

VICTREX™ PEEK POLYMER 90CA30

General Information

Product Description

High performance thermoplastic material, 30% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding, very easy flow, colour black.

Complex geometries with thinner cross sections or longer flow length where higher strength in a static or dynamic system is required. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.40	g/cm ³	ISO 1183
Spiral Flow ¹	13.0	cm	Internal Method
Molding Shrinkage ²			ISO 294-4
Across Flow	0.50	%	
Flow	0.10	%	
Water Absorption (Saturation, 23°C)	0.30	%	ISO 62
Water Absorption Saturation (100°C)	0.45	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	28000	MPa	ISO 527-1
Tensile Stress			ISO 527-2
Break, 23°C	275	MPa	
Break, 125°C	180	MPa	
Break, 175°C	110	MPa	
Break, 225°C	85.0	MPa	
Break, 275°C	65.0	MPa	
Tensile Strain (Break, 23°C)	1.4	%	ISO 527-2
Flexural Modulus (23°C)	24000	MPa	ISO 178
Flexural Stress			ISO 178
23°C	380	MPa	
125°C	275	MPa	
175°C	130	MPa	
225°C	65.0	MPa	
Compressive Stress			ISO 604
23°C	300	MPa	
120°C	200	MPa	
200°C	70.0	MPa	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	6.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	45.0	kJ/m ²	ISO 179/1U
Notched Izod Impact Strength (23°C)	6.5	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	40.0	kJ/m ²	ISO 180
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 23°C)	88.0		ISO 868

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed	342	°C	ISO 75-2/Af
Glass Transition Temperature (Onset)	143	°C	ISO 11357-2
Melting Temperature	343	°C	ISO 11357-3
CLTE - Flow			ISO 11359-2
< 143°C	5	ppm/K	
> 143°C	5	ppm/K	
CLTE - Average			ISO 11359-2
< 143°C	40	ppm/K	
> 143°C	90	ppm/K	
Specific Heat (23°C)	1800	J/kg/°C	DSC
Thermal Conductivity			ISO 22007-4
23°C ³	0.95	W/m/K	
23°C ⁴	2.0	W/m/K	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ⁵ (23°C)	1.0E+5	ohms·cm	ASTM D4496
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)	250	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
Hopper Temperature	< 100	°C
Rear Temperature	360	°C
Middle Temperature	365 to 370	°C
Front Temperature	375	°C
Nozzle Temperature	380	°C
Mould Temperature	170 to 200	°C

Injection Notes

Runner: Die / nozzle >3mm, manifold >3.5mm
Gate: >2mm or 0.5 x part thickness

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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Notes

¹ Mould Temperature: 190°C, Melt Temperature: 380°C, 1.00 mm
² 380°C nozzle, 190°C tool
³ Average
⁴ Along flow
⁵ 1V

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