



ENGINEERING PLASTIC SOLUTIONS

MATERIALS BROCHURE

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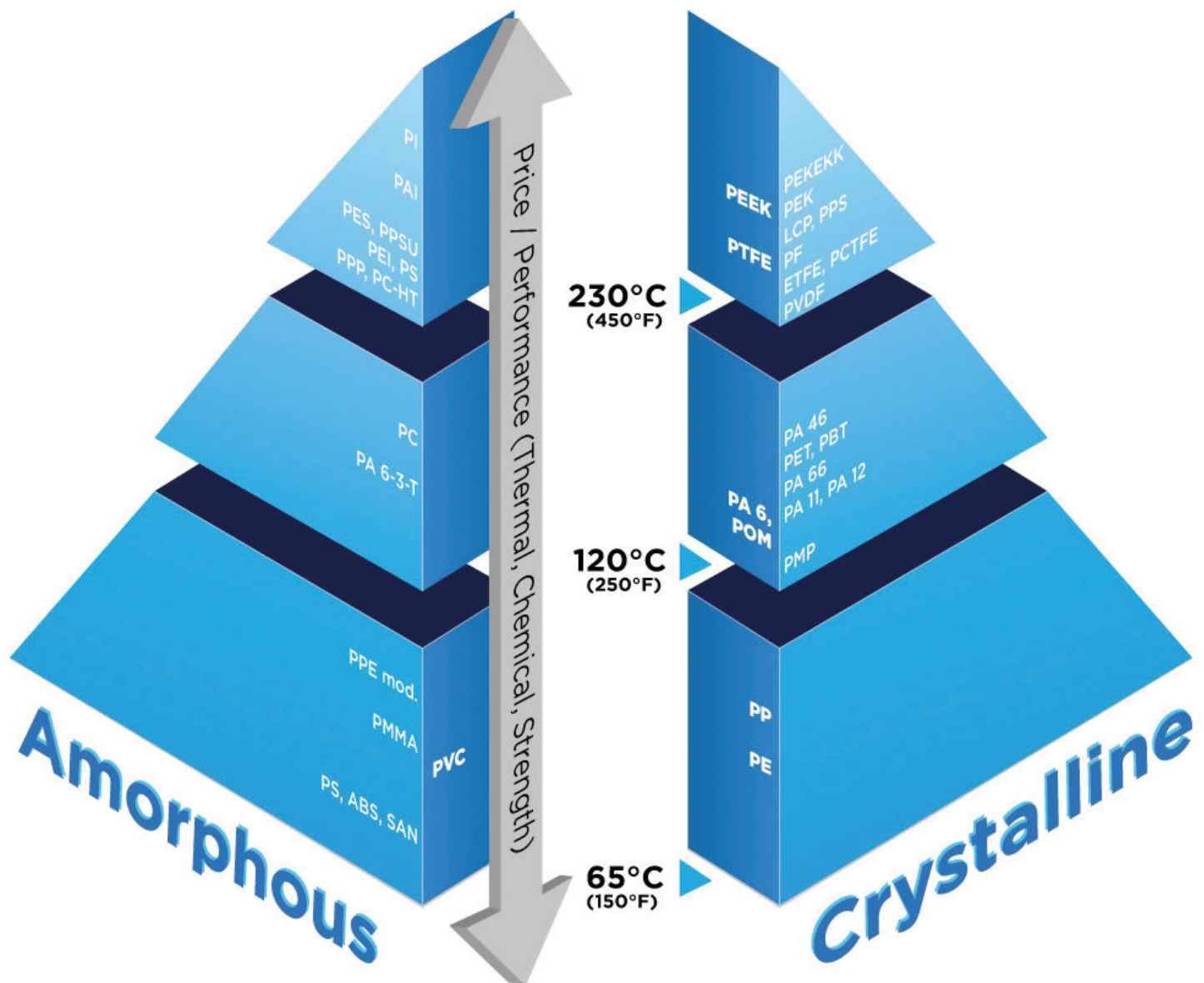


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NYLACAST CONTINUE TO PIONEER AND OFFER A LARGE RANGE OF MATERIAL GRADES

Please contact our materials sales team on +44 (0) 116 276 8558 or visit www.nylacast.com for further details.





NYLACAST MATERIALS

Nylacast is one of the leading manufacturers of cast nylons and has specialised in developing this unique polymer for many decades. For this reason we offer the widest range of profiles, grades and sizes available, concentrating on our ability to customise and formulate a grade for a particular application. Our manufacturing facilities are based in the United Kingdom and South Africa.

Although our origin lies in cast nylons we are also able to supply a much wider range of extruded engineering polymers, with new high performance products being added to our product portfolio. Our cast nylon manufacturing facilities, capable of producing thousands of tonnes per annum, are being complemented with extrusion capacity.

To support this capacity, Nylacast concentrate on the various aspects relating to raw material supply, from costs, to quality, to custom formulation and logistics. Our desire is to be a quality producer with a universal set of standards across our manufacturing facilities. Many of the 'non-bulk' constituent additives, which make Nylacast products so unique, are manufactured, synthesized and masterbatched 'in-house'.

Due to Nylacast's significant involvement in added value machined components derived from our own range of engineering polymers, it is imperative that our recycling strategy is robust. At present we recycle over 200 metric tons per annum into both extrusion and moulding grade pellets that are reprocessed or sold specifically as recycled product.

The purpose built casting facility, which complements the extensive production ability at Nylacast, uses state of the art casting equipment and materials technology to offer a large range of semi-finished or cast products in a plate, rod or tube profile. Derivatives of our standard profiles are semi finished (cut, planed, sawn etc) according to customer requirements.

