



VICTREX® 450 FE20 PEEK

FDA Compliant Bearing Grade

DESCRIPTION

Victrex® 450 FE20 is an innovative PTFE modified polyetheretherketone, developed to offer wear resistance plus conformability. It bridges the gap between rigid PEEK and low friction, yet soft, PTFE. It offers quiet operation for non-lubricated bearings requiring FDA compliance. Its limiting PV is 2x that of unfilled PEEK, 50% lower coefficient of friction, and wear that is 25% of unfilled PEEK. It performs best in dry running bearing applications.

TYPICAL APPLICATIONS:

- FDA compliant bushings and bearings
- Analytical components like rotors
- High-temperature wear pads

Material Notes: 450 FE20 contains 20% PTFE powder and is well-suited for direct food contact or life science applications.

EXTRUDED SHAPES PROPERTIES

PHYSICAL PROPERTIES	METRIC	IMPERIAL	METHODS
Specific Gravity	1.44 g/cc	0.053 lb/in ³	ASTM D792
Water Absorption	0.05%	0.05%	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	0.3%	0.3%	Immersion; ASTM D570(2)
MECHANICAL PROPERTIES ¹			
Hardness, Rockwell M	100	85	ASTM D785
Hardness, Rockwell R	125	115	ASTM D785
Hardness, Shore D	92	86	ASTM D2240
Tensile Strength, Ultimate	83 MPa	12,000 PSI	ASTM D638
Elongation at Break	10%	10%	ASTM D638
Tensile Modulus	2,758 MPa	400,000 PSI	ASTM D638
Flexural Modulus	4,828 MPa	700,000 PSI	ASTM D790
Flexural Yield Strength	103 MPa	15,000 PSI	ASTM D790
Compressive Strength	103 MPa	15,000 PSI	10% Def.; ASTM D695
Compressive Modulus	2,758 MPa	400,000 PSI	ASTM D695
Izod Impact (notched)	36.8 J/m	0.7 ft-lbs/in	ASTM D256 Type A
THERMAL PROPERTIES			
Glass Transition Temp./T _g	150° C	302° F	ASTM D3418
Coefficient of Linear Thermal Expansion	4.9 x 10 ⁻⁵ C ⁻¹	2.7 x 10 ⁻⁵ F ⁻¹	ASTM E831

¹The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated from test specimens injection molded under optimum conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity as a result of processing, and fiber alignment inherent in all reinforced plastic shapes, regardless of process. For additional information on the effects of fiber alignment, see Drake Fiber Orientation Diagram, available on the Resource page of our website.