL Engineering)

Typical Features:

- Broadest size range availability
- Good mechanical and electrical properties
- Ideal balance of strength and toughness
- Many grade options: FDA compliant, internally lubricated, heat stabilized
- Natural is FDA, USDA, NSF and 3A-Dairy compliant

Product Applications:

- Bushings and bearings
- Gears and sprockets
- Wear rails, pads and strips
- Sheaves and pulleys
- Feed screws
- Conveyor wheels and rollers



Engineering Note:

Nylons can absorb up to 7% (by weight) water under high humidity or submerged in water. This can result in dimensional changes up to 2% and a corresponding reduction of physical properties. Proper design techniques can frequently compensate for this factor.

Nylon - Cast

Type 6 / PA 6 / Cast Nylon

Cast Nylon Sheet / Plate

Standard Thickness (inches) :	1/4" up to 8" thick
Standard Sheet Size (inches) :	24 x 48 and 48 x 120
Standard Sheet Color :	Natural and Black



Cast Nylon Rod

Standard Diameter (inches) :	1" up to 25" diameter
Standard Rod Length (feet) :	5 ft, 4 ft, 2 ft and 1 ft Varies by rod diameter
Standard Rod Color :	Natural and Black



Cast Nylon Tubular Bar

Standard Outside Diameter :	2" up to 40" diameter
Standard Wall Thickness :	1/4" up to 4" thick
Standard Tube Length (inches) :	39", 26" and 13" Varies by tube diameter
Standard Tube Color :	Natural and Black



Please inquire about large diameter discs (12-1/2" up to 60" dia), rings (up to 60" diameter) and rectangular square bar (over 4" thick). Custom castings are available upon request. Minimums may apply and lead times to be determined at time of quote and or order.

Nylon - Extruded

Type 6/6 / PA 66 / Extruded Nylon

Nylon is one of the most widely used and versatile thermoplastic resins. Its combination of physical properties and reasonable price make it a favorite choice for numerous applications. Nylons toughness, wear resistance, tensile strength and lubricity make it a good choice for many mechanical machine parts.

Extruded nylon type 6/6 is characterized as having an excellent combination of physical properties including: a high melting point, resistant to repeated impact, low coefficient of friction and a resistance to abrasion. It has good resistance to fuels, lubricants and most chemicals, but is attacked by phenols, strong acids and oxidizing agents. It is also light in weight, Nylon is 1/7 the weight of Bronze.

Of all the unmodified nylons, Nylon type 6/6 is the strongest, most rigid and has one of the highest melting points. It is commonly specified for screw machined electrical insulators and food contact parts. It is stocked in both natural and black. Other colors are available on a custom basis. Nylon type 6/6 natural is FDA, USDA, NSF, and 3A-Dairy compliant.

Common Trade Names:

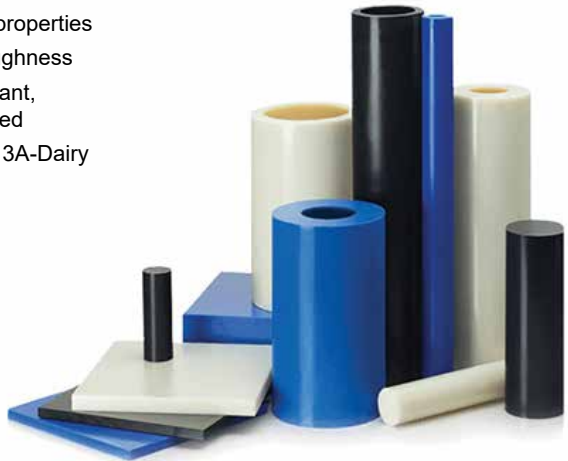
- Nylatron® (MCG)
- Nylon® 101 (MCG)
- Sustamid® 66 (Rochling Sustaplast)
- Tecamid® 6/6 (Ensinger)

Typical Features:

- Broadest size range availability
- Good mechanical and electrical properties
- Ideal balance of strength and toughness
- Many grade options: FDA compliant, internally lubricated, heat stabilized
- Natural is FDA, USDA, NSF and 3A-Dairy compliant

Product Applications:

- Bushings and bearings
- Gears and sprockets
- Wear rails, pads and strips
- Sheaves and pulleys
- Feed screws
- Conveyor wheels and rollers



Nylon - Extruded

Type 6/6 / PA 66 / Extruded Nylon

Extruded Nylon Sheet

Standard Thickness (inches) :	1/16" up to 4" thick
Standard Sheet Size (inches) :	24 x 48 24 x 144 (select sizes)
Standard Sheet Color :	Natural and Black



Extruded Nylon Rod

Standard Diameter (inches) :	1/16" up to 8" diameter
Standard Rod Length (feet) :	8 ft and 4 ft Varies by rod diameter
Standard Rod Color :	Natural and Black



Extruded Nylon Tube

Standard Outside Diameter :	1/2" up to 2" diameter
Standard Wall Thickness :	1/16" up to 1/4" thick
Standard Tube Length (feet) :	10 ft and 8 ft Varies by tube diameter
Standard Tube Color :	Natural and Black



Engineering Note:

Nylons can absorb up to 7% (by weight) water under high humidity or submerged in water. This can result in dimensional changes up to 2% and a corresponding reduction of physical properties. Proper design techniques can frequently compensate for this factor.

Nylon - Heat Stabilized

Type 6, Cast Nylon, Heat Stabilized Blue

A heat stabilized cast nylon offers long-term thermal stability up to 260°F. It is blue in color and used in a variety of bearing and structural applications such as wheels, gears and custom parts. The heat stabilizer retards the loss of physical properties as temperature increases. This allows the material to function at approximately 10% higher temperatures than standard grades; meaning that a heat stabilized nylon operating at 200°F (93°C) will have approximately the same physical properties as a standard material at 185°F (85°C). This material has delivered successful performance throughout the years.

Heat stabilized cast nylon exhibits all the properties which generally make nylon a superior engineering material: high strength, low friction and wear resistance. However, because of the casting process, part size and thickness are almost unlimited without degradation of the materials internal structure.

Nylon

Common Trade Names:

- Nylatron® MC901 (MCG)
- Sustamid® 6G HS (Rochling Sustaplast)
- Nycast® XHA Blue (Cast Nylons LTD)

Typical Features:

- Can work at higher operation temperatures
- Retains physical properties under higher temps
- Excellent abrasion and wear resistance
- Good mechanical and electrical properties
- Ideal balance of strength and toughness
- Easy to machine
- Light weight

Product Applications:

- Bushings and bearings
- Gears and sprockets
- Wear rails, pads and strips
- Sheaves and pulleys
- Feed screws
- Conveyor wheels and rollers



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Nylon - Heat Stabilized

Type 6, Cast Nylon, Heat Stabilized Blue

Heat Stabilized Nylon Sheet

Standard Thickness (inches) :	3/16" up to 4" thick
Standard Sheet Size (inches) :	24 x 48 (all thicknesses) 48 x 120 (select sizes)
Standard Sheet Color :	Blue (standard) Natural, Black & Forest Green (limited)



Heat Stabilized Nylon Rod

Standard Diameter (inches) :	2" up to 12" diameter
Standard Rod Length (feet) :	5 ft, 4 ft and 1 ft Varies by manufacturer
Standard Rod Color :	Blue



Heat Stabilized Nylon Tube

Standard Outside Diameter :	2" up to 18" diameter
Standard Wall Thickness :	Please inquire
Standard Tube Length (inches) :	78", 26" and 13" Varies by tube diameter
Standard Tube Color :	Blue



Nylon - Nycast® 6PA MoS2

Type 6, Cast Nylon, Molybdenum Disulfide

Nycast® 6PA MoS₂ is a nylon and molybdenum disulfide (MoS₂) composition designed to improve the mechanical, thermal and bearing properties to type 6/6 Nylon while maintaining its basic electrical and chemical characteristics.