Nylacast Materials:

- Nylacast only use premium raw materials from world renowned suppliers
- In-house production and total control of active chemicals and additives
- Semi automated state-of-the-art cast and extrusion polymer processing equipment
- In-house test facilities for full material characterisation
- State-of-the-art automated precision cutting and planning technology
- MRP controlled materials stock and distribution centre
- Polymer processing facilities in 2 continents

Why choose plastics over traditional metals?

This choice is often based on improved performance and cost reduction, but further advantages include:

- Increased component life
- Zero corrosion
- Weight reduction
- Improved wear-performance/friction coefficient
- Noise dampening
- Electrical and thermal insulation
- Internal lubrication
- Non-stick characteristics
- Abrasion resistance
- Dimensional stability
- Chemical resistance
- Ease of machining
- Aesthetics
- Self Lubricating
- Self Memory

The above characteristics make engineering plastics the logical and cost-effective choice for a range of applications including: heavy-wear components, food processing components and semi conductor processing equipment.

NYLACAST PA 6 NATURAL

Cast Nylons are a range of polyamides produced by a casting process involving the anionic polymerisation of caprolactam. This process allows the production of semi-finished plate, rod, tube and custom castings that are largely free of internal stresses. Nylacast PA 6 Natural (also available in black) is the basic PA 6 grade from which all the other grades of cast nylon stem. Generally accepted as the primary engineering polymer, natural cast nylon is suitable for virtually any plain bearing application, not to mention a huge range of other applications for which this versatile grade finds a use. By varying the conditions of polymerisation the mechanical properties of cast nylon may be altered to suit specific applications and the performance of the basic polymer can be enhanced with the addition of various additives, fillers, lubricants and colourants (see further grades).

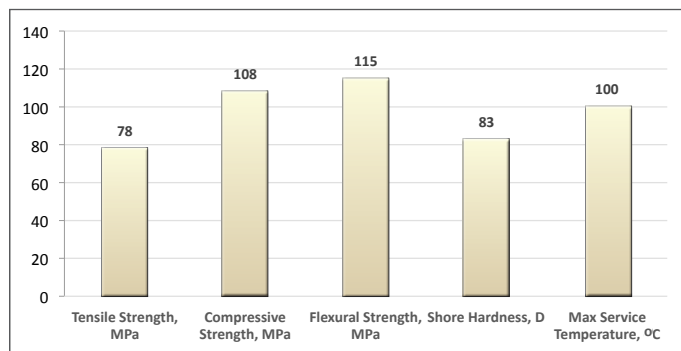
Compared with injection moulding and extrusion grades of polyamide, cast nylons stand out with their improved mechanical, thermal and chemical resistance properties. Specifically as the material has a higher tensile, compressive

and impact strength as well as an improved resistance to creep and heat ageing. The reasons for these improved characteristics are high crystallinity and a remarkably higher molecular weight. Due to low water absorption, mechanical properties and dimensions are more stable, making it suited for components that have to meet closer tolerances. Abrasion resistance and overall wear performance are probably the material's most important characteristics. For use in bearing applications and in applications where food contact is involved, cast nylons may be offered as a material conforming to FDA approvals.

Natural cast nylon has the ability to operate effectively without the need for lubricants and has an increased resistance to wear of over 5 times that for plain bearings manufactured from non-ferrous metals. As is the case with virtually all nylons it is easy to machine, pleasant to work with and relatively light weight – one eighth that of brass – making the handling and fitting of large components manufactured in cast nylon a relatively easy matter.

BENEFITS OF NYLACAST PA 6 NATURAL

- Good mechanical, thermal and chemical resistance properties
- Universally acknowledged as the primary engineering polymer
- Good PV and load bearing capabilities
- Improved characteristics over extruded polyamides
- Good wear and abrasion resistance
- Good dimensional stability, largely free from internal stresses
- FDA Compliance
- Available in a wide range of sizes and colours



PA 6

INDUSTRY USERS

- Petrochemical
- Aerospace
- Railways
- Ship building
- Food and drink packaging
- Bottling and canning
- Pharmaceuticals
- Steel mills
- Quarrying/mining
- Cranes
- Shoe manufacturing
- Conveyors

TYPICAL APPLICATION

- Rollers
- Switch collar
- Washers
- Bearings
- Load support
- Bushes
- Centralizers
- Cable drums
- Guide clutch
- Seals
- Blockers
- Wear pads
- Chain Guide
- Clamps
- Bespoke Components

Nylacast PA 6 Natural is available in standard plate, rod and over thousands of tube OD/ID configurations in several different lengths.



NYLACAST PA 6 NATURAL

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Natural, Black	-	Natural, Black
Density	ISO 1183:1997	Test Method A	g/cm ³	1.141	lb/inchE3	0.042
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2.5	%	2.5
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.3	%	0.3
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	7	%	7
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	75-80	psi	11.6k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3400-3600	psi	580k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>20	%	>20
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	95-120	psi	13.8k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2100-2700	psi	392k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	105-125	psi	15.3k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3300-3600	psi	478k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	4.5-6.0	ft.lb/inE2	2.9
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.16	-	0.16
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	4.3x10E-5	-	2.4x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	83	Shore D	83
THERMAL						
Melting Temperature, Tg	-	-	°C	223	°F	433
Glass Transition Temperature	ISO 11359:1999	-	°C	65	°F	149
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	75	°F	167
Maximum/Minimum Continuous Service Temperatures	-	-	°C	100/-40	°F	212/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	170/-100	°F	338/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8x10E-5	°F,E-1	4.4x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.26	°F	0.15
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.02	-	0.02
Dielectric Stength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				YES	YES	

