

CAST NYLON 6									
		Metric			English			Comments	
Physical Properties		1.15 g/cc			0.0415 lb/in ³			ASTM D792	
Water Absorption		0.60%			0.60%			Immersion, 24hr;	
Water Absorption at Saturation		7%			7%			Immersion; ASTM	
								ASTM D570(2)	
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Mechanical Properties									
Hardness, Rockwell M		85			85			ASTM D785	
Hardness, Rockwell R		115			115			ASTM D785	
Hardness, Shore D		85			85			ASTM D2240	
Tensile Strength, Ultimate		82.7 MPa			12000 psi			ASTM D638	
Elongation at Break		20%			20%			ASTM D638	
Tensile Modulus		2.76 GPa			400 ksi			ASTM D638	
Flexural Modulus		3.45 GPa			500 ksi			ASTM D790	
Flexural Yield Strength		110 MPa			16000 psi			ASTM D790	
Compressive Strength		103 MPa			15000 psi			10% Def.; ASTM	
								D695	
Compressive Modulus		2.76 GPa			400 ksi			ASTM D695	
Shear Strength		75.8 MPa			11000 psi			ASTM D732	
Coefficient of Friction		0.2			0.2			Dry vs. Steel;	
								QTM55007	
K (wear) Factor		201 x 10 ⁻⁸ mm ³ /in ³ -min/ft-lb-hr			QTM 55010				
Limiting Pressure Velocity		0.105 MPa-m/sec			3000 psi-ft/min			4:1 safety factor;	
								QTM 55007	
Izod Impact, Notched		0.214 J/cm			0.4 ft-lb/in			ASTM D256 Type	
								A	
Electrical Properties									
Surface Resistivity per Square		Min 1e+013 ohm			Min 1e+013 ohm			EOS/ESD S11.11	
Dielectric Constant		3.7			3.7			1MHz; ASTM D150	
Dielectric Strength		19.7 kV/mm			500 V/mil			Short Term; ASTM	
								D149	
Thermal Properties									
CTE, linear 68°F		90 µm/m-°C			50 µin/in-°F			(-40°F to 300°F);	
								ASTM E831	
Thermal Conductivity		0.245 W/m-K			1.7 BTU-in/hr-ft			ASTM F433	
Melting Point		216 °C			420 °F			Crystalline, Peak;	
								ASTM D3418	
Maximum Service Temperature, 93.3 °C		200 °F			200 °F			Long Term	
Deflection Temp, 93.3 °C		200 °F			ASTM D648				
Flammability, UL94 (Estimated FHB)					HB			1/8 inch	
Qualitative Processing Properties									
Compliance - FDA		Compliant							
Machinability		1						1-10, 1=Easier to Machine	
Service in Alcohols		Limited							
Service in Aliphatic Hydrocarbons		Acceptable							
Service in Aromatic Hydrocarbons		Acceptable							
Service in Chlorinated Solvents		Limited							
Service in Ethers		Acceptable							
Service in Ketones		Acceptable							
Service in Strong Acids		Unacceptable							
Service in Strong Alkalies		Unacceptable							
Service in Sunlight		Limited							
Service in Weak Acids		Limited							
Service in Weak Alkalies		Limited							
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