

## VICTREX® PEEK 450CA30

### ➤ Product Description:

High performance thermoplastic material, 30% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour black.

### ➤ Typical Application Areas:

Applications for higher strength and stiffness in a static or dynamic system. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments.

### ➤ Material Properties

	CONDITIONS	TEST METHOD	UNITS	TYPICAL VALUE
<b>Mechanical Data</b>				
Tensile Strength	Break, 23°C	ISO 527	MPa	265
	Break, 125°C			160
	Break, 175°C			85
	Break, 275°C			50
Tensile Elongation	Break, 23°C	ISO 527	%	1.7
Tensile Modulus	23°C	ISO 527	GPa	28
Flexural Strength	23°C	ISO 178	MPa	380
	125°C			275
	175°C			130
	275°C			65
Flexural Modulus	23°C	ISO 178	GPa	24
Compressive Strength	23°C	ISO 604	MPa	320
	120°C			200
	200°C			70
Charpy Impact Strength	Notched, 23°C	ISO 179/1eA	kJ m <sup>-2</sup>	7.0
	Unnotched, 23°C	ISO 179/1U		45
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m <sup>-2</sup>	10.5
	Unnotched, 23°C	ISO 180/U		50
<b>Thermal Data</b>				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
	Midpoint			150
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm K <sup>-1</sup>	5
	Average below Tg			40
	Along flow above Tg			6
	Average above Tg			100
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	336
Thermal Conductivity	Along flow, 23°C	ISO 22007-4	W m <sup>-1</sup> K <sup>-1</sup>	2.0
	Average, 23°C			0.95
Relative Thermal Index	Mechanical w/o impact	UL 746B	°C	240
	Mechanical w/impact			200
<b>Flow</b>				
Melt Viscosity	400°C	ISO 11443	Pa.s	675

Miscellaneous				
Density	Crystalline	ISO 1183	g cm <sup>-3</sup>	1.40
Shore D hardness	23°C	ISO 868		87.5
Water Absorption by immersion	Saturation, 23°C	ISO 62-1	%	0.3
	Saturation, 100°C			0.45

Electrical Properties				
Volume Resistivity	23°C, 1V	ASTM D4496	Ω cm	10 <sup>5</sup>

Fire Smoke Toxicity				
Glow Wire Test	2mm thickness	IEC 60695-2-12	°C	960
Toxicity Index	CO content	NES 713	n/a	0.05
	CO <sub>2</sub> content			0.12
	Total gases			0.17

Typical Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Temperature settings	375 / 380 / 385 / 390 / 395°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	180°C - 210°C
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>2mm or 0.5 x part thickness

Mould Shrinkage and Spiral Flow					
Spiral Flow	395°C nozzle, 200°C tool	1mm thick section	Victrex	mm	75
		3mm thick section			330
Mould Shrinkage	395°C nozzle, 200°C tool	Along flow	ISO 294-4	%	0.1
		Across flow			0.5

#### 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](http://www.victrex.com) or upon request

#### World Headquarters

Victrex plc, Hillhouse International, Thornton Cleveleys, Lancashire FY5 4QD United Kingdom

Tel: + (44) 1253 897700 Fax: + (44) 1253 897701 Email: [victrexplc@victrex.com](mailto:victrexplc@victrex.com)

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