

VICTREX® ST™ ST45CA30

Polyetherketone Etherketone Ketone

Victrex plc

Message:

High performance thermoplastic material, 30% carbon fibre reinforced PolyEtherKetoneEtherKetoneKetone (PEKEKK), semi crystalline, granules for injection moulding, standard flow, colour black.

Applications for higher strength and stiffness at elevated temperatures 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			
Filler / Reinforcement	Carbon fiber reinforced material, 30% filler by weight		
Features	Semicrystallization		
	Low friction coefficient		
	Rigidity, high		
	High strength		
	Good liquidity		
	Good chemical resistance		
	Good wear resistance		
Appearance	Black		
Forms	Particles		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density ¹	1.41	g/cm³	ISO 1183
Spiral Flow ²			Internal method
-- ³	9.00	cm	Internal method
-- ⁴	41.0	cm	Internal method
Molding Shrinkage ⁵			ISO 294-4
Vertical flow direction	0.70	%	ISO 294-4
Flow direction	0.10	%	ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D, 23°C)	88		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	25000	MPa	ISO 527-2
Tensile Stress			ISO 527-2
Fracture, 23°C	270	MPa	ISO 527-2
Fracture, 125°C	180	MPa	ISO 527-2
Fracture, 175°C	120	MPa	ISO 527-2
Fracture, 275°C	70.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	1.7	%	ISO 527-2
Flexural Modulus (23°C)	23000	MPa	ISO 178

Flexural Stress			ISO 178
23°C	380	MPa	ISO 178
125°C	290	MPa	ISO 178
175°C	190	MPa	ISO 178
275°C	100	MPa	ISO 178
Compressive Stress			ISO 604
23°C	310	MPa	ISO 604
120°C	210	MPa	ISO 604
200°C	95.0	MPa	ISO 604
250°C	65.0	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	50	kJ/m ²	ISO 179/1U
Notched Izod Impact (23°C)	9.0	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	50	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	383	°C	ISO 75-2/Af
Glass Transition Temperature	162	°C	ISO 11357-2
Melting Temperature	387	°C	ISO 11357-3
Linear thermal expansion coefficient			ISO 11359-2
Flow: < 162°C	1.0E-5	cm/cm/°C	ISO 11359-2
Flow: > 162°C	1.3E-5	cm/cm/°C	ISO 11359-2
Horizontal: < 162°C	4.0E-5	cm/cm/°C	ISO 11359-2
Horizontal: > 162°C	9.5E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity (23°C)	0.95	W/m/K	ISO 22007-4
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ⁶ (23°C)	1.0E+5	ohms · cm	ASTM D4496
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (420°C)	560	Pa · s	ISO 11443
Injection	Nominal Value	Unit	
Drying Temperature	150 - 180	°C	
Drying Time	3.0 - 6.0	hr	
Hopper Temperature	< 100	°C	
Rear Temperature	390	°C	
Middle Temperature	400 - 405	°C	
Front Temperature	410	°C	
Nozzle Temperature	415	°C	
Mold Temperature	200 - 230	°C	
Injection instructions			
Runner: Die / nozzle >3mm, manifold >3.5mmGate: >2mm or 0.5 x part thickness			
NOTE			

1.	Crystalline
2.	Mold temperature: 210°C, melt temperature: 415°C
3.	1 mm
4.	3 mm
5.	415°C nozzle, 210°C tool
6.	1V

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