

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

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.46 g/cm³

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
Tensile strength at yield	@ 73 °F	11,000	psi	ASTM D 638	(2) injection molded data, publicly sourced data
Elongation at break (tensile test)	@ 73 °F	2.5	%	ASTM D 638	(3) injection molded data from public source
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
Deflection temperature	@264 psi	530	°F	ASTM D 648	(2) Data obtained from public source
Service temperature	Max Continuous 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)
Moisture absorption	@ 24 hrs, 73 °F	0.02	%	ASTM D 570	(1) injection molded sample, data from public source
Moisture absorption	@ saturation, 73 °F	0.03	%	ASTM D 570	(2) Estimate
Flammability (UL94)		V0		-	2)