

VICTREX® PEEK™ 90HMF40

➤ **Product Description:**

High performance thermoplastic material, 40% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding, easy flow, colour black.

➤ **Typical Application Areas:**

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.

➤ **Material Properties**

	CONDITIONS	TEST METHOD	UNITS	TYPICAL VALUE
Mechanical Data				
Tensile Strength	Break, 23°C	ISO 527	MPa	330
	Break, 120°C			230
	Break, 180°C			140
	Break, 275°C			85
Tensile Elongation	Break, 23°C	ISO 527	%	1.2
Tensile Modulus	23°C	ISO 527	GPa	45
Flexural Strength	23°C	ISO 178	MPa	480
	120°C			370
	180°C			210
	275°C			120
Flexural Modulus	23°C	ISO 178	GPa	37
Compressive Strength	23°C	ISO 604	MPa	310
	120°C			250
	200°C			120
Charpy Impact Strength	Notched, 23°C	ISO 179/1eA	kJ m ⁻²	8.0
	Unnotched, 23°C	ISO 179/1U		60
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m ⁻²	10.5
	Unnotched, 23°C	ISO 180/U		60
Thermal Data				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
Specific Heat Capacity	23°C	DSC	kJ kg ⁻¹ °C ⁻¹	1.8
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm °C ⁻¹	3.0
	Average below Tg			35
	Along flow above Tg			1.0
	Average above Tg			80
Heat Deflection Temperature	1.8 MPa	ISO 75A-f	°C	349
Flow				
Melt Viscosity	400°C	ISO 11443	Pa.s	330

Miscellaneous				
Density	Crystalline	ISO 1183	g cm ⁻³	1.45
Shore D hardness	23°C	ISO 868		91
Water Absorption (3.2mm thick Tensile bar)	24h, 23°C	ISO 62-1	%	0.03
(by immersion)	Equilibrium, 23°C			0.3

Recommended Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h
Temperature settings	365 / 370 / 375 / 380 / 385°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	190°C - 200°C (max 250°C)
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>2mm or 0.5 x part thickness

Mould Shrinkage and Spiral Flow					
Spiral Flow	380°C nozzle, 190°C tool	1mm thick section	Victrex	mm	100
Mould Shrinkage	380°C nozzle, 190°C tool	Along flow	ISO 294-4	%	0.0
		Across flow			0.4

Detailed data available on our website www.victrex.com or upon request



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