

# VICTREX™ PEEK POLYMERS 450CA30

## General Information

### 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.

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

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.40	g/cm <sup>3</sup>	ISO 1183
Spiral Flow			Internal Method
-- 1	7.50	cm	
-- 2	33.0	cm	
Molding Shrinkage <sup>3</sup>			ISO 294-4
Across Flow	0.50	%	
Flow	0.10	%	
Water Absorption (Saturation, 23°C)	0.30	%	ISO 62
Water Absorption - Saturation (100°C)	0.45	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	28000	MPa	ISO 527-1
Tensile Stress			ISO 527-2
Break, 23°C	265	MPa	
Break, 125°C	160	MPa	
Break, 175°C	85.0	MPa	
Break, 275°C	50.0	MPa	
Tensile Strain (Break, 23°C)	1.7	%	ISO 527-2
Flexural Modulus (23°C)	24000	MPa	ISO 178
Flexural Stress			ISO 178
23°C	380	MPa	
125°C	275	MPa	
175°C	130	MPa	
275°C	65.0	MPa	
Compressive Stress			ISO 604
23°C	320	MPa	
120°C	200	MPa	
200°C	70.0	MPa	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.0	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	45	kJ/m <sup>2</sup>	ISO 179/1U
Notched Izod Impact Strength (23°C)	11	kJ/m <sup>2</sup>	ISO 180/A
Unnotched Izod Impact Strength (23°C)	50	kJ/m <sup>2</sup>	ISO 180
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 23°C)	88		ISO 868

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed	336	°C	ISO 75-2/Af
Glass Transition Temperature			ISO 11357-2
Onset	143	°C	
Midpoint	150	°C	
Melting Temperature	343	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow : < 143°C	5.0E-6	cm/cm/°C	
Flow : > 143°C	6.0E-6	cm/cm/°C	
Transverse : < 143°C	4.0E-5	cm/cm/°C	
Transverse : > 143°C	1.0E-4	cm/cm/°C	
Thermal Conductivity			ISO 22007-4
23°C <sup>4</sup>	0.95	W/m/K	
23°C <sup>5</sup>	2.0	W/m/K	
RTI Imp	200	°C	UL 746B
RTI Str	240	°C	UL 746B
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity <sup>6</sup> (23°C)	1.0E+5	ohms·cm	ASTM D4496
Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index (2.0 mm)	960	°C	IEC 60695-2-12
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	675	Pa·s	ISO 11443

## Processing Information

Injection	Nominal Value	Unit
Drying Temperature	120 to 150	°C
Drying Time	3.0 to 5.0	hr
Hopper Temperature	< 100	°C
Rear Temperature	375	°C
Middle Temperature	380 to 385	°C
Front Temperature	390	°C
Nozzle Temperature	395	°C
Mold Temperature	180 to 210	°C

### Injection Notes

Runner: Die / nozzle >3mm, manifold >3.5mm  
Gate: >2mm or 0.5 x part thickness

## Notes

<sup>1</sup> Mold Temperature: 200°C, Melt Temperature: 395°C, 1.00 mm

<sup>2</sup> Mold Temperature: 200°C, Melt Temperature: 395°C, 3.00 mm

<sup>3</sup> 395°C nozzle, 200°C tool

<sup>4</sup> Average

<sup>5</sup> Along flow

<sup>6</sup> 1V

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