

VICTREX® PEEK 90HMF20

Polyetheretherketone

Victrex plc

Message:

High performance thermoplastic material, 20% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding, very easy flow, colour black.

Complex geometries with thinner cross sections or longer flow length where superior 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.

General Information			
Filler / Reinforcement	Carbon fiber reinforced material, 20% filler by weight		
Features	Semicrystallization		
	Low friction coefficient		
	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	1.37	g/cm³	ISO 1183
Spiral Flow	18.0	cm	Internal method
Molding Shrinkage ²			ISO 294-4
Vertical flow direction	0.60	%	ISO 294-4
Flow direction	0.0	%	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, 23°C)	87		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	22000	MPa	ISO 527-2
Tensile Stress			ISO 527-2
Fracture, 23°C	280	MPa	ISO 527-2
Fracture, 120°C	190	MPa	ISO 527-2
Fracture, 180°C	120	MPa	ISO 527-2
Fracture, 275°C	80.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	1.9	%	ISO 527-2
Flexural Modulus (23°C)	20000	MPa	ISO 178

Flexural Stress			ISO 178
23°C	400	MPa	ISO 178
120°C	290	MPa	ISO 178
180°C	180	MPa	ISO 178
275°C	100	MPa	ISO 178
Compressive Stress			ISO 604
23°C	270	MPa	ISO 604
120°C	200	MPa	ISO 604
200°C	90.0	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.5	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	60	kJ/m ²	ISO 179/1U
Notched Izod Impact (23°C)	9.5	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	60	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	347	°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	3.0E-6	cm/cm/°C	ISO 11359-2
Flow: < 143°C	5.5E-6	cm/cm/°C	ISO 11359-2
Lateral: < 143°C	4.0E-5	cm/cm/°C	ISO 11359-2
Lateral: > 143°C	1.0E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	1800	J/kg/°C	DSC
Thermal Conductivity (23°C)	1.0	W/m/K	ISO 22007-4
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ³ (23°C)	1.0E+5	ohms · cm	ASTM D4496
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	200	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	365	°C	
Middle Temperature	370 - 375	°C	
Front Temperature	380	°C	
Nozzle Temperature	385	°C	
Mold Temperature	180 - 200	°C	
Injection instructions			
Runner: Die / nozzle >3mm, manifold >3.5mmGate: >2mm or 0.5 x part thickness			
NOTE			

1.	Crystalline
2.	385°C nozzle, 190°C tool
3.	1V

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