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

NOTES

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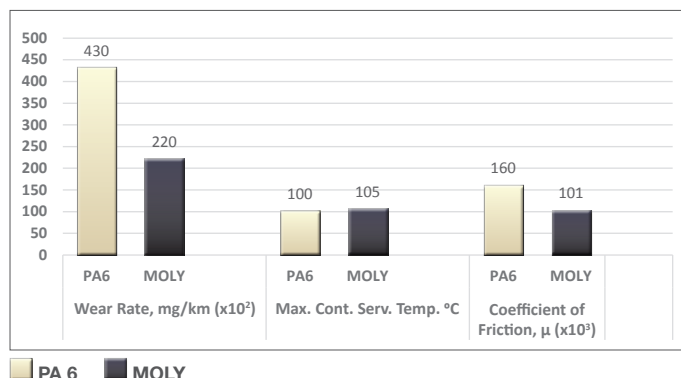
NYLACAST MOLY

Nylacast Moly is a cast nylon material in which improved crystallisation occurs by the addition of Molybdenum Disulphide. On account of this the superficial hardness increases (providing excellent machine ability) and simultaneously the general mechanical and anti-friction properties are improved. Due to the fact that the crystal structure breaks down immediately before the melting temperature is reached, the thermal properties of the material are improved over the basic grade.

BENEFITS OF NYLACAST MOLY

- Increased superficial hardness provides excellent machine ability
- Improvement in wear properties as a result of dry lubricant
- Improved anti-friction properties
- Improved mechanical properties
- Elevated operating temperatures
- Lower water absorption
- Improved dimensional stability
- Excellent chemical resistance properties
- Good PV and load bearing capabilities
- Extended range of applications

MoS₂ provides a degree of self lubrication leading to an improvement in the wear properties of the material. These improved properties, combined with lower water absorption, extend the range of applications that Moly has over Natural cast nylon. Dynamic bearing applications at elevated operating temperatures of up to 105°C are particularly suited to this material.



INDUSTRY USERS

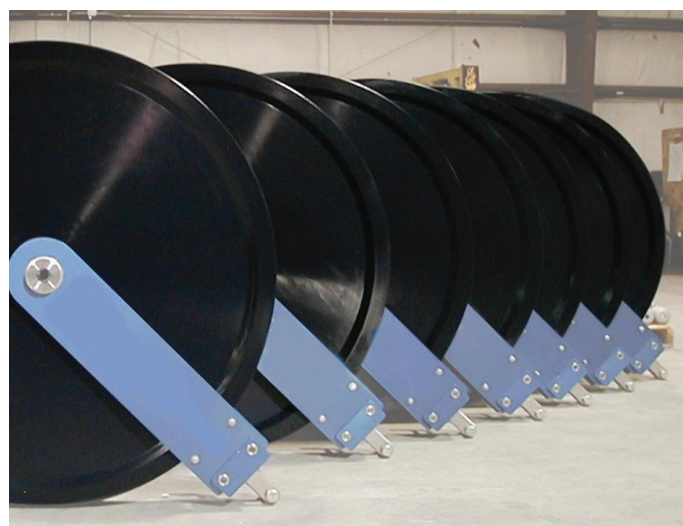
- Aerospace
- Railways
- Ship building
- Food and drink packaging
- Steel mills
- Quarrying and mining
- Cranes
- Conveyors
- Offshore
- Agriculture
- Waste Management
- Construction



TYPICAL APPLICATIONS

- Sheaves
- Rollers
- Spacers
- Slide pads
- Chain sheaves
- Wear strips
- Spacer
- Wear pads
- Bearings
- Bush
- Chain Wheel
- Hose Clamp
- Wear plates
- Bespoke Components

Nylacast H.S. Blue is available as standard plate, rod and thousands of tubes OD/ID configurations in several different lengths.



NYLACAST MOLY

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Black	-	Black
Density	ISO 1183:1997	Test Method A	g/cm ³	1.15	lb/inchE3	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2.1	%	2.1
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.2	%	0.2
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	6.3	%	6.3
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	75-80	psi	11.7k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3800-4000	psi	629k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>20	%	>20
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	105	psi	15.3k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2500-2700	psi	348k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	100-110	psi	13.8k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3000-3200	psi	430k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	5.5-7.0	ft.lb/inE2	3.5
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.101	-	0.101
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	2.2x10E-5	-	1.1x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	80	Shore D	80
THERMAL						
Melting Temperature, Tg	-	-	°C	221	°F	430
Glass Transition Temperature	ISO 11359:1999	-	°C	68	°F	154
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	80	°F	176
Maximum/Minimum Continuous Service Temperatures	-	-	°C	105/-40	°F	221/40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	170/-100	°F	338/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8.51E-05	°F _E -1	4.7x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.28	°F	0.17
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.11	-	0.11
Dielectric Stength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				NO	NO	

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

NOTES

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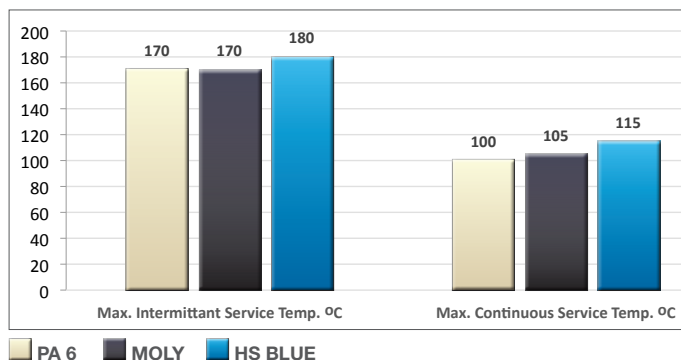
NYLACAST HS BLUE

HS Blue is heat stabilized cast nylon, easily distinguished by its blue colour. Additives in the form of high temperature resistant colourants, heat stabilizers and UV stabilizers allow HS Blue to better retain its mechanical properties in applications operating at higher temperatures.

