



Nylon® Shapes - Property Comparison

Property	Test Method	Units	Unfilled	MoS ₂ Filled Nylon 6/6	Nylon 6/12	Zytel® ST801	30% Glass Fiber Filled Nylon 6/6	Kevlar® Fiber Filled Nylon 6/6
			Nylon 6/6					
Mechanical								
Specific Gravity	ASTM-D792	---	1.14	1.16	1.06	1.08	1.25	1.18
Tensile Strength	ASTM-D638	psi	11,500	11,800	8,000	7,500	18,300	14,750
Tensile Elongation	ASTM-D638	%	60	50	200	60	4-6	4-6
Tensile Modulus of Elasticity	ASTM-D638	psi	410,000	500,000	325,000		1,200,000	
Flexural Strength	ASTM-D790	psi	14,500	15,000	14,000		27,000	19,000
Flexural Modulus of Elasticity	ASTM-D790	psi	410,000	480,000	300,000	245,000	950,000	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	2.3	1
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 x 10 ⁻⁵	4.0 x 10 ⁻⁵	5.0 x 10 ⁻⁵	6.7 x 10 ⁻⁵	1.2 x 10 ⁻⁵	5.0 x 10 ⁻⁵
Max. Continuous Use Temp.	Nytec 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



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Electrical

Dielectric Strength-Short Term	ASTM-D149	volts/mil	400	350			530	350
Dielectric Constant @ 60 Hz	ASTM-D150		5	3.7	6	3.2	3.5	4
Dielectric Constant @ 10 ⁶ Hz	ASTM-D150		3.6		4	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	1015	1013	1013	1014	1015	1015

Miscellaneous

Water Absorption/24 hrs.	ASTM-D570	% weight	1.2	0.7	0.25	1.2	0.7	1
Water Absorption @ Saturation	ASTM-D570	% weight	8.5	6.5	3	6.7	5.4	8
Flammability	UL-94		V-2	V-2	HB	HB	HB	HB
Dynamic Coefficient of Friction			0.25	0.23	0.3	0.29	0.31	0.3

Agency Approvals

FDA/USDA			Yes	No	No	No	No	Yes
NSF			Yes	No	No	No	No	No
3-A Dairy			Yes	No	No	No	No	No

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