



Duratron U1000 PEI (Ultem)

Polyetherimide, unfilled, extruded 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	117 MPa	17000 psi	ASTM D638
Elongation at Break	60 %	60 %	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	5840 x 10 ⁻⁸ mm ³ /N-M	2900 x 10 ⁻¹⁰ in ³ -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	0.177 W/m-K	1.23 BTU-in/hr-ft ² -°F	ASTM F433
Maximum Service Temperature, Air	171 °C	340 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	204 °C	400 °F	ASTM D648
Glass Temperature	210 °C	410 °F	ASTM D3418
Flammability, UL94 (Estimated Rating)	V-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		

All statements, technical information and recommendations contained in this database are presented in good faith, based upon tests believed to be reliable and practical field experience. The reader is cautioned, however, that Quadrant EPP and Automation Creations, Inc. cannot guarantee the accuracy or completeness of this information, and it is the customer's responsibility to determine the suitability of Quadrant EPP's products in any given application.