TECAPEEK® PVX black - Stock Shapes (rods, plates, tubes)

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.46 g/cm^3

Fillers
carbon fibres, PTFE, graphite

Main features
- good heat deflection temperature
- high creep resistance
- good slide and wear properties
- hydrolysis and superheated steam resistant
- inherent flame resistance
- excellent chemical resistance

Target Industries
- mechanical engineering
- chemical technology
- conveyor technology
- automotive industry
- textile industry
- precision engineering
- aircraft and aerospace technology

Mechanical properties	condition	value	unit	test method		comment
Modulus of elasticity (tensile test)	@ 73 °F	800,000	psi	ASTM D 638		(1) data from injection molded samples publicly sourced (2) injection molded data, publicly sourced data (3) injection molded data from public source
Tensile strength at yield	@ 73 °F	11,000	psi	ASTM D 638		
Elongation at break (tensile test)	@ 73 °F	2.5	%	ASTM D 638		
Flexural strength	@ 73 °F	18,000	psi	ASTM D 790		
Modulus of elasticity (flexural test)	@ 73 °F Tangent	700,000	psi	ASTM D 790		
Compression strength	@ 10% strain, 73 °F	16,500	psi	ASTM D 695		
Compression modulus	@ 73 °F	330,000	psi	ASTM D 695		
Impact strength (Izod)	@ 73 °F	0.90	ft-lbs/in	ASTM D 256		
Rockwell hardness	M Scale	95		ASTM D 785		
Rockwell hardness	R Scale	119		ASTM D 785		
Coefficient of friction	@ 68 °F Static , 40 psi	0.18		ASTM D 3702	1)	
Coefficient of friction	@ 68 °F Dynamic 40 psi 50 fpm	0.20		ASTM D 3702	2)	
Wear rate	@ 68 °F 40 psi, 50 fpm	10	*10^{-10} in^3 -min/ft-lb-hr	ASTM D 3702	3)	

Thermal properties	condition	value	unit	test method		comment
Melting temperature		633	°F	-		(1) Data obtained from public source (2) Data obtained from public source
Deflection temperature	@264 psi	530	°F	ASTM D 648		
Service temperature	Max Continous Use	500	°F	-		
Service temperature	short term	572	°F	-	1)	
Thermal expansion (CLTE)		3.11	*10^{-5} in/in/°F	ASTM D 696		
Thermal conductivity		5.69	BTU-in/hr-ft^2-°F	-	2)	

Electrical properties	condition	value	unit	test method		comment
surface resistivity		1.4*10^5	Ω/square	ASTM D 257		

Other properties	condition	value	unit	test method		comment
Limiting PV	@ 68 °F	500000		ASTM D 3702	1)	(1) injection molded sample, data from public source (2) Estimate
Moisture absorption	@ 24 hrs, 73 °F	0.02	%	ASTM D 570		
Moisture absorption	@ saturation, 73 °F	0.03	%	ASTM D 570		
Flammability (UL94)		V0		-	2)	

- Resin specification:
  ASTM D4000-23 PAEK0000R30D73200
  Shapes specification:
  ASTM D6262-23 S-PAEK0140R30

- TECAPEEK products are based on Victrex® PEEK polymer.

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