VICTREX PC™ 140 CPD Granules

General Information

Product Description

High performance biocompatible thermoplastic material, 30% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline. Granules for injection moulding and extrusion, easy flow, specifically for drug delivery devices, pharmaceutical manufacturing and packaging. Colour black.

Typical Application Areas

For use in applications requiring high strength, high stiffness, and high ductility. Suitable for drug delivery devices, pharmaceutical manufacturing and packaging. As PEEK is hygroscopic, drying before use is recommended. Further information is available upon request.

VICTREX PC™ offers high performance for strength, chemical resistance, wear resistance, toughness and purity whilst being PFAS free.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.40	g/cm³	ISO 1183
Molding Shrinkage [1]			ISO 294-4
Across Flow	0.50	%	
Flow	0.10	%	
Water Absorption (Saturation, 23°C)	0.30	%	ISO 62
Crystallinity DSC	24.5	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	28000	MPa	ISO 527-1
Tensile Stress (Yield, 23°C)	270	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	1.5	%	ISO 527-2
Flexural Modulus (23°C)	24000	MPa	ISO 178
Flexural Stress [2] (23°C)	380	MPa	ISO 178
Compressive Stress [3] (23°C)	300	MPa	ISO 604
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	6.0	kJ/m²	ISO 179/1eA
Notched Izod Impact Strength (23°C)	7.5	kJ/m²	ISO 180/A
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D, 23°C)	87.5		ISO 868
Thermal	**Nominal Value**	**Unit**	**Test Method**
Glass Transition Temperature (Onset)	143	°C	ISO 11357-2
Melting Temperature	343	°C	ISO 11357-3
Recrystallization Temperature	300	°C	ISO 11357-3
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (400°C, 1000 sec^-1)	300	Pa·s	Internal Method
Melt Stability 400°C, 1000 sec^-1, 1 hr	1.0	%	Internal Method

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Typical Processing Information

Injection	Nominal Value	Unit
Drying Temperature	120 to 150	°C
Drying Time	3.0 to 5.0	hr
Hopper Temperature	< 100	°C
Rear Temperature	365	°C
Middle Temperature	370 to 375	°C
Front Temperature	380	°C
Nozzle Temperature	385	°C
Mould Temperature	180 to 210	°C

Injection Notes

Drying Temperature/Time: 150 °C / 3 h or 120 °C / 5 h (residual moisture <0.02%)

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

Gate: >2mm 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.

Storage Requirements

Store in original packaging away from direct sunlight and extremes of temperatures. Do not use if sealing tab is broken prior to opening.

Development Material

During qualification activities NFHI (Not For Human Implantation) grades are available upon request.

Detailed data available on our website www.victrex.com or upon request.

Notes

[1] 375°C nozzle, 190°C tool

[2] At yield

[3] Notched

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