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

Chemical Designation
PEI (Polyetherimide)

Colour
brown-beige

Density
1.51 g/cm^3

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	unit	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	unit	test method		comment
Deflection temperature	@ 66 psi, 1/4"	414	°F	ASTM D 648	1)	(1) injection molded data (2) Injection molded data (3) Data obtained from public source (4) Data obtained from public source (5) Injection molded data (6) injection molded data
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)		$1.1*10^{-5}$	in/in/°F	ASTM D 696	5)	
Thermal conductivity		1.56	BTU-in/hr-ft^2-°F	ASTM D 2214	6)	

Electrical properties	condition	value	unit	test method		comment
volume resistance	1/16	$3.0*10^{16}$	Ω*cm	ASTM D 257	1)	(1) injection molded data (2) injection molded data (3) injection molded data (4) injection molded data (5) injection molded data
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)	
Dissipation factor	1 MHz, 50% RH, 73 °F	0.007		ASTM D 150		
Dielectric constant	@ 1kHz, 50% RH	3.7		ASTM D 150	5)	
Dielectric constant	1 MHz, 50% RH, 73 °F	3.52		ASTM D 150		

Other properties	condition	value	unit	test method		comment
Moisture absorption	@ 24 hrs, 73 °F	0.16	%	ASTM D 570	1)	(1) injection molded data (2) injection molded data (3) Injection molded data(0.25mm thick) (4) 6 mm test specimen
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 D5205-24 PEI0110G30A96299, 159 Mpa, 224 Mpa, 208oC
  Shapes specification:
  ASTM D7293-19 S-PEI0213

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