



SustaPEI (Ultem)

Amorphous polyetherimide (Rochling Engineering)

SUSTAPEI (Ultem® 1000) is an amorphous polyetherimide and is one of the most commonly used high performance materials. It offers excellent thermal performance and high mechanical strength and stiffness. It is inherently flame retardant, possesses good resistance to acids and is capable of operating continuously in steam and hot water. SUSTAPEI is offered in Natural (amber transparent) and Black. SUSTAPEI GF 30 (Ultem® 2300) is 30% glass reinforced and provides enhanced stiffness, strength and dimensional stability for more demanding applications.

Product Features:

- ⊕ Continuous use temperature of 340° F
- ⊕ High dielectric strength
- ⊕ Low thermal expansion
- ⊕ Inherently flame retardant
- ⊕ Hydrolysis resistant
- ⊕ Highly resistant to acidic solutions
- ⊕ Capable of withstanding multiple autoclaving cycles
- ⊕ High strength and rigidity at elevated temperatures

Typical Properties of Stock Shapes

Property	Units	Test Method	Value Natural	Value GF 30
Specific Gravity	-	ASTM D 792	1.27	1.51
Water Absorption 24 hrs	%	ASTM D 570	0.25	0.2
Water Absorption Saturation	%	ASTM D 570	1.25	0.9
Flammability	-	UL 94	V-0	V-0
Tensile Strength	psi	ASTM D 638	16,700	20,000
Elongation	%	ASTM D 638	80	3
Modulus	psi	ASTM D 638	480,000	900,000
Flexural Strength	psi	ASTM D 790	20,000	33,000
Modulus	psi	ASTM D 790	500,000	950,000
Notched Izod	ft-lb/in	ASTM D 256	0.6	1
Rockwell Hardness	-	ASTM D 785	M114	M115
HDT @ 264 psi	°F	ASTM D 648	395	410
Coefficient Linear thermal expansion	in/in/oF	ASTM D 696	3.10 x 10 ⁻⁵	1.10 x 10 ⁻⁵
Dielectric Strength	V / mil	ASTM D 149	830	770
Volume Resistivity	ohm-cm	ASTM D 257	10 ¹⁶	10 ¹⁶
Dielectric Constant	-	ASTM D 150	3.2	3.7

Typical Applications

- ⊕ Fluid handling manifolds and connectors
- ⊕ Electronic / electrical insulators
- ⊕ Analytical instrumentation
- ⊕ Medical devices
- ⊕ Aircraft components
- ⊕ Semiconductor components

Certifications

- ⊕ ASTM D 5205
- ⊕ MIL P 46184
- ⊕ Natural grade is FDA compliant

