



Product Datasheet

Victrex 450 FE20

FDA Compliant Bearing Grade PEEK, Extruded Shapes

Victrex 450FE20 PEEK is an innovative PTFE modified PEEK 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 compliancy. It's limiting PV is twice that of unfilled PEEK, 50% lower coefficient of friction and a wear rate that is only 25% that of unfilled PEEK. It performs best in dry running bearing applications and is best for:

- FDA compliant bushings and bearings
- High temperature wear pads
- Analytical components such as rotors.

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

Physical Properties	Metric	English	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*

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	2758 MPa	400,000 psi	ASTM D638
Flexural Modulus	4828 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	2758 MPa	400,000 psi	ASTM D695
Izod Impact (notched)	36.8J/M	.7 ft-lb/in	ASTM D256 Type A

Thermal Properties

Melt Point	340°C	644°F	ASTMD3418
Heat Deflection Temp (264 psi)	150°C	300°F	ASTM D638
Coefficient of Linear Thermal Exp. in/in/°F	4.9x10 ⁻⁵ C ⁻¹	2.7x10 ⁻⁵ F ⁻¹	ASTM E831

*The mechanical properties of extruded shapes may differ from the values published by resin producers. Published resin data is always generated off injection molded test specimens run under near perfect conditions. Drake's extruded shape values are generated using specimens machined from actual shapes and may reflect surface imperfections from machining, enhanced crystallinity resulting from 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.