TECAPEEK ® PVX black - Stock Shapes

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		test method		comment
Modulus of elasticity (tensile test)	@ 73 °F	800,000	psi	ASTM D 638		(1) Data obtained from public source (2) Data obtained from public source (3) data from injection molded samples publicly sourced (4) injection molded data, publicly sourced data (5) injection molded data from public source
Tensile strength at yield	@ 73 °F	11,000	psi	ASTM D 638		
Tensile strength at break	50 mm/min	12,200	psi	DIN EN ISO 527-2	1)	
Elongation at break	@ 73 °F	2.5	%	ASTM D 638		
Elongation at break	50 mm/min	3	%	DIN EN ISO 527-1	2)	
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	3)	
Coefficient of friction	@ 68 °F Dynamic 40 psi 50 fpm	0.20		ASTM D 3702	4)	
Wear rate	@ 68 °F 40 psi, 50 fpm	$10*10^{-10}$	in³-min/ft-lbs-hr	ASTM D 3702	5)	

Thermal properties	condition	value		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		test method		comment
Dielectric strength		$1.4*10^5$	Ω*cm	ASTM D 257		

Other properties	condition	value		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	.02	%	ASTM D 570		
Moisture absorption	@ saturation, 73 °F	.03	%	ASTM D 570		
Flammability (UL94)		V-0		-	2)	

- Resin specification:
  ASTM D4000-11 PAEK0000R30D73200
  Shapes specification:
  ASTM D6262-12 S-PAEK0140R30
- TECAPEEK products are based on Victrex® PEEK polymer.
- Resin specification:
  ASTM D4000-11 PAEK0000R30D73200
  Shapes specification:
  ASTM D6262-12 S-PAEK0140R30