Through compounding, finely divided particles impart extra lubricity to this nylon, permitting Nylon MD parts to operate with little or no lubrication. This makes it especially suited to applications where external lubrication is impractical, contaminating or difficult to maintain. The added lubricity also contributes dramatically to component service life, making Nylon MD a very cost-efficient choice.

Nylon MD provides non-galling and non-scratching characteristics, sound dampening qualities, insulating properties, resistance to oils, greases, most alkalies, solvents, and organic acids.

Typical Features:

- Greater wear resistance
- Lower surface friction
- Higher strength and greater rigidity
- Improved dimensional stability

Product Applications:

- Bushings and bearings
- Gears and sprockets
- Wear surfaces
- Valve seats
- Thrust washers
- Wheels and rollers
- Forming dies
- Tooling fixtures
- Sleeves

Engineering Note:

Nylon can absorb up to 7% (by weight) water under high humidity or submerged in water. This can result in dimensional changes up to 2% and a corresponding reduction of physical properties. Proper design techniques can frequently compensate for this factor.



Nylon - Nycast® 6PA MoS₂

Type 6, Cast Nylon, Molybdenum Disulfide

Nycast® 6PA MoS₂ Sheet

- Standard Thickness (inches) :** 1/16" up to 8" thick
- Standard Sheet Size (inches) :** 24" x 24" and 24" x 48"
- Standard Sheet Color :** Dark Gray



Nycast® 6PA MoS₂ Rod

- Standard Diameter (inches) :** 3/16" up to 12" diameter
- Standard Rod Length (feet) :** 5 ft, 4 ft and 1 ft
Varies by diameter
- Standard Rod Color :** Dark Gray



Nycast® 6PA MoS₂ Tube

- Standard Outside Diameter :** 2" up to 40" diameter
- Standard Wall Sections :** 1/4" up to 4" thick
- Standard Tube Length (inches) :** 52", 26" and 13"
Varies by tube diameter
- Standard Tube Color :** Dark Gray



CAST NYLONS
LIMITED

Nylon

PLASTICS GUIDE

Nylon - Oil-Filled

Type 6, Cast Nylon, Green Oil-Filled - Nyloil®

A cast nylon with built-in oil lubrication, oil-filled cast nylon provides superior machinability, performance, and durability compared to other plastic and traditional bearing materials. Three grades of oil-filled nylon are available to fit the most demanding applications: original green oil-filled for most bearing applications; natural (white) food-grade, for direct contact with food; and MoS2 filled Gray oil-filled nylon with slightly higher compressive load capabilities than original oil-filled Nylon.

During the manufacturing process, an oil lubricant package is completely dispersed within the cast nylon matrix, making it an integral part of the casting structure. Although not evident by sight or touch, the oil lubricant in the nylon is always at the surface regardless of the amount of material removed during finish machining or normal wear.

Food Grade (FG/LFG) is a self lubricating nylon bearing material which meets the provisions 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 cleanability, contamination, or other considerations.

Common Trade Names:

- Nylatron® LIG (MCG)
- Nylatron® LFG (MCG)
- Nyloil® (Cast Nylons LTD)
- Nyloil® FG/MDX (Cast Nylons LTD)
- Sustamid® 6G OL (Rochling Sustaplast)
- ZL® 1100 Oil (ZL Engineering)

Typical Features:

- Lubrication results in 25% lower coefficient of friction than other grades of nylon
- Performs in harsh environments where lubrication is difficult, impossible, or un-desirable
- Operates efficiently in direct contact with abrasive slurries
- 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
- Nylon weighs only 1/7 the weight of Bronze

Product Applications:

- Gears and sprockets
- Bushings and bearings
- Wear rails, pads and strips
- Sheaves and pulleys
- Conveyor wheels and rollers
- Feed screws
- Star wheels

