

VICTREX® PEEK™ 450CA40

➤ **Product Description:**

High performance thermoplastic material, 40% 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
Mechanical Data				
Tensile Strength	Break, 23°C	ISO 527	MPa	250
Tensile Elongation	Break, 23°C	ISO 527	%	1.5
Tensile Modulus	23°C	ISO 527	GPa	32
Flexural Strength	23°C	ISO 178	MPa	380
Flexural Modulus	23°C	ISO 178	GPa	28
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m ⁻²	8.5
	Unnotched, 23°C	ISO 180/U		
Thermal Data				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
Specific Heat Capacity	23°C	DSC	kJ kg ⁻¹ °C ⁻¹	1.8
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm °C ⁻¹	5
	Average below Tg			
	Along flow above Tg			
	Average above Tg			
Flow				
Melt Viscosity	400°C	ISO 11443	Pa.s	850
Miscellaneous				
Density	Crystalline	ISO 1183	g cm ⁻³	1.44
Water Absorption (3.2mm thick Tensile bar) (by immersion)	24h, 23°C	ISO 62-1	%	0.03
	Equilibrium, 23°C			
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 ₂ content			
	Total gases			

* Result based on 450CA30

Recommended Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h
Temperature settings	380 / 390 / 395 / 400 / 405°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	190°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	405°C nozzle, 200°C tool	1mm thick section	Victrex	mm	65
Mould Shrinkage	405°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 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

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