NYTEF PLASTICS

Philadelphia • West Palm Beach • Chicago • Los Angeles • Fachbach, Germany

UNIPA® Extruded Nylon 6/6

Since its introduction in 1938, Nylon has become one of the world's most widely recognized and utilized engineering grade thermoplastics. Nylon's unique combination of high strength and toughness, outstanding chemical resistance, and excellent wear and abrasion resistance have made it the material of choice for product designs in a multitude of industries. When used to replace wear grade metals like brass and bronze, no other material provides the combination of extended wear life, light weight, and low fabricated part cost of Nylon. Nytef Plastic's UNIPA Nylon 6/6 stock shapes are available in a wide range of grades—including both lubricated, heat stabilized, and fiber reinforced products. UNIPA Nylon 6/6 materials are offered by Nytef Plastics in a complete range of extruded round, square, and hex rod, heavy gauge plate, and tubular bar sizes.

UNIPA NYLON 6/6 ATTRIBUTES

- 210°F continuous use temperature
- High strength and stiffness
- Excellent toughness
- Superior wear and abrasion resistance
- Outstanding resistance to chemical attack
- Easily machined and fabricated

EXTRUDED NYLON 6/6 PRODUCTS

UNIPA Nylon 6/6 – Unfilled Nylon 6/6 – natural and black colors

- 210°F continuous use temperature

UNIPA Ld – Molybdenum Disulfide (MoS_2) filled Nylon 6/6

- Improved wear resistance
- Mottled gray/black color

UNIPA lm – Nylon 6/12

- High impact resistance
- Low moisture absorption

UNIPA im – Zytel® ST801 – "Super Tough" Nylon

- Premium impact resistance

UNIPA Rg – 30% Glass fiber filled Nylon 6/6

- Improved strength and stiffness

UNIPA Rk – Kevlar® Aramid fiber filled Nylon 6/6

- Best wear resistance of any nylon product
- Improved strength and stiffness

TYPICAL INDUSTRIES

- Food and dairy processing
- Paper manufacturing
- Material handling
- Automotive
- Fluid handling
- Textile production
- Electronics manufacturing
- Mining
- Construction

SAMPLE APPLICATIONS

- Pistons and valves
- Rollers and wheels
- Manifolds
- Electrical components
- Food product forming dies
- Bushings and bearings
- Sheaves and pulleys
- Gears, sprockets, and star wheels
- Feed and timing screws
- Pump components
- Scraper blades
- Wear pads and wear strips

Nytef Plastics, Ltd. is dedicated to supplying our customers with the highest quality thermoplastic stock shapes for machining. We manufacture and stock a full line of thermoplastic materials in a wide variety of rod, plate and tubular bar sizes. In addition, we offer over 35 years of experience in the custom extrusion of application-specific and proprietary resins to meet even the most demanding performance requirements. Nytef Plastics offers full technical support for all products and is certified to ISO 9002 standards for the manufacture of extruded plastics stock shapes.

UNIPA® EXTRUDED NYLON 6/6

Property	Test Method	Units	UNIPA	UNIPA Ld	UNIPA Im	UNIPA im	UNIPA Rg	UNIPA Rk
			Unfilled Nylon 6/6	MoS_2 Filled Nylon 6/6	Nylon 6/12	Zytel® ST801	30% Glass Fiber Filled Nylon 6/6	Kevlar® Fiber Filled Nylon 6/6
Mechanical								
Specific Gravity	ASTM-D792	---	1.14	1.16	1.06	1.08	1.35	1.18
Tensile Strength	ASTM-D638	psi	11,500	11,800	8,000	7,500	13,400	14,750
Tensile Elongation	ASTM-D638	%	60	50	200	60	4-6	4-5
Tensile Modulus of Elasticity	ASTM-D638	psi	410,000	500,000	325,000		550,000	
Flexural Strength	ASTM-D790	psi	14,500	15,000	14,000		19,000	19,000
Flexural Modulus of Elasticity	ASTM-D790	psi	410,000	480,000	300,000	245,000	650,000	615,000
Compressive Strength	ASTM-D695	psi	13,000	16,000	15,500		20,000	
Izod Notched Impact	ASTM-D256	ft.-lb./in.	1.4	0.8	1.2	17.0	1.2	1.0
Rockwell Hardness	ASTM-D785	M or R scale	M80(R121)	M85(R115)	R108	R112	M101	
Thermal								
Coef. of Linear Thermal Expansion	ASTM-D696	in./in./°F	4.0×10^{-5}	4.0×10^{-5}	5.0×10^{-5}	6.7×10^{-5}	1.2×10^{-5}	5.0×10^{-5}
Max. Continuous Use Temp.	Nytef std.	°F	210	210	200	210	210	210
Heat Deflection Temp. @ 264 psi	ASTM-D648	°F	200	210	149	160	460	450
Melting Point	ASTM D3418	°F	504	495	423	504	504	504
Electrical								
Dielectric Strength-Short Term	ASTM-D149	volts/mil	400	350			530	350
Dielectric Constant @ 60 Hz	ASTM-D150		5.0		6.0	3.2	3.5	4.0
Dielectric Constant @ 10^6 Hz	ASTM-D150		3.6		4.0	2.9	3.7	3.4
Dissipation Factor @ 60 Hz	ASTM-D150		0.01		0.015	0.01	0.014	0.01
Volume Resistivity	ASTM-D257	ohm-cm	10^{15}	10^{13}	10^{13}	10^{14}	10^{15}	10^{15}
Miscellaneous								
Water Absorption/24 hrs.	ASTM-D570	% weight	1.2	0.7	0.25	1.2	0.7	1.0
Water Absorption @ Saturation	ASTM-D570	% weight	8.5	6.5	3.0	6.7	5.4	8.0
Flammability	UL-94		V-2	V-2	HB	HB	HB	HB
Dynamic Coefficient of Friction			0.25	0.23	0.30	0.29	0.31	0.30
Agency Compliance								
FDA			Yes	No	No	No	No	No
USDA			Yes	No	No	No	No	No
NSF			Yes	No	No	No	No	No

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