VICTREX FG™ POLYMER 200/201

General Information

Product Description

High performance Food Grade thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, colour natural/beige (200) and black (201).

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.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.30	g/cm³	ISO 1183
Spiral Flow [1]	12.5	cm	Internal Method
Molding Shrinkage [2]			ISO 294-4
Across Flow	1.3	%	
Flow	1.0	%	
Water Absorption (Saturation, 23°C)	0.45	%	ISO 62
Water AbsorptionSaturation (100°C)	0.55	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress (Yield, 23°C)	95.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	60	%	ISO 527-2
Flexural Modulus (23°C)	3600	MPa	ISO 178
Flexural Stress			ISO 178
23°C	155	MPa	
125°C	85.0	MPa	
175°C	16.0	MPa	
Compressive Stress			ISO 604
23°C	120	MPa	
120°C	65.0	MPa	
Tensile Fatigue1e6 cycles, 2 Hz (23°C)	80.0	MPa	
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact Strength (23°C)	9.5	kJ/m²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	No Break		ISO 180
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D, 23°C)	84.0		ISO 868

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	152	°C	
Glass Transition Temperature			ISO 11357-2
Onset	143	°C	
Midpoint	150	°C	
Melting Temperature	343	°C	ISO 11357-3
CLTE - Flow			ISO 11359-2
< 143°C	45	ppm/K	
> 143°C	125	ppm/K	
CLTE - Average			ISO 11359-2
< 143°C	65	ppm/K	
> 143°C	160	ppm/K	
Thermal Conductivity [3] (23°C)	0.29	W/m/K	ISO 22007-4

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Dielectric Strength (2.00 mm)	23.0	kV/mm	IEC 60243-1

Typical Processing Information

Injection	Nominal Value	Unit
Drying Temperature	120 to 150	°C
Drying Time	3.0 to 5.0	hr
Suggested Max Moisture	0.020	%
Hopper Temperature	< 100	°C
Rear Temperature	375	°C
Middle Temperature	380 to 385	°C
Front Temperature	390	°C
Nozzle Temperature	395	°C
Mould Temperature	170 to 200	°C

Injection Notes

Runner: Die / nozzle >3mm, manifold >3.5mm

Gate: >1mm or 0.5 x part thickness

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.

Notes

[1] Mould Temperature: 180°C, Melt Temperature: 395°C, 1.00 mm

[2] 395°C nozzle, 180°C tool

[3] Average

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