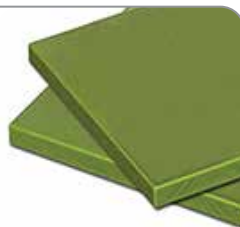


Nylon - Oil-Filled

Type 6, Cast Nylon, Green Oil-Filled - Nyloil®

Oil-Filled Nylon Sheet / Plate

Standard Thickness (inches) :	1/4" up to 4" thick
Standard Sheet Size (inches) :	24 x 48 and 48 x 120
Standard Sheet Color :	Green (standard grade) White (food grade) Gray (MoS2 filled)



Oil-Filled Nylon Rod

Standard Diameter (inches) :	1" up to 12" diameter
Standard Rod Length (feet) :	5 ft and 4 ft Varies by rod diameter
Standard Rod Color :	Green (standard grade) White (food grade) Gray (MoS2 filled)



Oil-Filled Nylon Tubular Bar

Standard Outside Diameter :	2" up to 40" diameter
Standard Wall Sections :	1/4" up to 4" thick
Standard Tube Length (inches) :	26" and 13" Varies by tube diameter
Standard Tube Color :	Green (standard grade) White (food grade) Gray (MoS2 filled)



Please inquire about large diameter discs (12-1/2" up to 60" dia), rings (up to 60" diameter) and rectangular square bar (over 4" thick). Custom castings are available upon request. Minimums may apply and lead times to be determined at time of quote and or order.

Nylon - Cast & Extruded

Typical Properties Comparison Chart

Nylon

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PROPERTY TESTED	ASTM	UNITS
PHYSICAL PROPERTIES		
Specific Gravity	D792	g/cc
Water Absorption, Immersion, 24 hours	D570(2)	%
Water Absorption, Immersion, at Saturation	D570(2)	%
MECHANICAL PROPERTIES		
Hardness Rockwell R (Shore D)	D785 (D2240)	---
Tensile Strength	D638	psi
Tensile Strength at 65°C (150°F)	D638	psi
Elongation at Break	D638	%
Tensile Modulus	D638	psi
Flexural Strength	D790	psi
Flexural Modulus	D790	psi
Compressive Strength, 10% Deformation	D695	psi
Compressive Modulus	D695	psi
Shear Strength	D732	psi
Izod Impact (Notched)	D256 Type A	ft.-lb./in.
Coefficient of Friction, Dynamic (Dry vs. Steel)	QTM 55007	---
Wear Factor "k" x 10 ⁻¹⁰	QTM 55010	in ³ -min./ft.-lb.-hr.
Limiting PV (with 4:1 safety factor applied)	QTM 55007	psi-ft./min.
ELECTRICAL PROPERTIES		
Surface Resistivity per Square	EOS/ESD S11.11	ohm
Dielectric Strength (Short Term)	ASTM D149	kV/in.
THERMAL PROPERTIES		
Coefficient of Linear Thermal Expansion	E831	μin./in.-°F
Thermal Conductivity	F433	BTU-in./hr.-ft ² -°F
Melting Point (Crystalline, Peak)	D3418	°F
Maximum Service Temp., Air (Long Term)	---	°F
Deflection Temp at 1.8 MPa (264 psi)	D648	°F
Flammability, UL94 (1/8", est. rating)	---	---
COMPLIANCE PROPERTIES		
3A-Dairy	---	---
Canada AG	---	---
FDA	---	---
NSF	---	---
USDA	---	---
USP Class VI	---	---

Note: Values listed are typical and are meant only as a guide to aid in design only. As always we highly recommend testing any new material in the application first before converting over to new material based on guide data information alone. Applications and usage vary and Alro does not guarantee any results as this data is for information only.



