

## NYLON MATERIALS

NYLATRON - ZYTEL - MC901

		Units	ASTM Test Method	Polyenco Nylon 101	Nylatron GS Filled Nylon	Nylatron NS Filled Nylon	Nylatron GSM Nylon	Nylatron GSM-Blue Nylon	Nylatron NSM Nylon	MC 901 Blue Nylon	MC 904 Blue Nylon	MC 907 Natural Nylon	ST801 Nylon	Hydlar ZF Nylon	30% Glass-Filled Black Nylon	
				Type 6/6 Polyamide	MoSc Filled Type 6/6 Polyamide	Lubricated Type 6/6 Polyamide	MoS2 Filled Type 6 Polyamide	Lubricated Type 6 Polyamide	Lubricated Type 6 Polyamide	Monocast Heat Stabilized Type 6 Polyamide	Plasticized Heat Stabilized Type 6 Polyamide	Monocast FDA Type 6 Polyamide	Impact Modified Type 6/6 Polyamide	Aramid Filled Type 6/6 Polyamide	30% Glass Filled Black Type 6/6 Polyamide	
MECHANICAL	1	Strength to Weight Ratio	ksi	-	10.0	10.8	8.9	9.1	8.7	9.6	10.4	8.3	10.4	5.6	14.5	9.8
	2	Specific Gravity @ 73 F	-	D792	1.15	1.16	1.18	1.16	1.15	1.15	1.15	1.15	1.15	1.08	1.19	1.36
	3	Tensile Strength @73 F, (ult/yld)	psi	D638	11500 (ult)	12500 (ult)	10500 (ult)	10500 (ult)	10000 (ult)	11000 (ult)	12000 (ult)	9500 (ult)	12000 (ult)	6000 (yld)	17300 (yld)	13388 (ult)
	4	Tensile Modulus of Elasticity @ 73 F	psi	D638	425000	480000	410000	400000	500000	410000	400000	275000	400000	-	802000	654620
	5	Tensile Elongation at Break @ 73 F	%	D638	50	25	10	30	35	20	20	50	20	210	4	7
	6	Flexural Strength @73 F	psi	D790	15000	17000	14000	16000	15000	16000	16000	-	16000	-	21300	20550
	7	Flexural Modulus of Elasticity @ 73 F	psi	D790	450000	460000	400000	500000	500000	475000	500000	-	500000	245000	664000	723500
	8	Shear Strength @ 73 F	psi	D732	10000	10500	9000	10500	-	10000	11000	-	11000	8400	-	-
	9	Compressive Strength, (%Deformation) @ 73 F	psi	D695	12500 (10)	16000 (10)	12000 (10)	14000 (10)	13000 (10)	14000 (10)	15000 (10)	-	15000 (10)	-	19300 (10)	18070 (10)
	10	Compressive Modulus of Elasticity @ 73 F	psi	D695	420000	420000	400000	400000	425000	400000	400000	-	400000	-	-	589800
	11	Hardness, Rockwell, Scale as noted @ 73 F	-	D785	M85 (R115)	M85 (R115)	M85 (R115)	M80 (R110)	M80 (R110)	M80 (R110)	M85 (R115)	M70	M85 (R115)	(R112)	M80 (R121)	M65 (R121)
	12	Hardness, Durometer, Shore D @ 73 F	-	D2240	D80	D85	D85	D85	-	D85	D85	D85	D85	-	-	-
	13	Izod Impact, (Notched) @ 73 F	ft-lb/in of notch	D256 TypeA	0.6	0.5	0.4	0.5	0.9	0.5	0.4	-	0.4	17.0	1.2	2.3
	14	Coefficient of Friction, (Dry vs. Steel) Dynamic	-	-	0.25	0.20	0.16	0.20	0.18	0.18	0.20	-	0.20	0.28	0.32	-
	15	Limiting PV, with 4 to 1 factor of safety applied	psi-ft/min	-	2700	3000	10000	3000	5500	15000	3000	-	3000	-	-	-
THERMAL	16	Coefficient of Linear Thermal Expansion @ 73 F	in/in/F	E-831 (TMA)	5.5E-05	4.0E-05	5.5E-05	3.5E-05	5.9E-05	5.0E-05	3.5E-05	3.5E-05	3.5E-05	6.7E-05	3.5E-05	1.7E-05
	17	Heat Deflection Temperature @ 264 psi	F	D648	200	200	200	200	-	200	200	200	200	160	-	413
	18	Tg-Glass transition temperature, (Amorphous)	F	D3418	-	-	-	-	-	-	-	-	-	-	-	-
	19	Melting Point, (VS= Vicat Softening Temp.)	F	D3418	500	500	500	420	420	420	420	420	420	491	491	420
	20	Continuous Service Temperature in Air, (Max.)	F	-	210	220	220	200	200	200	260	-	200	-	300	-
21	Thermal Conductivity	BTU-in/hr-ft <sup>2</sup> F	-	1.70	1.70	-	-	-	-	1.70	-	1.70	-	-	-	
ELECTRICAL	22	Dielectric Strength, Short Term	Volts/ mil	D149	400	350	350	400	-	400	500	-	500	-	350	-
	23	Volume Resistivity	ohm-cm	D257	>E13	>E13	>E13	>E13	>E13	>E13	>E13	>E13	>E13	>E13	>E13	>E13
	24	Dielectric Constant @ 10E6Hz	-	D150	3.6	-	-	3.7	-	-	3.7	-	3.7	2.9	3.4	-
	25	Dissipation Factor @ 10E6Hz	-	D150	0.020	-	-	-	-	-	-	-	-	0.020	0.010	-
H2O	26	Flammability @ 3.1 mm unless noted	-	UL94	V-2	V-2	HB	HB	HB	HB	HB	HB	HB	HB (.81mm)	-	-
	27	Water Absorbtion, Immersion, 24 Hrs.	% by wt	D570(7)	0.30	0.30	0.30	0.30	0.22	0.25	0.30	0.30	0.30	1.20	1.20	-
	28	Water Absorbtion, Saturation	% by wt	D570(7)	7.00	7.00	7.00	7.00	-	7.00	7.00	7.00	7.00	6.70	8.50	-