

VICTREX® PEEK 450CA20

➤ Product Description:

High performance thermoplastic material, 20% 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	230
Tensile Elongation	Break, 23°C	ISO 527	%	2.1
Tensile Modulus	23°C	ISO 527	GPa	19.5
Flexural Strength	23°C	ISO 178	MPa	340
Flexural Modulus	23°C	ISO 178	GPa	16.5
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m ⁻²	9.5
	Unnotched, 23°C	ISO 180/U		40
Thermal Data				
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 ⁻¹	8
	Average below Tg			45
	Along flow above Tg			8
	Average above Tg			110
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	325
Flow				
Melt Viscosity	400°C	ISO 11443	Pa.s	525
Miscellaneous				
Density	Crystalline	ISO 1183	g cm ⁻³	1.37
Shore D hardness	23°C	ISO 868		86
Water Absorption by immersion	Saturation, 23°C	ISO 62-1	%	0.35
	Saturation, 100°C			0.50
Electrical Properties				
Volume Resistivity	23°C, 1V	IEC 60093	Ω cm	10 ⁷

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 ₂ content			0.12 *
	Total gases			0.17 *

* Result based on similar products

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	100
Mould Shrinkage	395°C nozzle, 200°C tool	Along flow	ISO 294-4	%	0.2
		Across flow			0.7

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

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