VICTREX FG™ 240

Product Description

High performance Food Grade thermoplastic material, carbon fiber reinforced **P**oly**E**ther**E**ther**K**etone (PEEK), semi crystalline, granules for injection moulding and extrusion, colour black. Food Contact compliance for FDA. Drinking water compliance to WRAS (UK).

Typical Application Areas

The VICTREX FG™ 200 family of materials is intended for applications needing toughness and ductility from sub-ambient to elevated temperatures along with long-term fatigue resistance and low coefficient of thermal expansion for metal replacement. Chemically resistant to aggressive environments, suitable for sterilisation for food contact applications.

MATERIAL PROPERTIES				
	CONDITIONS	TEST METHOD	UNITS	TYPICAL VALUE
Mechanical Data				
Tensile Fatigue	23°C, 10^6 cycles		MPa	175 @5Hz
	120°C, 10^6 cycles		MPa	120 @5Hz
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m^{-2}	10.5
	Unnotched, 23°C	ISO 180/U		50
Tensile Strength	Break, 23°C	ISO 527	MPa	265
	Break, 125°C			160
	Break, 175°C			85
	Break, 275°C			50
Tensile Elongation	Break, 23°C	ISO 527	%	1.7
Flexural Strength	23°C	ISO 178	MPa	380
	125°C			275
	175°C			130
	275°C			65
Flexural Modulus	23°C	ISO 178	GPa	24
Compressive Strength	23°C	ISO 604	MPa	320
	120°C			200
	200°C			70
Thermal Data				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
	Midpoint			150
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm K^{-1}	5
	Average below Tg			40
	Along flow above Tg			6
	Average above Tg			100
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	336
Thermal Conductivity	Average, 23°C	ISO 22007-4	W m^{-1} K^{-1}	0.95
Miscellaneous				
Density	Crystalline	ISO 1183	g cm^{-3}	1.40
Shore D hardness	23°C	ISO 868		87.5
Water Absorption by immersion	Saturation, 23°C	ISO 62-1	%	0.3
	Saturation, 100°C			0.45
Electrical Properties				
Volume Resistivity	23°C	IEC 60093	Ω cm	10^5

Typical Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Temperature settings	375 / 380 / 385 / 390 / 395°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	180°C - 210°C
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>2mm or 0.5 x part thickness

Mould Shrinkage + spiral flow					
Spiral Flow	395°C nozzle, 200°C tool	1mm thick section	Victrex	mm	75
		3mm thick section			330
Mould Shrinkage	395°C nozzle, 200°C tool	Along flow	ISO 294-4	%	0.1
		Across flow			0.5

Important notes:

1. Processing conditions quoted in our datasheets are typical of those used in our processing laboratories
   - *Data for mould shrinkage should be used for material comparison. Actual mould shrinkage values are highly dependent on part geometry, mould configuration, and processing conditions.*
   - *Mould shrinkage differs for along flow and across flow directions. "Along flow" direction is taken as the direction the molten material is travelling when it exits the gate and enters the mould.*
   - *Mould shrinkage is expressed as a percent change in dimension of a specimen in relation to mould dimensions.*
2. Data are generated in accordance with prevailing national, international and internal standards, and should be used for material comparison. Actual property values are highly dependent on part geometry, mould configuration and processing conditions. Properties may also differ for along flow and across flow directions.

Detailed data available on our website www.victrex.com or upon request.

World Headquarters
Victrex plc
Hillhouse International
Thornton Cleveleys, Lancashire
FY5 4QD, United Kingdom
TEL +44 (0)1253 897700
FAX +44 (0)1253 897701
MAIL victrexplc@victrex.com