

VICTREX™ PEEK POLYMERS 450CA20

General Information

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.

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)	1.37	g/cm ³	ISO 1183
Spiral Flow ¹	10.0	cm	Internal Method
Molding Shrinkage ²			ISO 294-4
Across Flow	0.70	%	
Flow	0.20	%	
Water Absorption (Saturation, 23°C)	0.35	%	ISO 62
Water Absorption - Saturation (100°C)	0.50	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	19500	MPa	ISO 527-1
Tensile Stress (Break, 23°C)	230	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	2.1	%	ISO 527-2
Flexural Modulus (23°C)	16500	MPa	ISO 178
Flexural Stress (23°C)	340	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength (23°C)	9.5	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	40	kJ/m ²	ISO 180
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 23°C)	86		ISO 868
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	325	°C	
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	8.0E-6	cm/cm/°C	
Flow : > 143°C	8.0E-6	cm/cm/°C	
Transverse : < 143°C	4.5E-5	cm/cm/°C	
Transverse : > 143°C	1.1E-4	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ³ (23°C)	1.0E+7	ohms·cm	IEC 60093
Flammability	Nominal Value	Unit	Test Method
Glow Wire Flammability Index (2.0 mm)	960	°C	IEC 60695-2-12

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Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	525	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

¹ Mold Temperature: 200°C, Melt Temperature: 395°C, 1.00 mm

² 395°C nozzle, 200°C tool

³ 1V

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