Duratron® U1000

Polyether Imide

Quadrant Engineering Plastic Products

Message:

Duratron® U1000 polyetherimide is an amorphous, high-performance polymer with exceptional flame and heat resistance. It performs continuously to 340°F (171°C), making it ideal for high strength/high heat applications, and those requiring consistent dielectric properties over a wide frequency range. It is hydrolysis resistant, highly resistant to acidic solutions and capable of withstanding multiple autoclaving cycles.
Duratron® 1000 is FDA and USP Class VI compliant. FDA compliant colors of Duratron® PEI are also available on a custom basis. Duratron® PEI commonly is machined into parts for reusable medical devices, analytical instrumentation, electrical/electronic insulators and a variety of structural components requiring high strength and rigidity at elevated temperatures.
Data provided by Quadrant Engineering Plastic Products from tests on stock shapes and parts produced by Quadrant EPP.

General Information			
Features	Acid Resistant Alcohol Resistant Autoclavable Flame Retardant High Heat Resistance High Rigidity High Strength Hydrolysis Resistant		
Uses	Electrical/Electronic Applications Insulation Medical/Healthcare Applications Structural Parts		
Agency Ratings	FDA Unspecified Rating USP Class VI		
Processing Method	Extrusion		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity	1.28	g/cm³	ASTM D792
Water Absorption			ASTM D570
24 hr	0.25	%	
Saturation	1.3	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ASTM D785
M-Scale	112		
R-Scale	125		
Durometer Hardness (Shore D)	86		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**

Tensile Modulus	3450	MPa	ASTM D638
Tensile Strength (Ultimate)	117	MPa	ASTM D638
Tensile Elongation (Break)	60	%	ASTM D638
Flexural Modulus	3450	MPa	ASTM D790
Flexural Strength (Yield)	138	MPa	ASTM D790
Compressive Modulus	3310	MPa	ASTM D695
Compressive Strength (10% Strain)	152	MPa	ASTM D695
Shear Strength	103	MPa	ASTM D732
Coefficient of Friction (vs. Steel - Static)	0.42		Internal Method
Wear Factor	5800	10^-8 $mm^3/N \cdot m$	ASTM D3702
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	27	J/m	ASTM D256A
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	204	°C	ASTM D648
Maximum Use Temperature - Long Term, Air	171	°C	
Limiting Pressure Velocity [1]	0.0657	MPa·m/s	Internal Method
Glass Transition Temperature	210	°C	ASTM D3418
CLTE - Flow [2] (-40 to 149°C)	5.6E-5	cm/cm/°C	ASTM E831
Thermal Conductivity	0.18	W/m/K	ASTM F433
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity [3]	> 1.0E+13	ohms	Internal Method
Dielectric Strength [4]	33	kV/mm	ASTM D149
Dielectric Constant (1 MHz)	3.15		ASTM D150
Dissipation Factor (1 MHz)	1.3E-3		ASTM D150
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (3.18 mm, Estimated Rating)	V-0		UL 94
NOTE			
1.	4:1 safety factor		
2.	68°F		
3.	EOS/ESD S11.11		
4.	Method A (Short-Time)		

Recommended distributors for this material

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