

TECAPEEK® MT black polyetheretherketone - Stock Shapes

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black opaque

Density

1.31 g/cm³

Main features

- very good stress cracking resistance
- resistance against high energy radiation
- very good sterilisable
- excellent chemical resistance
- high thermal resistance
- good machinability
- very good slide and wear properties
- hydrolysis and superheated steam resistant

Target Industries

- medical technology
- food technology
- mechanical engineering

Mechanical properties	condition	value		test method	comment
Modulus of elasticity (tensile test)	1% Sec, 73 °F	650,000	psi	ASTMD 638	(1) Data obtained from public source
Tensile strength at yield	@ 73 °F	16,000	psi	ASTMD 638	(2) Data obtained from public source
Tensile strength at break	@ 73 °F	16,000	psi	ASTMD 638	(3) Injection molded specimen data obtained from public source
Elongation at yield	@ 73 °F	4.9	%	ASTMD 638	(4) injection molded specimen, data obtained from public source
Elongation at break	@ 73 °F	40	%	ASTMD 638	
Flexural strength	@ 73 °F	26,000	psi	ASTMD 790	
Modulus of elasticity (flexural test)	@ 73 °F	600,000	psi	ASTMD 790	
Compression strength	@ 73 °F 10% strain	17,500	psi	ASTMD 695	
Compression modulus	@ 73 °F	493,000	psi	ASTMD 695	2)
Notched impact strength (Izod)	@ 73 °F	0.95	ft-lbs/in	ASTMD 256	
Rockwell hardness	MScale	99		ASTMD 785	
Coefficient of friction	@ 68 °F Static, 40 psi	0.20		ASTMD 3702	3)
Coefficient of friction	@ 68 °F, Dynamic 40 psi 50 fpm	0.25		ASTMD 3702	4)
Wear (K) factor	40 psi, 50 fpm	200	*10 ⁻¹⁰ in ³ -min/ft-lb-hr	ASTMD 3702	
Thermal properties	condition	value		test method	comment
Melting temperature		633	°F	-	(1) Injection molded specimen
Deflection temperature	@264 psi	320	°F	ASTMD 648	(2) Data obtained from public source
Service temperature	short term	572	°F	-	(3) Injection molded specimen
Service temperature	Long Term	480	°F	-	(4) Injection molded specimen from public source
Thermal expansion (CLTE)	< Tg, along flow	2.5	*10 ⁻⁵ in/in/°F	DIN EN ISO 11359-1;2	(5) Injection molded specimen from public source
Thermal conductivity		2.01	BTU-in/hr-ft ² -°F	ISO 22007-4:2008	
Electrical properties	condition	value		test method	comment
surface resistivity		1.0*10 ¹⁶	Ω/square	ASTMD 257	1) (1) Injection molded specimen
Volume resistivity	@ 73 °F	4.9*10 ¹⁶	Ω*cm	ASTMD 149	2) (2) Injection molded specimen
Dielectric strength	0.1" thick IEC 60243-1	630	V/mil	-	3) (3) Injection molded specimen
Dissipation factor	@ 73 °F, 1 MHz	0.003		DIN IEC 60250	4) (4) Injection molded specimen from public source
Dielectric constant	@ 73 °F, 1 kHz	2.8		DIN IEC 60250	5) (5) injection molded data from public source
Other properties	condition	value		test method	comment
Limiting PV		69000	psi-fpm	ASTMD 3702	1) (1) publicly sourced data
Moisture absorption	@ saturation, 73 °F	0.45	%	DIN EN ISO 62	2) (2) injection molded data, publicly sourced data
Moisture absorption	@ 24 hrs, 73 °F	0.02	%	ASTMD 570	3) (3) Injection molded specimen 3.0mm
Flammability (UL94)		V0		-	3)

→ Resin specification:
ASTM D4000-11 PEEK; MIL-P-46183 Ty. I
Shapes specification:
ASTM D6262-12 S-PAEK0111

→ TECAPEEK products are based on Victrex® PEEK polymer.

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