HS Blue conforms to the specifications required by the Japanese market for cast nylons, a high percentage of which is serviced by this product alone. This accreditation is held by very few manufacturers of cast nylon due to the difficulties involved during its manufacture.

BENEFITS OF NYLACAST HS BLUE

- Better performance at higher operating temperatures
- Heat stabilized colourants
- UV stabilized
- Improved mechanical properties
- Good dimensional stability as with Natural cast nylon
- Excellent chemical resistance properties
- Good PV and load bearing capabilities
- Conforms to Japanese standards



INDUSTRY USERS

- Transport
- Ship building
- Food and drink packaging
- Pharmaceuticals
- Steel mills
- Quarrying and mining
- Cranes
- Conveyors
- Offshore
- Power Plants



TYPICAL APPLICATIONS

- Wear rings
- Spacers
- Dolly blocks
- Guides
- Wear pads
- Shims
- Sheaves
- Rollers
- Pump blocks
- Pusher blocks
- Bush Stoppers
- Thruster Nozzles
- Bespoke Components

Nylacast H.S. Blue is available as standard plate, rod and thousands of tubes OD/ID configurations in several different lengths.



NYLACAST HS BLUE PA 6 C + UV & HEAT STABILISERS

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Blue	-	Blue
Density	ISO 1183:1997	Test Method A	g/cm ³	1.135	lb/inchE3	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2.5	%	2.5
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.3	%	0.3
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	7	%	7
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	75-85	psi	12.0k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3300-3700	psi	560k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>30	%	>30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	120-130	psi	16.0k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2600-2800	psi	441k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	100-120	psi	14.6k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3300-3500	psi	472k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	5.0-6.5	ft.lb/inE2	3.2
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.15	-	0.15
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	4.0x10E-5	-	2.0x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	84	Shore D	84
THERMAL						
Melting Temperature, Tg	-	-	°C	223.7	°F	435
Glass Transition Temperature	ISO 11359:1999	-	°C	66	°F	167
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	74	°F	165
Maximum/Minimum Continuous Service Temperatures	-	-	°C	115/-40	°F	239/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	180/-100	°F	356/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8x10E-5	°F _E -1	4.4x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.26	°F	0.16
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.014	-	0.014
Dielectric Stength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				NO	NO	

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

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NYLACAST AQUANYL 612

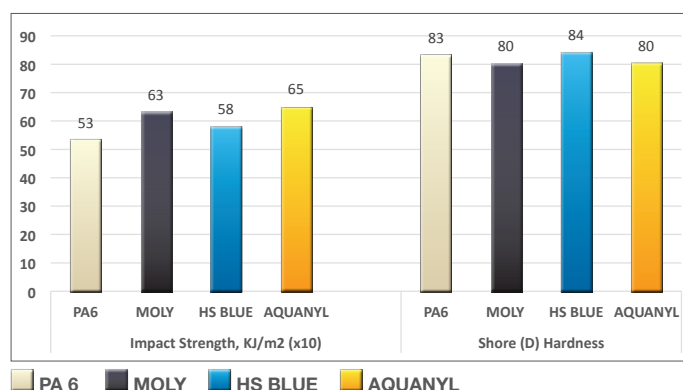
Aquanyl 612 is a copolymer of nylon 6 and nylon 12 produced via the anionic polymerization process using the monomer's of caprolactam and Laurinlactam.

Laurinlactam has a similar effect to a plasticizer, but being a copolymer does not suffer the "Leeching out" problems of many plasticisers. The aim is to impart a greater degree of resilience to the material, for which purpose the co-polymerisation method is very successful.

Aquanyl 612 is employed where additional resilience is a specific requirement for the application, for instance in the ball valve industry where the application of valve seat seals benefits greatly from this material. In addition due to its copolymer make up with nylon 12 the product has a Lower moisture uptake than cast nylon providing the obvious benefit of improved dimensional stability.

BENEFITS OF NYLACAST AQUANYL 612

- Greater degree of material resilience
- Plasticised benefits without the associated problems
- Reduced water absorption
- Improved dimensional stability
- Good mechanical, thermal and chemical resistance properties
- Improved impact resistance
- Good PV and Load bearing capabilities



INDUSTRY USERS

- Petrochemical
- Offshore
- Railways
- Ship building
- Food and drink packaging
- Bottling and canning
- Pharmaceuticals
- Steel Mills
- Quarrying/mining
- Cranes
- Shoe manufacturing
- Conveyors



TYPICAL APPLICATIONS

- Seal rings
- Pipe clamps
- Thrust rollers
- Nozzles
- Bushes
- Sheaves/Pulleys
- Winches
- Diffts
- Bespoke Components

Nylacast Aquanyl 612 is available as standard plate, rod and thousands of tube OD/ID configurations in several different Lengths.