Nylon - Cast & Extruded

Typical Properties Comparison Chart (continued)

MC 907 PA6 (Cast Nylon)	NYLON 101 (Extruded)	NYCAST® MoS ₂ (Molybdenum Disulfide)	NYLOIL® (Oil-Filled Nylon)	NYLATRON® LIG (Oil-Filled Nylon)
1.15	1.15	1.15 - 1.17	1.14 - 1.15	1.14
0.60	0.30	0.50 - 0.60	0.40 - 0.60	0.30
7.0	7.0	5.0 - 6.0	4.0 - 5.0	6.0
115 (85)	115 (80)	115-125 (78-83)	110-115 (74-80)	120 (---)
12,000	12,000	10,000-13,500	9,500-11,000	9,900
6,000	6,000	---	---	6,000
20%	50%	20 - 55%	35 - 55%	50%
400,000	425,000	---	375,000-475,000	465,000
16,000	15,000	15,500-17,500	14,000-16,000	15,000
500,000	450,000	420,000-500,000	375,000-475,000	525,000
15,000	12,500	13,500-16,000	13,500-15,000	13,500
400,000	420,000	325,000-400,000	325,000-375,000	330,000
11,000	10,000	10,000-11,000	8,000-9,000	9,300
0.400	0.600	0.70 - 0.90	1.40 - 1.80	1.00
0.20	0.25	0.22	0.12	0.14
100.0 x 10 ⁻¹⁰	80.0 x 10 ⁻¹⁰	---	---	72.0 x 10 ⁻¹⁰
3,000	2,700	---	---	6,000
>= 1.00e + 13	>= 1.00e + 13	---	---	>= 1.00e + 13
500	400	500 - 600	500 - 600	---
50.0	55.0	---	50.0	56.0
1.70	1.70	---	---	---
420°	500°	450°	430°	420°
200°	210°	230°	230°	220°
200°	200°	200° -400°	200° -300°	200°
HB	V-2	---	---	HB
Yes	Yes	No	No	No
No	No	No	No	No
Yes	Yes	No	No	No
No	Yes	No	No	No
Yes	Yes	No	No	No
No	No	No	No	No

Note: Values listed are typical and are meant only as a guide to aid in design only. As always we highly recommend testing any new material in the application first before converting over to new material based on guide data information alone. Applications and usage vary and Alro does not guarantee any results as this data is for information only.

Nylon

PLASTICS GUIDE

Nylon - Nylatron® GSM /GS

Cast & Extruded Nylon, Molybdenum Sulphide

Nylatron® is a registered trade name of the Mitsubishi Chemical Group. The Nylatron® product line features a variety of materials designed to excel in specific applications. Please read below on each specific Nylatron® product for more information.

Nylatron® GS Nylon (Extruded)

Molybdenum disulphide (MoS²) filled extruded nylon offering improved strength and rigidity. With a lower coefficient of linear thermal expansion than Nylon 101, Nylatron® GS parts maintain better fit and clearances, and have less tendency to seize as bearings.

Nylatron® GSM Nylon (Cast)

Nylatron® GSM cast nylon contains finely divided particles of molybdenum disulphide (MoS²) to enhance its load bearing capabilities while maintaining the impact resistance inherent to nylon. It is the most commonly used grade for gears, sheaves, sprockets and custom parts. It is grey-black in color.

Nylatron® GSM Blue Nylon

The first cast nylon to combine both molybdenum disulphid (MoS²) and oil for the load capacity of Nylatron® GSM nylon, plus improved frictional characteristics. It excels in higher pressures, and at low speeds-up to 40 fpm. It offers 20% lower coefficient of friction, 50% greater limiting PV, and a lower “k” factor than Nylatron® GSM, and the lowest “slip-stick” of any nylon product making it ideal for slide pads, thrust washers and trunion bearings.

