

Nylon Specs

				POLYPENCO	NYLATRON GS FILLED NYLON	NYLATRON NS FILLED NYLON	NYLATRON GSM NYLON	NYLATRON GSM-BLUE NYLON	NYLATRON NSM NYLON	MC 901 BLUE NYLON	MC 984 BLUE NYLON	MC 907 NATURAL NYLON	ST881 NYLON	HYDLAR ZF NYLON	HYDLAR ZF NYLON	
		Units	ASTM Test Method	Type 6/6 Polyamide	M082 FILLED TYPE 6/6 POLYAMIDE	LUBRICATED TYPE 6/6 POLYAMIDE	M082 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 NYLON	
MECHANICAL	Strength to Weight Ratio	ksi														
	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	
	Tensile Strength @73 F (ult)(yld)	psi	D638	11500 (ult)	12500 (ult)	10500(ult)	10500(ult)	10000(ult)	11000(ult)	11000(ult)	9500(ult)	12000(ult)	6000(yld)	17300(yld)	13388(ult)	
	Tensile Modulus of Elasticity @ 73 F	psi	D638	425000	480000	410000	400000	500000	410000	400000	275000	400000		802000	654620	
	Tensile Elongation at Break @ 73 F	%	D638	50	25	10	30	35	20	20	50	20	210	4	7	
	Flexural Strength @ 73 F	psi	D790	15000	17000	14000	16000	15000	16000	16000	16000		16000	21300	20550	
	Flexural Modulus of Elasticity @ 73 F	psi	D790	45000	460000	400000	500000	500000	475000	500000			500000	245000	664000	723500
	Shear Strength @ 73 F	psi	D732	10000	10500	9000	10500	-	10000	11000			11000	8400		
	Compressive Strength, (% Deformation) @73 F	psi	D695	12500(10)	160000(10)	12000(10)	14000(10)	13000(10)	14000(10)	15000(10)			15000(10)		19300(10)	18070(10)
	Compressive Modulus of Elasticity @73 F	psi	D695	420000	420000	400000	400000	425000	400000	400000			400000			
	Hardness, Rockwell, Scale as noted @73 F		D785	M85(R115)	M85(R115)	M85(R115)	M80(R110)	M80(R117)	M80(R115)	M85(R115)	M70		M85(R115)	(R112)	M80(R121)	M65(R121)
	Hardness, Durometer, Shore D @73 F		D2240	D80	D85	D85	D85	-	D85	D85	D85	D85	D85			
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	
Coefficient of Friction, (Dry vs. Steel) Dynamic			0.25	0.20	0.16	0.20	0.18	.078	0.20			0.20	0.28	0.32		
Limiting PV, (with 4 to 1 factor of safety applied)	psi-ft/min		2700	3000	10000	3000	3800	12300	3000			3000				
THERMAL	Coefficient of Linear Thermal Expansion @73 F	in/in/F	E-831 (TMA)	5.5E-05	4.0E-05	5.5E-05	5.0E-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	
	Heat Deflection Temperature @ 264 psi	F	D648	200	200	200	200		200	200	200	200	160		413	
	Tg-Glass transition temperature, (Amorphous)	F	D3418												420	
	Melting Point, (VS=Vicat Softening Temp.)	F	D3418	500	500	500	420	420	420	420	420	420	491	491		
	Continuous Service Temperature in Air, (Max.)	F		210	220	220	200	200	200	260		200		300		
Thermal Conductivity	BTU-in/hr-ft ² -F		1.7	1.7												
ELECTRICAL	Dielectric Strength, Short Term	Volts/mil	D149	400	350	350	400		400	500		500		350		
	Volume Resistivity	ohm-cm	D257	4.5E+13	2.5E+13	2.5E+13	2.5E+13		2.5E+13	2.5E+13		2.5E+13	1.0E+14	1.0E+15		
	Dielectric Constant @ 10E6 Hz		D150	3.6			3.7			3.7	3.7	3.7	2.9	3.4		
	Dissipation Factor @ 10E6 Hz		D150	0.020									0.020	0.010		
	Flammability @ 3.1 mm unless noted		UL94	V-2	V-2	HB	HB	HB	HB	HB	HB	HB	HB	HB(0.81mm)		
H₂O	Water Absorption, 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		
	Water Absorption, Saturation	% by wt.	D570(7)	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	6.70	8.50		