NYLACAST AQUANYL PA 612 C Copolymer

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Natural/Yellow	-	Natural/Yellow
Density	ISO 1183:1997	Test Method A	g/cm ³	1.14	lb/inchE3	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	1.8	%	1.8
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.15	%	0.15
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	5	%	5
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	74-78	psi	11.4k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3400-3700	psi	572k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>40	%	>40
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	95-120	psi	13.1k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2000-2200	psi	351k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	90-100	psi	13.9k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	2700-3000	psi	395k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	6.0-7.0	ft.lb/inE2	3.6
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.188	-	0.188
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	2.9X10E-5	-	1.4x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	80	Shore D	80
THERMAL						
Melting Temperature, Tg	-	-	°C	216	°F	421
Glass Transition Temperature	ISO 11359:1999	-	°C	63	°F	145
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	75	°F	174
Maximum/Minimum Continuous Service Temperatures	-	-	°C	100/-40	°F	212/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	160/-100	°F	320/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8x10E-5	°F _E -1	4.4x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.26	°F	0.16
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.04	-	0.04
Dielectric Strength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				NO		NO

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

NOTES

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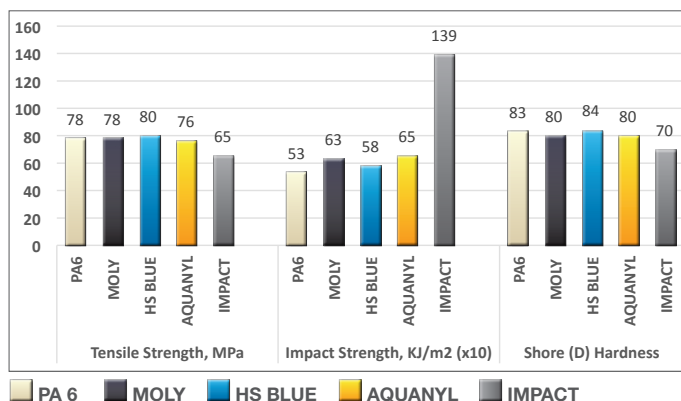
NYLACAST IMPACT

Impact is a grade specifically developed for applications requiring high impact resistance and/or noise reduction capabilities. The important characteristics of these materials are their improved insensitivity against stresses, sharp edges, notches, scratches etc. Impact is ideally suited to applications such as support rollers for the aggregate processing industry,

dollies used in conjunction with pile drivers and crane feet pads as well as roller coaster wheels in relation to noise reduction. However there are many industries and applications where this type of material would be very beneficial over the basic grade of Natural cast nylon.

BENEFITS OF NYLACAST IMPACT

- Significantly improved impact resistance
- Improved insensitivity against stresses, sharp edges, notches and scratches
- Free of internal stresses
- Good mechanical, thermal and chemical resistance properties
- Improved noise reduction capability
- Good PV and load bearing capabilities
- Good dimensional stability



INDUSTRY USERS

- Aerospace
- Railways
- Ship Building
- Food and drink packaging
- Bottling and canning
- Pharmaceuticals
- Steel Mills
- Quarrying/mining
- Cranes
- Conveyors



TYPICAL APPLICATIONS

- Rollers
- Wear pads
- Switch collar
- Washers
- Bearings
- Load support
- Wheels
- Sheaves
- Wear strips
- Clamps
- Bespoke Impact Ring

Nylacast Impact is available as standard plate, rod and thousands of tubes OD/ID configurations in several different lengths.



NYLACAST IMPACT

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Grey	-	Grey
Density	ISO 1183:1997	Test Method A	g/cm ³	1.11	lb/inchE3	0.04
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	1.7	%	1.7
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.18	%	0.18
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	5.3	%	5.3
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	60/70	psi	9.8k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3100-3400	psi	523k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	<10	%	<10
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	115-125	psi	14.1k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2300-2700	psi	408k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	92-95	psi	12.4k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	2300-2600	psi	340k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	13.9	ft.lb/inE2	7.7
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.195	-	0.195
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	3.5x10E-5	-	1.7x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	X	Shore D	X
THERMAL						
Melting Temperature, Tg	-	-	°C	219.5	°F	427
Glass Transition Temperature	ISO 11359:1999	-	°C	60	°F	140
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	72	°F	162
Maximum/Minimum Continuous Service Temperatures	-	-	°C	100/-40	°F	212/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	150/-100	°F	302/-120
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	5-8x10E-5	°F,E-1	4.7x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.26	°F	0.16
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.09	-	0.09
Dielectric Stength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				NO		NO

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

NOTES

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NYLACAST OILON

Oilon was a break through of the first magnitude in the world of cast nylons, developed in the early 70s by Nylacast and introduced to the market in 1974.

Oilon was the very first authentic lubricated Nylon, having a blended liquid lubricant system built in during the process stages, which obviously resulted in a substantial increase in bearing life, 5 times that of Natural cast nylon and 25 times that of phosphor bronze! The lubricant contained within the material will not drain, machine, spin, leech or dry out and never needs replenishment.

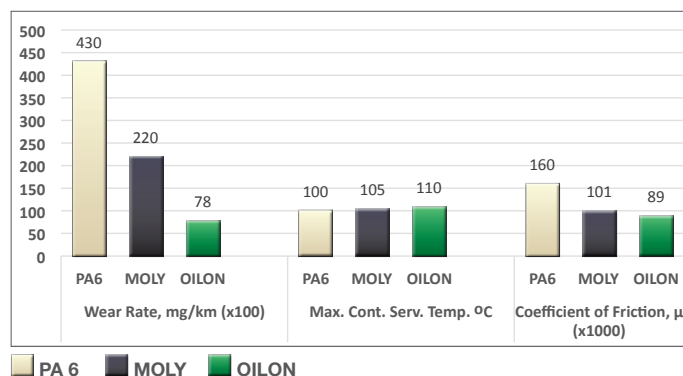
A uniformed distribution of the lubricant throughout the product guarantees a constant performance over the whole service life and improvements in rate of wear, sliding frictional properties,

abrasion resistance and stick slip performance are just a few of the benefits offered by this material. Oilon has been successful in considerably enlarging the application possibilities of nylons in many areas and specifically that of unlubricated moving parts. Oilon has acquired an unmatched track record over the past 40 years and continues to go from strength to strength, for Nylacast has over this period produced thousands of tons of Oilon and the trend continues.

