VICTREX™ PEEK POLYMER 151G

General Information

Product Description

High performance thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, depth filtered granules for injection moulding, easy flow, colour natural/beige.

Typical Application Areas

Complex geometries with thin cross sections or long flow lengths, for high strength and stiffness as well as good ductility. Chemically resistant to aggressive environments. Suitable for steam sterilisation. Further information is available on request.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.30	g/cm³	ISO 1183
Spiral Flow			Internal Method
-- [1]	22.0	cm	
-- [2]	25.0	cm	
-- [3]	30.0	cm	
Molding Shrinkage [4]			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 Modulus (23°C)	4100	MPa	ISO 527-1
Tensile Stress (Yield, 23°C)	105	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	30	%	ISO 527-2
Flexural Modulus (23°C)	3900	MPa	ISO 178
Flexural Stress			ISO 178
23°C [5]	175	MPa	
3.5% Strain, 23°C	130	MPa	
125°C	90.0	MPa	
175°C	20.0	MPa	
275°C	13.5	MPa	
Compressive Stress			ISO 604
23°C	130	MPa	
120°C	80.0	MPa	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	4.2	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	No Break		ISO 179/1U
Notched Izod Impact Strength (23°C)	5.0	kJ/m²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	No Break		ISO 180/1U
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D, 23°C)	85.0		ISO 868

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	156	°C	
1.8 MPa, Annealed [6]	167	°C	
Glass Transition Temperature			ISO 11357-2
Onset	143	°C	
Midpoint	147	°C	
Melting Temperature	343	°C	ISO 11357-3
CLTE - Flow			ISO 11359-2
< 143°C	50	ppm/K	
> 143°C	120	ppm/K	
CLTE - Average			ISO 11359-2
< 143°C	55	ppm/K	
> 143°C	140	ppm/K	
Thermal Conductivity			ISO 22007-4
23°C [7]	0.29	W/m/K	
23°C [8]	0.32	W/m/K	
RTI Elec	260	°C	UL 746B
RTI Imp	180	°C	UL 746B
RTI Str	240	°C	UL 746B

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			IEC 60093
23°C	1.0E+16	ohms·cm	
125°C	1.0E+15	ohms·cm	
275°C	1.0E+9	ohms·cm	
Dielectric Strength (2.00 mm)	23.0	kV/mm	IEC 60243-1
Dielectric Constant (23°C, 1 kHz)	3.10		IEC 60250
Dissipation Factor (23°C, 1 MHz)	4.0E-3		IEC 60250
Comparative Tracking Index	150	V	IEC 60112

Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index (2.0 mm)	960	°C	IEC 60695-2-12

Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	130	Pa·s	ISO 11443

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	350	°C
Middle Temperature	355	°C
Front Temperature	360	°C
Nozzle Temperature	365	°C
Mold Temperature	160 to 200	°C

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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] Mold Temperature: 160°C, Melt Temperature: 365°C, 1.00 mm

[2] Mold Temperature: 180°C, Melt Temperature: 375°C, 1.00 mm

[3] Mold Temperature: 200°C, Melt Temperature: 400°C, 1.00 mm

[4] 365°C nozzle, 160°C tool

[5] At yield

[6] 200°C/4h

[7] Average

[8] Along flow

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