TECAPEI™ GF30 CAL natural (Ultem® 2300 Series) - Thin Gauge (sheet, coil, strip)

Chemical Designation
PEI (Polyetherimide)

Colour
brown-beige

Density
1.51 g/cm^3

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	775,000	psi	ASTM D 638	
Tensile strength at break	@ 73 °F	19,000	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	850,000	psi	ASTM D 790	
Compression strength	10% strain	25,500	psi	ASTM D 695	
Compression modulus	@ 73 °F	450,000	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)	
Dielectric constant	@ 1kHz, 50% RH	3.7		ASTM D 150	5)	

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)
Moisture absorption	@ saturation, 73 °F	0.90	%	ASTM D 570	2)	
Flammability (UL94)		V0		-	3)	

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