

TECAPEEK® GF30 natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

PEEK (Polyetheretherketone)

Colour

natural opaque

Density

1.53 g/cm³

Fillers

30% glass fibres

Main features

- good heat deflection temperature
- very good chemical resistance
- very high creep resistant
- hydrolysis and superheated steam resistant
- inherent flame resistance
- very high stiffness
- high dimensional stability
- resistance against high energy radiation

Target Industries

- agricultural machinery
- aircraft and aerospace interiors
- aircraft and aerospace technology
- food processing
- food engineering
- automotive industry
- electrical engineering
- chemical plant engineering
- mechanical engineering
- conveyor technology

Mechanical properties	condition	value	unit	test method	comment
Modulus of elasticity (tensile test)	1% Sec. @ 73 °F	1,000,000	psi	ASTM D 638	(1) Data obtained from public source
Tensile strength at yield	@ 73 °F	15,000	psi	ASTM D 638	(2) Injection molded specimen data obtained from public source
Tensile strength at break	@ 73 °F	15,000	psi	ASTM D 638	(3) injection molded specimen data from public source
Elongation at break (tensile test)	@ 73 °F	2.2	%	ASTM D 638	(4) injection molded specimen data from public source
Flexural strength	@ 73 °F	24,000	psi	ASTM D 790	(5) per ASTM D3846
Modulus of elasticity (flexural test)	@ 73 °F	1,000,000	psi	ASTM D 790	
Compression strength	@ 10% strain, 73 °F	25,000	psi	ASTM D 695	
Compression modulus	@ 73 °F	696,000	psi	ASTM D 695	1)
Impact strength (Izod)	@ 73 °F	1.8	ft-lbs/in	ASTM D 256	
Rockwell hardness	M Scale	103		ASTM D 785	
Coefficient of friction	@ 68 °F, Static, 50 psi	0.28		ASTM D 3702	2)
Coefficient of friction	@ 68 °F, Dynamic, 40 psi, 50 fpm	0.30		ASTM D 3702	3)
Wear (K) factor	@ 68 °F, 40 psi, 50 fpm	90*10 ⁻¹⁰	in ³ ·min/ft·lbs·hr	ASTM D 3702	4)
Shear strength	@ 73 °F	14,100	psi	-	5)
Thermal properties	condition	value	unit	test method	comment
Melting temperature		633	°F	-	1)
Deflection temperature	@264 psi, 1/4	600	°F	ASTM D 648	2)
Service temperature	Long Term	500	°F	-	3)
Service temperature	short term	572	°F	-	4)
Thermal expansion (CLTE)	< Tg, along flow	1.2*10 ⁻⁵	in/in/°F	DIN EN ISO 11359-1;2	5)
Thermal conductivity		2.08	BTU-in/hr-ft ² -°F	ISO 22007-4:2008	6)
Electrical properties	condition	value	unit	test method	comment
surface resistivity		1.0*10 ¹⁶	Ω/square	ASTM D 257	(1) injection molded specimen from public source
volume resistance	@ 73 °F	1.0*10 ¹⁶	Ω*cm	ASTM D 149	(2) injection molded specimen from public source
Dielectric strength	0.1	790	V/mil	ISO 60243-1	1)
Dissipation factor	@ 73 °F, 1 MHz	0.005		DIN IEC 60250	2)
Dielectric constant	@ 73 °F, 1 kHz	3.2		DIN IEC 60250	3)
Other properties	condition	value	unit	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.2	%	ASTM D 570	(1) Data obtained from public source
Moisture absorption	@ saturation, 73°F	0.3	%	ASTM D 570	(2) Injection molded 3mm specimen
Flammability (UL94)		V0		-	2)

→ Resin specification:
ASTM D4000-11 PEEK; MIL-P-46183 Ty. II Cl. 3, excp. Elong.
Shapes specification:
ASTM D6262-12 S-PAEK0121

→ TECAPEEK products are based on Victrex® PEEK polymer.

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