Typical Features:

- Broadest size range availability
- Good mechanical and electrical properties
- Ideal balance of strength and toughness
- Improved load bearing properties
- Cast as finished parts or near net shapes (GSM)

Product Applications:

- Gears, sprockets and starwheels
- Conveyor wheels
- Bushings and bearings
- Rollers and sleeves
- Wear pads, rails and strips
- Supports and rubbing blocks
- Pulleys, sheaves and guides
- Valve seats and seals



Nylon - Nylatron® GSM /GS

Cast & Extruded Nylon, Molybdenum Sulfide


Nylatron® GS Sheet

Standard Thickness (inches) :	1/16" up to 2" thick
Standard Sheet Size (inches) :	24" x 48" 24" x 144" (1/4" & 3/8" only)
Standard Color :	Dark Gray (Marbled)




Nylatron® GSM Sheet

Standard Thickness (inches) :	3/16" up to 4" thick
Standard Sheet Size (inches) :	24" x 48" 48" x 120" (limited)
Standard Color :	Dark Gray



Nylatron® GS Rod

Standard Diameter (inches) :	3/16" up to 2" dia.
Standard Rod Length (feet) :	8 feet (96") long
Standard Color :	Dark Gray (Marbled)



Nylatron® GSM Rod

Standard Diameter (inches) :	2" up to 12" dia.
Standard Rod Length (feet) :	5 feet (2" to 4" dia) 4 feet (4.25" to 6" dia) 1 foot (6.25" dia and up)
Standard Color :	Dark Gray



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Nylon - Nylatron® NSM

Premium Bearing & Wear Grade, Cast Nylon

Nylatron® NSM is the premium bearing and wear nylon product available today. Solid lubricant additives impart self-lubricating, high pressure/velocity and superior wear resistance characteristics. This wear resistance is delivered without either start-up or running lubrication making it ideal for bearings, gears and wear pads. It is a proprietary type 6 nylon formulation produced using MCG's Monocast process. Nylatron® NSM was developed specifically for demanding applications where larger size parts are required. In wear applications, Nylatron® NSM lasts up to 10 times longer than standard Type 6 nylon.

Developed specifically for demanding applications, Nylatron® NSM outperforms all other "premium" wear grade materials by far. Ideal for bearings and wear pads, Nylatron® NSM offers advantages beyond superior wear resistance at an affordable price. It provides weight and noise reduction, corrosion resistance, and easy machining. With less downtime and reduced maintenance, save time and money by realizing the increased performance and productivity of this self-lubricating nylon.

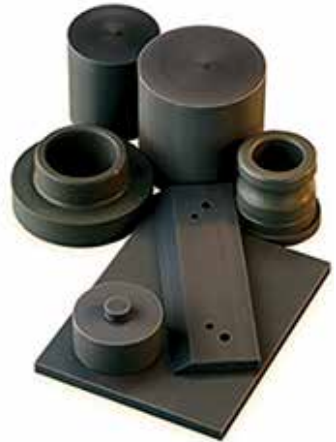
Nylon

Typical Features:

- High mechanical strength, stiffness, hardness and toughness
- High mechanical dampening ability
- Excellent wear resistance
- Good sliding properties
- Good electrical insulating properties
- Good resistance to high energy radiation (gamma/x-rays)
- Good fatigue resistance
- Good machinability

Product Applications:

- Bushings and bearings
- Rollers and sleeves
- Conveyor and star wheels
- Wear components
- Gears



Nylatron® NSM

Standard Thickness (inches) :	3/16" up to 4" thick
Standard Sheet Size (inches) :	24" x 48" 48" x 120" (1/2" only)
Standard Diameter (inches) :	2" up to 12" diameter
Standard Rod Length (inches) :	2" up to 6" dia 48" long 7" dia and above 12" long
Standard Color :	Dark Gray

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Nylon - Nylatron® Grades

Specialty Grades of Nylatron®

Nylatron® is a registered trade name of Mitsubishi Chemical Group (MCG). The Nylatron® product line features a variety of materials designed to excel in specific applications. Please read below on each specific Nylatron® product for more information.

Nylatron® GF30 PA66 (Glass Reinforced)

For applications requiring higher compressive strength and rigidity, 30% glass reinforced Nylon 6/6 is also available. It is stocked in diameters ranging from 10mm to 150mm (or .394" to 5.910" in meter lengths). Only available in black color.