There have been many imitators over the years since Oilon has been introduced, however, Oilon has not yet been equalled by its rivals and remains the premier oil-lubricated nylon available from any source. Oilon is suitable for use in applications in both the food and pharmaceutical industries.

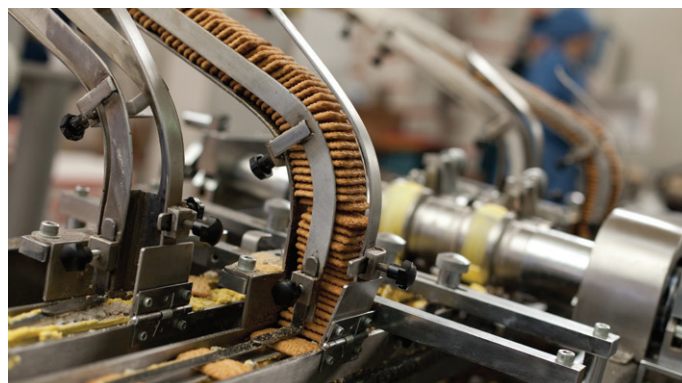
BENEFITS OF NYLACAST OILON

- First authentic lubricated nylon
- Improved wear and abrasion resistance
- Improved PV characteristics
- Improved coefficient of friction and stick/slip characteristics
- Consistent wear performance throughout product life
- Reduced water absorption
- Excellent mechanical, thermal and chemical resistance properties
- Good dimensional stability
- FDA compliant for direct food contact applications
- Blended liquid lubricant system



INDUSTRY USERS

- Petrochemical
- Construction
- Transport
- Food and drink packaging
- Bottling and canning
- Pharmaceuticals
- Steel mills
- Quarrying/mining
- Cranes
- Conveyors
- Offshore



TYPICAL APPLICATIONS

- Wear pads
- Support rails
- Sheaves
- Rollers
- Guide plates
- Bearings
- Spacers
- Pulleys
- Spacers
- Brake blocks
- Conveyor rail
- Pipe Clamps
- Gears
- Bushes
- Wear Strips
- Bespoke Components

Nylacast Oilon is available as standard plate, rod and over thousands of tubes OD/ID configurations in several different lengths.



NYLACAST OILON

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Green	-	Green
Density	ISO 1183:1997	Test Method A	g/cm ³	1.138	lb/inchE3	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2	%	2
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.2	%	0.2
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	6.1	%	6.1
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	74-78	psi	11.5k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3500-3700	psi	580k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	<30	%	<30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	110-120	psi	14.7k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2100-2500	psi	392k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	105-125	psi	15.3k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3300-3600	psi	478k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	5.0-6.5	ft.lb/inE2	2.9
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.089	-	0.089
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	2.2x10E-5	-	1.0x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	82	Shore D	82
THERMAL						
Melting Temperature, Tg	-	-	°C	222	°F	432
Glass Transition Temperature	ISO 11359:1999	-	°C	65	°F	149
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	75	°F	167
Maximum/Minimum Continuous Service Temperatures	-	-	°C	110/-40	°F	230/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	170/-100	°F	338/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8x10E-5	°F,E-1	4.4x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.25	°F	0.15
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.014	-	0.014
Dielectric Stength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				YES	YES	

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

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NYLACAST NYLUBE

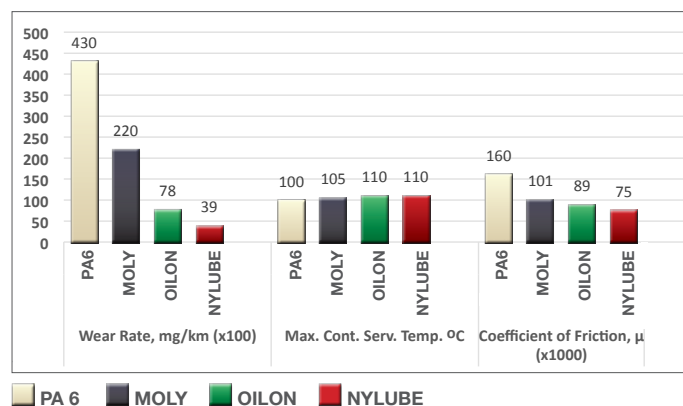
Nylube was introduced into the Nylacast product range in 1989 as a logical progression to Oilon with already outstanding performance as a bearing material. Since that time, it has proved to be Nylacast's supreme wear resisting grade and one of the most important developments from Nylacast in new materials. Nylube contains a combined liquid/solid lubricant system which allows for a coefficient of friction as low as 0.08. This is below that of almost any other polymer available at present.

Nylube has substantially improved the wear resistance abilities compared to that of any other currently available lubricated grade of cast nylon, whilst retaining excellent physical property characteristics. The material is particularly suited to dry running bearing applications throughout a wide load, speed and temperature range (up to 120°C).

Like Oilon, Nylube is suitable for use in applications in the food and pharmaceutical industries.

