

VICTREX® PEEK 450CA20

Polyetheretherketone

Victrex plc

Message:

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.

General Information			
UL YellowCard	E161131-531783	E161131-101337309	
Filler / Reinforcement	Carbon fiber reinforced material, 20% filler by weight		
Features	Semicrystallization		
	Low friction coefficient		
	Rigidity, high		
	High strength		
	Good liquidity		
	Good chemical resistance		
	Good wear resistance		
	Compliance of Food Exposure		
Agency Ratings	FDA Food Exposure, Not Rated		
Appearance	Black		
Forms	Particles		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density ¹	1.37	g/cm ³	ISO 1183
Spiral Flow	10.0	cm	Internal method
Molding Shrinkage ²			ISO 294-4
Vertical flow direction	0.70	%	ISO 294-4
Flow direction	0.20	%	ISO 294-4
Water Absorption			ISO 62
23°C, 24 hr, 3.20 mm	0.050	%	ISO 62
Saturated, 23°C, 3.20mm	0.40	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	86		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	18000	MPa	ISO 527-2
Tensile Stress (Break, 23°C)	210	MPa	ISO 527-2

Tensile Strain (Break, 23°C)	2.1	%	ISO 527-2
Flexural Modulus (23°C)	16000	MPa	ISO 178
Flexural Stress (23°C)	310	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	8.0	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	45	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	325	°C	ISO 75-2/Ae
Glass Transition Temperature	143	°C	ISO 11357-2
Melting Temperature	343	°C	ISO 11357-3
Linear thermal expansion coefficient			ISO 11359-2
Flow: > 143°C	8.0E-6	cm/cm/°C	ISO 11359-2
Flow: < 143°C	8.0E-6	cm/cm/°C	ISO 11359-2
Lateral: < 143°C	4.5E-5	cm/cm/°C	ISO 11359-2
Lateral: 143°C	> 1.1E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	1800	J/kg/°C	DSC
Thermal Conductivity (23°C)	0.95	W/m/K	ISO 22007-4
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 (2.00 mm)	960	°C	IEC 60695-2-12
Toxicity			NES 713
CO Content	0.0500		NES 713
CO2 Content	0.120		NES 713
Total Gases	0.170		NES 713
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	550	Pa · s	ISO 11443
Injection	Nominal Value	Unit	
Drying Temperature	120 - 150	°C	
Drying Time	3.0 - 5.0	hr	
Hopper Temperature	< 100	°C	
Rear Temperature	375	°C	
Middle Temperature	380 - 385	°C	
Front Temperature	390	°C	
Nozzle Temperature	395	°C	
Mold Temperature	180 - 210	°C	
Injection instructions			
Runner: Die / nozzle >3mm, manifold >3.5mmGate: >2mm or 0.5 x part thickness			
NOTE			
1.	Crystalline		
2.	395°C nozzle, 200°C tool		

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