

UHMW										
			Metric		English	Comments				
Physical Properties			0.93 g/cc		0.0336 lb/in <sup>3</sup>	ASTM D792				
Water Absorption			Max 0.01 %		Max 0.01 %	Immersion, 24hr; ASTM				
Water Absorption at Saturation			Max 0.01 %		Max 0.01 %	Immersion; ASTM D570(2)				
Mechanical Properties										
Hardness, Shore D				66		66	ASTM D2240			
Tensile Strength, Ultimate			40 MPa		5800 psi	ASTM D638				
Elongation at Break				300%		300%	ASTM D638			
Tensile Modulus			0.689 GPa		100 ksi	ASTM D638				
Flexural Modulus			0.758 GPa		110 ksi	ASTM D790				
Flexural Yield Strength			24.1 MPa		3500 psi	ASTM D790				
Compressive Strength			20.7 MPa		3000 psi	10% Def., 73°F; ASTM				
Compressive Modulus			0.552 GPa		80 ksi	ASTM D695				
Shear Strength				33.1 MPa		4800 psi	ASTM D732			
Coefficient of Friction			0.12		0.12	Dry vs. Steel; QTM55007				
Limiting Pressure Velocity			0.0701 MPa-m/	2000 psi-ft/min	4:1 safety factor; QTM					55007
Izod Impact, Notched				NB		NB	ASTM D256 Type A			
Electrical Properties										
Surface Resistivity per Square			Min 1e+015 ohm		Min 1e+015 ohm	ASTM D257				
Dielectric Constant				2.3		2.3	(1MHz); ASTM D150			
Dielectric Strength			90.6 kV/mm		2300 V/mil	Short Term; ASTM D149				
Dissipation Factor			0.0005		0.0005	(1MHz); ASTM D150				
Thermal Properties										
CTE, linear 68°F			216 μm/m-°C		120 μin/in-°F	(-40°F to 300°F); ASTM				
Thermal Conductivity			0.409 W/m-K		2.84 BTU-in/hr-ft <sup>2</sup> -°F	E831				
Melting Point				135 °C		275 °F	Crystalline, Peak; ASTM D3418			
Maximum Service Temperature, 82.2 °C				180 °F		Long Term				
Deflection Temp, 46.7 °C			116 °F			ASTM D648				
Flammability, UL94 (Estimated FHB)				HB		1/8 inch				
Qualitative Processing Properties										
Compliance - FDA			Compliant							
Machinability				3		1-10, 1=Easier to Machine				
Service in Alcohols			Acceptable							
Service in Aliphatic Hydrocarbons			Acceptable							
Service in Aromatic Hydrocarbons			Unacceptable							
Service in Chlorinated Solvents			Acceptable							
Service in Ethers			Limited							
Service in Ketones			Limited							
Service in Strong Acids			Limited							
Service in Strong Alkalies			Acceptable							
Service in Sunlight			Limited							
Service in Weak Acids			Acceptable							
Service in Weak Alkalies			Acceptable							
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