

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/cm ³	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 Absorption - Saturation (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 Fatigue - 1e6 cycles, 2 Hz (23°C)	80.0	MPa	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength (23°C)	9.5	kJ/m ²	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

VICTREX FG™ POLYMER 200/201

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed	152	°C	ISO 75-2/Af
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

VICTREX FG™ POLYMER 200/201

Revision Date: December 2023

This information is provided "as is". It is not intended to amount to advice. Use of the product is at the customer's/user's risk. It is the customer's/user's responsibility to thoroughly test the product in each specific application to determine its performance, efficacy and safety for each end-use product, device or other application and compliance with applicable laws, regulations and standards. Mention of a product is no guarantee of availability. Victrex reserves the right to modify products, data sheets, specifications and packaging. **Victrex makes no warranties, express or implied (including, without limitation, any warranty of fitness for a particular purpose or of intellectual property non-infringement) and will not be liable for any loss or damage of any nature (however arising) in connection with customer's/user's use or reliance on this information, except for any liability which cannot be excluded or limited by law.** This document may be modified or retracted at any time without notice to the customer/user.

Victrex Manufacturing Limited (or another member of the Victrex group) is the owner or the licensee of all intellectual property rights in and to this document including the following trademarks, VICTREX, INVIBIO, JUVORA, APTIV, 450G, PEEK-OPTIMA, SHAPING FUTURE PERFORMANCE, LMPAEK, TRIANGLE (Device). All rights are protected by intellectual property rights including copyright under relevant national and international intellectual property laws and treaties. All rights reserved. Copyright © Victrex Manufacturing Limited 2023.