

# 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	260
	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	25
Flexural Strength	23 °C	ISO 178	MPa	380
	125 °C			250
	175 °C			120
	275 °C			60
Flexural Modulus	23 °C	ISO 178	GPa	23
Compressive Strength	23 °C	ISO 604	MPa	300
	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>	9.5
	Unnotched, 23 °C	ISO 180/U		45
<b>Thermal Data</b>				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
Specific Heat Capacity	23 °C	DSC	kJ kg <sup>-1</sup> °C <sup>-1</sup>	1.8
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm °C <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	23 °C	ISO/CD 22007-4	W m <sup>-1</sup> °C <sup>-1</sup>	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		90
Water Absorption (3.2mm thick Tensile bar)	24h, 23 °C	ISO 62-1	%	0.04
(by immersion)	Equilibrium, 23 °C			0.3

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

Fire Smoke Toxicity				
Flammability Rating		UL94	n/a	V-0 @ 0.5 mm
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

Recommended Processing Conditions				
Drying Temperature / Time	150 °C / 3h or 120 °C / 5h			
Temperature settings	375 / 380 / 385 / 390 / 395 °C (Nozzle)			
Hopper Temperature	Not greater than 100 °C			
Mould Temperature	180 °C - 210 °C (max 250 °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

Detailed data available on our website [www.victrex.com](http://www.victrex.com) or upon request



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