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

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black opaque

Density
1.31 g/cm^3

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	unit	test method		comment
Modulus of elasticity (tensile test)	1% Sec, 73 °F	650,000	psi	ASTM D 638		(1) Data obtained from public source (2) Data obtained from public source (3) Injection molded specimen data obtained from public source (4) injection molded specimen, data obtained from public source
Tensile strength at yield	@ 73 °F	16,000	psi	ASTM D 638		
Tensile strength at break	@ 73 °F	7,800	psi	ASTM D 638	1)	
Elongation at yield (tensile test)	@ 73 °F	4.9	%	ASTM D 638		
Elongation at break (tensile test)	@ 73 °F	40	%	ASTM D 638		
Flexural strength	@ 73 °F	26,000	psi	ASTM D 790		
Modulus of elasticity (flexural test)	@ 73 °F	600,000	psi	ASTM D 790		
Compression strength	@ 73 °F 10% strain	17,500	psi	ASTM D 695		
Compression modulus	@ 73 °F	493,000	psi	ASTM D 695	2)	
Notched impact strength (Izod)	@ 73 °F	0.95	ft-lbs/in	ASTM D 256		
Rockwell hardness	M Scale	99		ASTM D 785		
Coefficient of friction	@ 68 °F Static , 40 psi	0.20		ASTM D 3702	3)	
Coefficient of friction	@ 68 °F, Dynamic 40 psi 50 fpm	0.25		ASTM D 3702	4)	
Wear (K) factor	40 psi, 50 fpm	200	*10^{-10} in^3 -min/ft-lb-hr	ASTM D 3702		

Thermal properties	condition	value	unit	test method		comment
Melting temperature		633	°F	-		(1) Injection molded specimen (2) Injection molded specimen (3) Data obtained from public source (4) Injection molded specimen from public source (5) Injection molded specimen from public source
Deflection temperature	@264 psi	320	°F	ASTM D 648	1)	
Service temperature	Long Term	480	°F	-	2)	
Service temperature	short term	572	°F	-	3)	
Thermal expansion (CLTE)	< Tg, along fllow	2.5	*10^{-5} in/in/°F	DIN EN ISO 11359-1;2	4)	
Thermal conductivity		2.01	BTU-in/hr-ft^2-°F	ISO 22007-4:2008	5)	

Electrical properties	condition	value	unit	test method		comment
surface resistivity		1.0*10^{16}	Ω/square	ASTM D 257	1)	(1) Injection molded specimen (2) Injection molded specimen (3) Injection molded specimen (4) Injection molded specimen from public source (5) injection molded data from public source
volume resistance	@ 73 °F	4.9*10^{16}	Ω*cm	ASTM D 149	2)	
Dielectric strength	0.1" thick IEC 60243-1	630	V/mil	-	3)	
Dissipation factor	@ 73 °F, 1 MHz	0.003		DIN IEC 60250	4)	
Dielectric constant	@ 73 °F, 1 kHz	2.8		DIN IEC 60250	5)	

Other properties	condition	value	unit	test method		comment
Limiting PV		69000	psi-fpm	ASTM D 3702	1)	(1) publicly sourced data (2) injection molded data, publicly sourced data (3) Injection molded specimen 3.0mm
Moisture absorption	@ saturation, 73 °F	0.45	%	DIN EN ISO 62	2)	
Moisture absorption	@ 24 hrs, 73 °F	0.02	%	ASTM D 570		
Flammability (UL94)		V0		-	3)	

- Resin specification: ASTM D4000-13 PEEK & ASTM D8033-16 PEEK0121
  Shapes specification:
  ASTM D6262-12 S-PAEK0111

- TECAPEEK products are based on Victrex® PEEK polymer.

Information about products and services sold by Ensinger, including without limitation information contained in this document do not constitute a warranty by Ensinger as to the quality and state or durability of products or services, or any guarantee of chemical resistance. Such information reflects the current state of our knowledge and is intended only to assist and advise the recipient. The recipient shall not be entitled to rely on Ensinger provided information and the recipient agrees to evaluate such information, to make an independent decision regarding the suitability of such information, products and services for its application, and only use such products, services and information pursuant to then current good product stewardship principles and all regulatory requirements applicable to the recipient's business. Values are guidelines that can be used for comparative purposes in material selection. They are within the normal range of product properties and do not represent guaranteed property values. Testing under individual application circumstances is always recommended. Data is obtained from extruded shapes material unless otherwise noted. References to FDA compliance refer to the resins from which the products were made unless otherwise noted. Data sheet values are subject to periodic review and the most recent update can be found at www.ensingerplastics.com

Ensinger Inc. Headquarters 365 Meadowlands Boulevard Washington, PA 15301, USA
Phone 800-243-3221 Sales Phone 800-869-4029
Technical Fax 724-746-9209
sales@ensingerusa.com

Date: 2020/09/11
Version: A1