Nylatron® LFG PA6 (FDA Compliant)

Nylatron® LFG takes the performance of Nylatron® LIG and adds FDA compliance for applications where food contact is possible. Food packaging and processing equipment users can now benefit from the benefits of this material.

Nylatron® LIG PA6 (Oil-Filled)

Nylatron® LIG combines the toughness of cast PA6 with an oil-based lubricant that is encapsulated within the nylon matrix. It increases the load bearing performance of the material when compared to unfilled nylons and reduces the coefficient of friction. It is an ideal material for industrial applications.

Nylatron® MC901 PA6 (Heat Stabilized)

Heat stabilized nylon offering long-term thermal stability to 260°F. It is blue in color and used in a variety of bearing and structural applications such as wheels, gears, and custom parts.

Nylatron® MD (Metal Detectable)

Nylatron® MD is a metal detectable grade of nylon offering improved strength and rigidity. With a lower coefficient of linear thermal expansion than Nylon 101, Nylatron® MD parts maintain better fit and clearances, and have less tendency to seize as bearings.

Nylatron® WP PA6 (Wear Pad)

Developed specifically for wear pads, Nylatron® WP outperforms its competition across a wide range of applications and in multiple industries. Nylatron® WP offers an economical solution to provide superior performance, weight and noise reduction, corrosion resistance, and easy machining.

Nylatron® 4.6 PA46

Offers superior heat aging and creep resistance and retention of stiffness up to 300°F. It is reddish brown in color and used where PA 6, PA 66, POM and PET fall short.

Nylatron® 703XL PA6 (Ultra-High Performance)

This ultra-high performance bearing grade of PA6 provides wear resistance near the levels of Nylatron NSM PA6 with superior load bearing capability and an industry first - a near zero level of "stick-slip."



Nylatron® Grades

Typical Properties Comparison Nylatron® Grades

Nylon

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PROPERTY TESTED	ASTM	UNITS
PHYSICAL PROPERTIES		
Specific Gravity	D792	g/cc
Water Absorption, Immersion, 24 hours	D570(2)	%
Water Absorption, Immersion, at Saturation	D570(2)	%
MECHANICAL PROPERTIES		
Hardness Rockwell R (Shore D)	D785 (D2240)	---
Tensile Strength	D638	psi
Tensile Strength at 65°C (150°F)	D638	psi
Elongation at Break	D638	%
Tensile Modulus	D638	psi
Flexural Strength	D790	psi
Flexural Modulus	D790	psi
Compressive Strength, 10% Deformation	D695	psi
Compressive Modulus	D695	psi
Shear Strength	D732	psi
Izod Impact (Notched)	D256 Type A	ft.-lb./in.
Coefficient of Friction, Dynamic (Dry vs. Steel)	QTM 55007	---
Wear Factor "k" x 10 ⁻¹⁰	QTM 55010	in ³ -min./ft.-lb.-hr.
Limiting PV (with 4:1 safety factor applied)	QTM 55007	psi-ft./min.
ELECTRICAL PROPERTIES		
Surface Resistivity per Square	EOS/ESD S11.11	ohm
Dielectric Strength (Short Term)	ASTM D149	kV/in.
THERMAL PROPERTIES		
Coefficient of Linear Thermal Expansion	E831	μin./in.-°F
Thermal Conductivity	F433	BTU-in./hr.-ft ² -°F
Melting Point (Crystalline, Peak)	D3418	°F
Maximum Service Temp., Air (Long Term)	---	°F
Deflection Temp at 1.8 MPa (264 psi)	D648	°F
Flammability, UL94 (1/8", est. rating)	---	---
COMPLIANCE PROPERTIES		
3A-Dairy	---	---
Canada AG	---	---
FDA	---	---
NSF	---	---
USDA	---	---
USP Class VI	---	---

Note: Values listed are typical and are meant only as a guide to aid in design only. As always we highly recommend testing any new material in the application first before converting over to new material based on guide data information alone. Applications and usage vary and Alro does not guarantee any results as this data is for information only.