BENEFITS OF NYLACAST NYLUBE

- Outstanding wear and abrasion resistance
- Significantly improved PV characteristics
- Improved operating temperature capability
- Outstanding lubrication and low coefficient of friction
- Greatly improved stick/slip capabilities
- Wide load, speed and temperature operating range
- Consistent wear performance throughout product life
- Excellent dimensional stability
- Reduced water absorption
- Excellent chemical resistance
- Blended solid/liquid lubricant system
- FDA compliant for direct food contact applications



INDUSTRY USERS

- Construction
- Aerospace
- Transport
- Ship building
- Food and drink packaging
- Pharmaceuticals
- Steel mills
- Quarrying and mining
- Cranes
- Agriculture
- Recycling and waste management



TYPICAL APPLICATIONS

- Wear pads
- Stabilisers
- Stoppers
- Pulleys
- L-shape wear pads
- Sheaves
- Rollers
- Sliders
- Stoppers
- Bushes
- Slide pads
- Bearings
- Gears
- Winches
- Bespoke Components

Nylacast Nylube is available as standard plate, rod and over thousands of tubes OD/ID configurations in several different lengths.



NYLACAST NYLUBE

PROPERTY	TEST METHOD	NOTES	METRIC	UNITS	IMPERIAL	UNITS
GENERAL						
Colour	-	-	-	Dark Red	-	Dark Red
Density	ISO 1183:1997	Test Method A	g/cm ³	1.141	lb/inchE3	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2	%	2
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.2	%	0.2
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	5.9	%	5.9
MECHANICAL						
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	80-90	psi	12.8k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3600-4000	psi	596k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>30	%	>30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	105-125	psi	14.7k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2500-2700	psi	377k
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	115-125	psi	15.9k
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3350-3600	psi	486k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm ²	5.5-7.0	ft.lb/inE2	3.5
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.075	-	0.075
Limiting PV	-	-	MPa/m	100	psi.ft/min	2.9k
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m ³ /Nm	3.9x10E-6	-	1.9x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	83	Shore D	83
THERMAL						
Melting Temperature, Tg	-	-	°C	222	°F	433
Glass Transition Temperature	ISO 11359:1999	-	°C	65	°F	149
Heat Deflection Temperature, HDT/A	ISO 75	1.80MPa	°C	75	°F	167
Maximum/Minimum Continuous Service Temperatures	-	-	°C	110/-40	°F	230/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	180/-100	°F	356/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8x10E-5	°F _E -1	4.4x1E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/moC	0.25	°F	0.15
Flammability	IEC 60695-11-10:2003-08	-	-	HB	-	HB
ELECTRICAL						
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	-	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.013	-	0.013
Dielectric Strength	IEC 60243:-1:1998-01	-	kV/m	25	kV/in	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	ohm.m	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	ohm.m	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	CTI	600
FDA Compatibility						
				YES	YES	

PRODUCT AVAILABILITY

Rod	10mm-500mm DIA
Tube	50mm-1000mm OD
Plate	8mm-100mm THICKNESS
Custom Castings	Bespoke
Cut to size	Available upon request

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METRIC UNITS COMPARISON

PROPERTY	TEST METHOD	NOTES	METRIC	PA 6 Natural	Oilon	Nylube	Moly	Aquanyl	Impact	HS Blue
GENERAL				UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS
Colour	-	-	-	Natural, Black	Green	Dark Red	Black	Natural/Yellow	Grey	Blue
Density	ISO 1183:1997	Test Method A	g/cm³	1.141	1.138	1.141	1.15	1.14	1.11	1.135
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2.5	2	2	2.1	1.8	1.7	2.5
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.3	0.2	0.2	0.2	0.15	0.18	0.3
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	7	6.1	5.9	6.3	5	5.3	7
MECHANICAL										
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	75-80	74-78	80-90	75-80	74-78	60/70	75-85
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	MPa	3400-3600	3500-3700	3600-4000	3800-4000	3400-3700	3100-3400	3300-3700
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>20	<30	>30	>20	>40	<10	>30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	MPa	95-120	110-120	105-125	105	95-120	115-125	120-130
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	MPa	2100-2700	2100-2500	2500-2700	2500-2700	2000-2200	2300-2700	2600-2800
Flexural Strength	ISO 178:2001	1.5mm/min	MPa	105-125	105-125	115-125	100-110	90-100	92-95	100-120
Flexural Modulus	ISO 178:2001	1.5mm/min	MPa	3300-3600	3300-3600	3350-3600	3000-3200	2700-3000	2300-2600	3300-3500
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	kJ/mm²	4.5-6.0	5.0-6.5	5.5-7.0	5.5-7.0	6.0-7.0	13.9	5.0-6.5
Dynamic Coefficient of Friction	-	31.4m/min, 1.75MPa	-	0.16	0.089	0.075	0.101	0.188	0.195	0.15
Limiting PV	-	-	MPa/m	100	100	100	100	100	100	100
K-Factor (wear factor)	-	31.4m/min, 1.75MPa	m³/Nm	4.3x10E-5	2.2x10E-5	3.9x10E-6	2.2x10E-5	2.9x10E-5	3.5x10E-5	4.0x10E-5
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	83	82	83	80	80	X	84
THERMAL										
Melting Temperature, Tg	-	-	°C	223	222	222	221	216	219.5	223.7
Glass Transition Temperature	ISO 11359:1999	-	°C	65	65	65	68	63	60	66
Heat Deflection Temperature, HD7/A	ISO 75	1.80MPa	°C	75	75	75	80	75	72	74
Maximum/Minimum Continuous Service Temperatures	-	-	°C	100/-40	110/-40	110/-40	105/-40	100/-40	100/-40	115/-40
Maximum/Minimum Intermittent Service Temperatures	-	-	°C	170/-100	170/-100	180/-100	170/-100	160/-100	150/-100	180/-100
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	23-55°C	°C ⁻¹	8x10E-5	8x10E-5	8x10E-5	8.51E-05	8x10E-5	5-8x10E-5	8x10E-5
Thermal Conductivity	ISO 8301:1991	Mean T = 20°C	W/m°C	0.26	0.25	0.25	0.28	0.26	0.26	0.26
Flammability	IEC 60695-11-10:2003-08	-	-	HB	HB	HB	HB	HB	HB	HB
ELECTRICAL										
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.02	0.014	0.013	0.11	0.04	0.09	0.014
Dielectric Strength	IEC 60243-1:1998-01	-	kV/m	25	25	25	25	25	25	25
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E13	>1x10E13	>1x10E13	>1x10E13	>1x10E13	>1x10E13	>1x10E13
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	>1x10E12	>1x10E12	>1x10E12	>1x10E12	>1x10E12	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	600	600	600	600	600	600
FDA Compatibility										
				YES	YES	YES	NO	NO	NO	NO

