VICTREX FG™ 100/101

Product Description

High performance Food Grade thermoplastic material, unreinforced **P**oly**E**ther**E**ther**K**etone (PEEK), semi crystalline, granules for injection moulding and extrusion, colour natural/beige (100) and black (101). Food Contact compliance for EU, FDA, China and South America. Drinking water compliance to WRAS (UK).

Typical Application Areas

The VICTREX FG™ 100 family of materials is intended for applications needing mechanical properties at ambient and elevated temperatures along with long-term creep resistance, point and edge retention 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 Strength	Break, 23°C	ISO 527	MPa	105
Tensile Elongation	Break, 23°C	ISO 527	%	20
Flexural Strength	23°C	ISO 178	MPa	175
Flexural Modulus	23°C	ISO 178	GPa	3.9
Compressive Strength	23°C	ISO 604	MPa	130
Tensile Creep	23°C, 1000 hrs		%	0.16 @30MPa
	120°C, 1000 hrs		%	0.76 @30MPa
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m^{-2}	5.0
	Unnotched, 23°C	ISO 180/U		No break
Thermal Data				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
	Midpoint			147
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm K^{-1}	50
	Average below Tg			55
	Along flow above Tg			120
	Average above Tg			140
Heat Deflection Temperature	1.8 MPa	ISO 75A-f	°C	156
Thermal Conductivity	Average, 23°C	ISO 22007-4	W m^{-1} K^{-1}	0.29
Miscellaneous				
Density	Crystalline	ISO 1183	g cm^{-3}	1.30
Shore D hardness	23°C	ISO 868		85
Water Absorption by immersion	Saturation, 23°C	ISO 62-1	%	0.45
	Saturation, 100°C			0.55
Electrical Properties				
Volume Resistivity	23°C	IEC 60093	Ω cm	10^{16}
Dielectric Strength	2mm thickness	IEC 60243-1	kV mm^{-1}	23

Typical Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Temperature settings	350 / 355 / 355 / 360 / 365°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	160°C - 200°C
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>1mm or 0.5 x part thickness

Mould Shrinkage and Spiral Flow					
Spiral Flow	365°C nozzle, 180°C tool	1mm thick section	Victrex	mm	220
Mould Shrinkage	365°C nozzle, 180°C tool	Along Flow	ISO 294-4	%	1.0
		Across Flow			1.3

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.

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