

High Performance Engineering Plastic

Typical Applications

- Aircraft components
- Semiconductors
- Fluid handling systems
- Analytical instrumentation
- Medical devices

Product Description

PEI (Ultem® 1000) is an amorphous polyetherimide. Due to the materials properties, PEI is one of the most commonly used high performance materials available. It offers excellent thermal performance and high mechanical strength and stiffness. It is naturally flame retardant, possesses good resistance to acidic solutions and is capable of operating continuously in steam and hot water. PEI GF 30 is 30% glass reinforced and provides extra stiffness, strength and dimensional stability for more demanding applications and working environments.

Key features

- Excellent chemical resistance
- High dielectric strength
- Extremely low smoke generation
- Natural flame resistance
- Low thermal expansion
- Hydrolysis resistant
- High strength & rigidity at elevated temperatures
- Highly resistant to acidic solutions

Flame Resistance

PEI is inherently flame resistant which widens the scope of use for this material in a number of applications.

Machinability

Good machining properties.

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	0.20
Water Absorption Saturation	%	ASTM D 570	1.25	0.90
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	STM D 790	500,000	950,000
Notched Izod	ft-lb/in	ASTM D 256	0.60	1.00
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

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres:

Smiths Belfast	02895 908 897	Smiths Leeds	0113 307 5167
Smiths Biggleswade	01767 604 704	Smiths Manchester	0161 794 8650
Smiths Birmingham	0121 728 4940	Smiths Norwich	01603 789 878
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Quality & Testing:



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