IMPERIAL UNITS COMPARISON

PROPERTY	TEST METHOD	NOTES	IMPERIAL	PA 6 Natural	Oilon	Nylube	Moly	Aquanyl	Impact	HS Blue
GENERAL				UNITS	UNITS	UNITS	UNITS	UNITS	UNITS	UNITS
Colour	-	-	-	Natural, Black	Green	Dark Red	Black	Natural/Yellow	Grey	Blue
Density	ISO 1183:1997	Test Method A	lb/inchE3	0.042	0.041	0.041	0.041	0.041	0.04	0.041
Moisture Absorption (Equilibrium)	ISO 62:1999 (modified)	50% RH, 23°C	%	2.5	2	2	2.1	1.8	1.7	2.5
Water Absorption @24 hrs	ISO 62:1999 (modified)	Immersion @ 23°C	%	0.3	0.2	0.2	0.2	0.15	0.18	0.3
Water Absorption @24 hrs Saturation	ISO 62:1999	Immersion @ 23°C	%	7	6.1	5.9	6.3	5	5.3	7
MECHANICAL										
Tensile Strength at Yield	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	psi	11.6k	11.5k	12.8k	11.7k	11.4k	9.8k	12.0k
E-modulus	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	psi	580k	580k	596k	629k	572k	523k	560k
Elongation at Break	ISO 527-1/2:1993	Sample Type 1B, 50mm/min	%	>20	<30	>30	>20	>40	<10	>30
Compressive Strength	ISO 604:2002	Sample Type B, 5mm/min	psi	13.8k	14.7k	14.7k	15.3k	13.1k	14.1k	16.0k
Compressive Modulus	ISO 604:2002	Sample Type A, 1mm/min	psi	392k	392k	377k	348k	351k	408k	441k
Flexural Strength	ISO 178:2001	1.5mm/min	psi	15.3k	15.3k	15.9k	13.8k	13.9k	12.4k	14.6k
Flexural Modulus	ISO 178:2001	1.5mm/min	psi	478k	478k	486k	430k	395k	340k	472k
Izod Impact Strength	ISO 180:2000	Sample Type A (notched)	ft.lbf/inE2	2.9	2.9	3.5	3.5	3.6	7.7	3.2
Dynamic Coefficient of Friction	-	103ft.min/253psi	-	0.16	0.089	0.075	0.101	0.188	0.195	0.15
Limiting PV	-	-	psi.ft/min	2.9k	2.9k	2.9k	2.9k	2.9k	2.9k	2.9k
K-Factor (wear factor)	-	103ft.min/253psi	-	2.4x10E4	1.0x10E4	1.9x10E4	1.1x10E4	1.4x10E4	1.7x10E4	2.0x10E4
Hardness (Shore D)	ISO 868: 2003	Scale D	Shore D	83	82	83	80	80	X	84
THERMAL										
Melting Temperature, Tg	-	-	°F	433	432	433	430	421	427	435
Glass Transition Temperature	ISO 11359:1999	-	°F	149	149	149	154	145	140	167
Heat Deflection Temperature, HDT/A	ISO 75	26psi	°F	167	167	167	176	174	162	165
Maximum/Minimum Continuous Service Temperatures	-	-	°F	212/-40	230/-40	230/-40	221/-40	212/-40	212/-40	239/-40
Maximum/Minimum Intermittent Service Temperatures	-	500hrs	°F	338/-148	338/-148	356/-148	338/-148	320/-148	302/-120	356/-148
Coefficient of Linear Thermal Expansion	ISO 11359-2:1999	73-131F	°F/E-1	4.4x10E-5	4.4x10E-5	4.4x1-E-5	4.7x10E-5	4.4x10E-5	4.7x10E-5	4.4x10E-5
Thermal Conductivity	ISO 8301:1991	Mean 680F; BTU/in/ft.hr.°F	°F	0.15	0.15	0.15	0.17	0.16	0.16	0.16
Flammability	IEC 60695-11-10:2003-08	-	-	HB	HB	HB	HB	HB	HB	HB
ELECTRICAL										
Dielectric Constant	IEC 60250:1969-01	1 & 100 Hz	-	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4	3.7 & 4
Dissipation Factor	IEC 60250:1969-01	100 Hz	-	0.02	0.014	0.013	0.11	0.04	0.09	0.014
Dielectric Strength	IEC 60243-1:1998-01	-	kV/in	635	635	635	635	635	635	635
Volume Resistivity	IEC 60093:1980-01	-	ohm.m	4x10E14	4x10E14	4x10E14	4x10E14	4x10E14	4x10E14	4x10E14
Surface Resistivity	IEC 60093:1980-01	-	ohm.m	>1x10E12	>1x10E12	>1x10E12	>1x10E12	>1x10E12	>1x10E12	>1x10E12
Comparative Tracking Index	IEC 60112:2003-01	-	CTI	600	600	600	600	600	600	600
FDA Compatibility										
			YES	YES	YES	YES	NO	NO	NO	NO

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