

## Product Description

High performance Food Grade thermoplastic material, filled PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, colour natural/beige. Food Contact compliance for EU, FDA, China and South America. Drinking water compliance to WRAS (UK).

## Typical Application Areas

The VICTREX FG™ 300 family of materials is intended for applications needing wear and abrasion resistance for bearing and wear service 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
<b>Tribological Data</b>				
Wear Rate	Block-on-Ring, 2 MPa, 1 m/s	ASTM G176	10 <sup>-5</sup> mm <sup>3</sup> m <sup>-1</sup>	12
Coefficient of Friction	Block-on-Ring, 2 MPa, 1 m/s	ASTM G176		0.16
Shore D hardness	23°C	ISO 868		81
Taber Abrasion	CS-17, 1kg		g/1000 rev	0.028
<b>Mechanical Data</b>				
Tensile Strength	Break, 23°C	ISO 527	MPa	78
Tensile Elongation	Break, 23°C	ISO 527	%	25
Flexural Strength	@3.5% strain, 23°C	ISO 178	MPa	100
	@yield, 23°C			125
	125°C			70
	175°C			18
Flexural Modulus	23°C	ISO 178	GPa	3.2
Compressive Strength	23°C	ISO 604	MPa	105
	120°C			65
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m <sup>-2</sup>	8.0
	Unnotched, 23°C	ISO 180/U		No break
<b>Thermal Data</b>				
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 <sup>-1</sup>	40
	Average below Tg			60
	Along flow above Tg			120
	Average above Tg			140
Heat Deflection Temperature	1.8 MPa	ISO 75A-f	°C	150
<b>Miscellaneous</b>				
Density	Crystalline	ISO 1183	g cm <sup>-3</sup>	1.40
Water Absorption by immersion	Saturation, 23°C	ISO 62-1	%	0.45
	Saturation, 100°C			0.55
<b>Electrical Properties</b>				
Volume Resistivity	23°C	IEC 60093	Ω cm	10 <sup>16</sup>
Dielectric Strength	2mm thickness	IEC 60243-1	kV mm <sup>-1</sup>	26

Typical Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Temperature settings	355 / 360 / 365 / 370 / 375°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	170°C - 200°C
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>2mm or 0.5 x part thickness

Mould Shrinkage + spiral flow					
Spiral Flow	375°C nozzle, 180°C tool	1mm thick section	Victrex	mm	130
Mould Shrinkage	375°C nozzle, 180°C tool	Along flow	ISO 294-4	%	1.2
		Across flow			1.7

**Important notes:**

- 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.
- 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](http://www.victrex.com) or upon request.

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