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

Chemical Designation
PEEK (Polyetheretherketone)

Colour
natural opaque

Density
1.53 g/cm^3

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 (2) Injection molded specimen data obtained from public source (3) injection molded specimen data from public source (4) injection molded specimen data from public source (5) per ASTM D3846
Tensile strength at yield	@ 73 °F	15,000	psi	ASTM D 638		
Tensile strength at break	@ 73 °F	15,000	psi	ASTM D 638		
Elongation at break (tensile test)	@ 73 °F	2.2	%	ASTM D 638		
Flexural strength	@ 73 °F	24,000	psi	ASTM D 790		
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	$90*10^{-10}$	in³-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)	(1) Injection molded specimen (2) Injection molded specimen (3) data obtained from public source (4) Data obtained from public source (5) Injection molded specimen (6) Injection molded specimen from public source
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 (2) injection molded specimen from public source (3) injection molded specimen from public source
volume resistance	@ 73 °F	$1.0*10^{16}$	Ω*cm	ASTM D 149		
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 (2) Injection molded 3mm specimen
Moisture absorption	@ saturation, 73°F	0.3	%	ASTM D 570	1)	
Flammability (UL94)		V0		-	2)	

- Resin specification:
  ASTM D4000-23 PEEK; ASTM D8033-22 PEEK012GF30; MIL-P-46183 Ty. II Cl. 3, excp. Elong.
  Shapes specification:
  ASTM D6262-23 S-PAEK0121

- TECAPEEK products are based on Victrex® PEEK polymer.

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