

Quadrant EPP Duratron® PEI U2300 Polyetherimide, 30% glass reinforced, extruded (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Polyetherimide (PEI); Polyetherimide (PEI), 30% Glass Fiber

Material Notes: Duratron® U2300 is an extruded 30% glass reinforced polyetherimide. It 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® U2300 provides greater rigidity and improved dimensional stability while maintaining many of the useful characteristics of unfilled Duratron® PEI. Duratron® U2300 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.

Formerly Ultem® 2300.

- High strength and performs in continuous use to 340°F (170°C)
- High dielectric strength
- UL 94-V-0 rated with low smoke output
- Available in glass-reinforced grades

Physical Properties	Metric	English	Comments
Specific Gravity	1.51 g/cc	1.51 g/cc	ASTM D792
Water Absorption	0.18 %	0.18 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.90 %	0.90 %	Immersion; ASTM D570(2)
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	114	114	ASTM D785
Hardness, Rockwell R	127	127	ASTM D785
Hardness, Shore D	86	86	ASTM D2240
Tensile Strength	117 MPa	17000 psi	ASTM D638
Elongation at Break	3.0 %	3.0 %	ASTM D638
Tensile Modulus	5.52 GPa	800 ksi	ASTM D638
Flexural Strength	186 MPa	27000 psi	ASTM D790
Flexural Modulus	5.86 GPa	850 ksi	ASTM D790
Compressive Strength	221 MPa	32000 psi	10% Def.; ASTM D695
Compressive Modulus	4.31 GPa	625 ksi	ASTM D695
Izod Impact, Notched	0.534 J/cm	1.00 ft-lb/in	ASTM D256 Type A
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	$\geq 1.00e+13$ ohm	$\geq 1.00e+13$ ohm	EOS/ESD S11.11
Dielectric Constant	3.7 @Frequency 1e+6 Hz	3.7 @Frequency 1e+6 Hz	ASTM D150
Dielectric Strength	30.3 kV/mm	770 kV/in	Short Term; ASTM D149
Dissipation Factor	0.0015 @Frequency 1e+6 Hz	0.0015 @Frequency 1e+6 Hz	ASTM D150
Thermal Properties	Metric	English	Comments
CTE, linear	19.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature -40.0 - 149 °C	11.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature -40.0 - 300 °F	ASTM E831
Thermal Conductivity	0.225 W/m-K	1.56 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)	210 °C	410 °F	ASTM D648
Glass Transition Temp, Tg	210 °C	410 °F	ASTM D3418
Flammability, UL94	V-0	V-0	1/8 inch (Estimated Rating)
Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
USP Class VI	No	No	
Chemical Resistance Properties	Metric	English	Comments

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Acceptable	Acceptable	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Limited	Limited	
Hydrocarbons - Aromatic	Unacceptable	Unacceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Unacceptable	Unacceptable	

Descriptive Properties

Machinability	7	1-10, 1=Easier to Machine
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