

ULTEM 1000									
Physical Properties									
		Metric		English		Comments			
Specific Gravity		1.28 g/cc		0.0462 lb/in ³	ASTM D792				
Water Absorption		0.25%		0.25%		Immersion,			24hr; ASTM D570(2)
Water Absorption at Saturation	1.25%			1.25%		Immersion;			ASTM D570(2)
Mechanical Properties									
Hardness, Rockwell M		112		112		ASTM D785			
Hardness, Rockwell R		125		125		ASTM D785			
Hardness, Shore D		86		86		ASTM D2240			
Tensile Strength, Ultimate	114 MPa		16500 psi		ASTM D638				
Elongation at Break		80%		80%		ASTM D638			
Tensile Modulus		3.45 GPa		500 ksi	ASTM D638				
Flexural Modulus		3.45 GPa		500 ksi	ASTM D790				
Flexural Yield Strength	138 MPa		20000 psi		ASTM D790				
Compressive Strength		152 MPa		22000 psi		10% Def.;			ASTM D695
Compressive Modulus		3.31 GPa		480 ksi		ASTM D695			
Shear Strength			103 MPa		15000 psi		ASTM D732		
Coefficient of Friction		0.42		0.42			Dry vs. Steel;		QTM55007
K (wear) Factor		5840x10 ⁻⁸ mm ³ /in ² -min/ft-lb-hr							QTM 55010
Limiting Pressure Velocity	0.0657 MPa-m/sec		1875 psi-ft/min		4:1 safety				factor; QTM 55007
Izod Impact, Notched		0.267 J/cm		0.5 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		3.15		3.15			1MHz; ASTM		D150
Dielectric Strength		32.7 kV/mm		830 V/mil		Short Term;			ASTM D149
Dissipation Factor		0.0013		0.0013			1MHz; ASTM		D150
Thermal Properties									
CTE, linear 68°F		55.8 μm/m-°C		31 μin/in-°F		(-40°F to			300°F); ASTM E831
Thermal Conductivity		0.122 W/m-K		0.85 BTU-in/hr-°F	ASTM F433				
Maximum Service Temperature, 171 °C				340 °F	Long Term				
Deflection Temp; 204 °C 400 °F					ASTM D648				
Glass Temperature 210 °C 410 °F					ASTM D3418				
Flammability, UL94 (Estimated FV-0)				V-0			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		Limited							
Service in Aromatic Hydrocarbons		Unacceptable							
Service in Chlorinated Solvents		Unacceptable							
Service in Ethers		Acceptable							
Service in Ketones		Unacceptable							
Service in Strong Acids		Unacceptable							
Service in Strong Alkalies		Unacceptable							
Service in Sunlight		Acceptable							
Service in Weak Acids		Acceptable							
Service in Weak Alkalies		Acceptable							
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