

# TECAPEI™ GF30 Nat (Sabic Ultem®2300 Series) - Stock Shapes (rods, plates, tubes)

## Chemical Designation

PEI (Polyetherimide)

## Colour

brown-beige

## Density

1.51 g/cm<sup>3</sup>

## Fillers

30% glass fibres

## Main features

- high thermal and mechanical capacity
- high dielectric strength
- excellent strength and stiffness
- excellent tensile strength
- easy to machine
- inherent flame resistance

## Target Industries

- aircraft and aerospace technology
- electrical engineering
- automotive industry
- mechanical engineering

## Mechanical properties

	condition	value	test method	comment
Modulus of elasticity (tensile test)	@ 73 °F	800,000	psi	ASTM D 638
Tensile strength at break	@ 73 °F	18,000	psi	ASTM D 638
Elongation at break (tensile test)	@ 73 °F	3	%	ASTM D 638
Flexural strength	@ 73 °F	28,000	psi	ASTM D 638
Modulus of elasticity (flexural test)	@ 73 °F	800,000	psi	ASTM D 790
Compression strength	10% strain	26,000	psi	ASTM D 695
Compression strength	1% strain	3,700	psi	ASTM D 695
Compression strength	5% strain	18,000	psi	ASTM D 695
Compression modulus	@ 73 °F	390,000	psi	ASTM D 695
Impact strength (Izod)	@ 73 °F	1.1	ft-lbs/in	ASTM D 256
Rockwell hardness	M Scale	110		ASTM D 785
Shear strength	@ 73 °F, ASTM D732	14,500	psi	-

## Thermal properties

	condition	value	test method	comment
Deflection temperature	@ 66 psi, 1/4"	414	°F	ASTM D 648 1)
Deflection temperature	@ 264 psi, 1/4	409	°F	ASTM D 648 2)
Service temperature	short term	392	°F	- 3)
Service temperature	Long Term	356	°F	- 4)
Thermal expansion (CLTE)		1.1*10 <sup>-5</sup>	in/in/°F	ASTM D 696 5)
Thermal conductivity		1.56	BTU-in/hr-ft <sup>2</sup> -°F	ASTM D 2214 6)

## Electrical properties

	condition	value	test method	comment
volume resistance	1/16"	3.0*10 <sup>16</sup>	Ω*cm	ASTM D 257 1)
Dielectric strength	In Oil	630	V/mil	ASTM D 149 2)
Dielectric strength	In Air	770	V/mil	ASTM D 149 3)
Dissipation factor	@ 1kHz, 50% RH, 73°F	0.0015	%	ASTM D 150 4)
Dielectric constant	@ 1kHz, 50% RH	3.7		ASTM D 150 5)

## Other properties

	condition	value	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.16	%	ASTM D 570 1)
Moisture absorption	@ saturation, 73 °F	0.90	%	ASTM D 570 2)
Flammability (UL94)		V0	-	3)
Flammability	6 mm	pass	FAR 25.853	4)

→ Resin specification:

ASTM D5205-10 PEI0110G30A96299, 159 Mpa, 224 Mpa, 208oC

Shapes specification:

ASTM D7293-06 S-PEI0213

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