

## VICTREX® PEEK 450FC30

### ➤ Product Description:

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

### ➤ Typical Application Areas:

Tribological applications for high strength. Excellent wear resistance, very 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	140
	Break, 125°C			95
	Break, 175°C			55
	Break, 225°C			45
	Break, 275°C			35
Tensile Elongation	Break, 23°C	ISO 527	%	2.2
Tensile Modulus	23°C	ISO 527	GPa	12.5
Flexural Strength	23°C	ISO 178	MPa	230
Flexural Modulus	23°C	ISO 178	GPa	11.5
Compressive Strength	23°C	ISO 604	MPa	170
	120°C			110
Charpy Impact Strength	Notched, 23°C	ISO 179/1eA	kJ m <sup>-2</sup>	5.0
	Unnotched, 23°C	ISO 179/1U		35
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m <sup>-2</sup>	6.0
	Unnotched, 23°C	ISO 180/U		35
<b>Thermal Data</b>				
Melting Point		ISO 11357	°C	343
Glass Transition (T <sub>g</sub> )	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 T <sub>g</sub>	ISO 11359	ppm K <sup>-1</sup>	15
	Average below T <sub>g</sub>			45
	Along flow above T <sub>g</sub>			20
	Average above T <sub>g</sub>			115
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	315
Thermal Conductivity	23°C	ISO 22007-4	W m <sup>-1</sup> K <sup>-1</sup>	0.87
Relative Thermal Index	Mechanical w/o impact	UL 746B	°C	240
	Mechanical w/impact			180
<b>Flow</b>				
Melt Viscosity	400°C	ISO 11443	Pa.s	550

Miscellaneous				
Density	Crystalline	ISO 1183	$\text{g cm}^{-3}$	1.45
Shore D hardness	23°C	ISO 868		83
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	IEC 60093	$\Omega \text{ cm}$	$10^{10}$

Fire Smoke Toxicity				
Glow Wire Test	2mm thickness	IEC 60695-2-12	°C	960
Limiting Oxygen Index		ISO 4289	%O <sub>2</sub>	43

Recommended Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h
Temperature settings	365 / 370 / 375 / 380 / 385°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	170°C - 200°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	385°C nozzle, 200°C tool	1mm thick section	Victrex	mm	80
		3mm thick section			380
Mould Shrinkage	385°C nozzle, 200°C tool	Along flow	ISO 294-4	%	0.3
		Across flow			0.7

#### Important note:

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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