VICTREX® PEEK 90CA30

Product Description:

High performance thermoplastic material, 30% carbon fibre reinforced **P**oly**E**ther**E**ther**K**etone (PEEK), semi crystalline, granules for injection moulding, very easy flow, FDA food contact compliant, colour black.

Typical Application Areas:

Complex geometries with thinner cross sections or longer flow length where higher strength in a static or dynamic system is required. 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	275
	Break, 125°C			180
	Break, 175°C			110
	Break, 225°C			85
	Break, 275°C			65
Tensile Elongation	Break, 23°C	ISO 527	%	1.4
Tensile Modulus	23°C	ISO 527	GPa	28
Flexural Strength	23°C	ISO 178	MPa	380
	125°C			275 *
	175°C			130 *
	225°C			65 *
Flexural Modulus	23°C	ISO 178	GPa	24
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^{-2}	6.0
	Unnotched, 23°C	ISO 179/1U		45
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m^{-2}	7.0
	Unnotched, 23°C	ISO 180/U		40
Thermal Data				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
Specific Heat Capacity	23ºC	DSC	kJ kg^{-1} $°C^{-1}$	1.8
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm K^{-1}	5
	Average below Tg			40
	Along flow above Tg			5
	Average above Tg			90
Heat Deflection Temperature	1.8 MPa	ISO 75A-f	°C	342
Thermal Conductivity	Along flow, 23°C	ISO 22007-4	W m^{-1} K^{-1}	2.0
	Average, 23°C			0.95
Flow				
Melt Viscosity	400°C	ISO 11443	Pa.s	250

Miscellaneous				
Density	Crystalline	ISO 1183	g cm^{-3}	1.40
Shore D hardness	23°C	ISO 868	87.5	88
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	10^5

Fire Smoke Toxicity				
Glow Wire Test	2mm thickness	IEC 60695-2-12	ºC	960 *

* Result based on similar products

Typical Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Temperature settings	360 / 365 / 370 / 375 / 380°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	170°C - 200°C
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>2mm or 0.5 x part thickness

Mould Shrinkage and Spiral Flow					
Spiral Flow	380°C nozzle, 190°C tool	1mm thick section	Victrex	mm	130
Mould Shrinkage	380°C nozzle, 190°C tool	Along flow	ISO 294-4	%	0.1
		Across flow			0.5

Important notes:

1) 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.

2) 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 or upon request

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