

VICTREX FG™ 100/101



Product Description

High performance Food Grade thermoplastic material, unreinforced PolyEtherEtherKetone (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 / 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:

- 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 or upon request.

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