Nylatron® Grades

Typical Properties Comparison Nylatron® Grades

NYLATRON® GS (Extruded)	NYLATRON® GSM (Cast)	NYLATRON® LFG (FDA Compliant)	NYLATRON® LIG (Oil-Filled)	NYLATRON® NSM (Premium Grade)
1.16	1.16	1.14	1.14	1.15
0.30	0.60	0.30	0.30	0.30
7.0	7.0	6.0	6.0	7.0
115 (85)	110 (80)	120 (---)	120 (---)	110 (85)
12,500	11,000	9,900	9,900	11,000
6,000	6,000	6,000	6,000	6,000
25%	30%	50%	50%	20%
480,000	400,000	465,000	465,000	410,000
17,000	16,000	15,000	15,000	16,000
460,000	500,000	525,000	525,000	475,000
16,000	14,000	13,500	13,500	14,000
420,000	400,000	330,000	330,000	400,000
10,500	10,500	9,300	9,300	10,000
0.500	0.500	1.00	1.00	0.500
0.20	0.20	0.14	0.14	0.18
90.0 x 10 ⁻¹⁰	90.0 x 10 ⁻¹⁰	72.0 x 10 ⁻¹⁰	72.0 x 10 ⁻¹⁰	12.0 x 10 ⁻¹⁰
3,000	3,000	6,000	6,000	15,000
>= 1.00e + 13	>= 1.00e + 13	>= 1.00e + 13	>= 1.00e + 13	>= 1.00e + 13
350	400	---	---	400
40.0	50.0	56.0	56.0	55.0
1.70	---	---	---	---
500°	420°	420°	420°	420°
220°	200°	220°	220°	200°
200°	200°	200°	200°	200°
V-2	HB	HB	HB	HB
No	No	Yes	No	No
No	No	No	No	No
No	No	Yes	No	No
No	No	No	No	No
No	No	No	No	No
No	No	No	No	No

Nylon

PLASTICS GUIDE

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Hydlar® Z

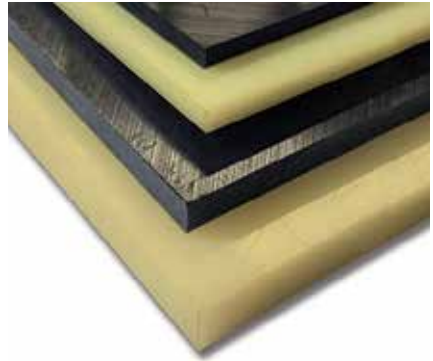
Kevlar® reinforced Nylon 6/6

Hydlar® Z is a Kevlar® fiber reinforced Nylon 6/6. With the addition of Kevlar®, Hydlar® Z's properties improve, better dimensional stability is achieved and wear resistance is increased ten times that of unfilled nylon. Hydlar® possesses a combination of physical properties that cannot be found in any other commercially available engineered plastic.

Hydlar® is applicable to a wide variety of industrial applications where high strength, extreme wear resistance and low abrasiveness are required. Typical applications would be wear strips, bearings, bushings, rollers, gears and wherever wear and abrasion resistant materials are required.

Typical Features:

- Extremely wear resistant
- Superior abrasion resistance
- Outstanding machinability
- Good dimensional stability
- No galling or mating wear surfaces



Product Applications:

- Bushings
- Bearings
- Gears
- Rollers
- Wear strips

Hydlar® Z

Standard Thickness (inches) :	1/4" to 2" thick (standard increments)
Standard Sheet Size (inches) :	12" x 12", 12" x 24", 12" x 48" and 24" x 48"
Standard Diameter (inches) :	1/4" to 6" dia. (standard increments)
Standard Rod Length (inches) :	60" or 120" (may vary by diameter)
Hydlar Z Color :	Yellow-Brown