

VICTREX® PEEK™ 450G

➤ **Product Description:**

High performance thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour natural/beige.

➤ **Typical Application Areas:**

Applications for higher strength and stiffness as well as high ductility. Chemically resistant to aggressive environments, suitable for sterilization for medical and food contact applications.

➤ **Material Properties**

	CONDITIONS	TEST METHOD	UNITS	TYPICAL VALUE
Mechanical Data				
Tensile Strength	Break, 23 °C	ISO 527	MPa	100
	Break, 125 °C			50
	Break, 175 °C			18
	Break, 225 °C			13
Tensile Elongation	Break, 23 °C	ISO 527	%	45
Tensile Modulus	23 °C	ISO 527	GPa	3.7
Flexural Strength	23 °C	ISO 178	MPa	165
Flexural Modulus	23 °C	ISO 178	GPa	4.1
Compressive Strength	23 °C	ISO 604	MPa	120
	120 °C			70
Charpy Impact Strength	Notched, 23 °C	ISO 179/1eA	kJ m ⁻²	7.0
Izod Impact Strength	Notched, 23 °C	ISO 180/A	kJ m ⁻²	7.5
	Unnotched, 23 °C	ISO 180/U		n/b
Thermal Data				
Melting Point		ISO 3146	°C	343
Glass Transition (Tg)		ISO 3146	°C	143
Specific Heat Capacity	23 °C	DSC	kJ kg ⁻¹ °C ⁻¹	2.2
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm °C ⁻¹	45
	Average below Tg			55
	Along flow above Tg			120
	Average above Tg			140
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	152
Thermal Conductivity	23 °C	ISO/CD 22007-4	W m ⁻¹ °C ⁻¹	0.29
Continuous Use Temperature	Electrical	UL 746B	°C	260
	Mechanical w/o impact			240
	Mechanical w/impact			180
Flow				
Melt Viscosity	400 °C	ISO 11443	Pa.s	350

Miscellaneous				
Density	Crystalline	ISO 1183	g cm ⁻³	1.30
	Amorphous			1.26
Shore D hardness	23 °C	ISO 868		87
Water Absorption (3.2mm thick Tensile bar) (by immersion)	24 h, 23 °C	ISO 62-1	%	0.07
	Equilibrium, 23 °C			0.4

Electrical Properties				
Dielectric Strength	2.5mm thickness	IEC 248	kV mm ⁻¹	16
	50µm thickness			190
Comparative Tracking Index		IEC 112	V	150
Loss Tangent	23 °C, 1MHz	IEC 112	n/a	0.003
Dielectric Constant	23 °C, 50Hz	IEC 250	n/a	3.2
	200 °C, 50Hz			4.5
Volume Resistivity	23 °C	IEC 93	Ωcm	10 ¹⁶
	125 °C			10 ¹⁵
	275 °C			10 ⁹

Fire Smoke Toxicity				
Flammability Rating		UL94	n/a	V-0 @ 1.5 mm
Glow Wire Test	2mm thickness	IEC 60695-2-12	°C	960
Limiting Oxygen Index	0.4mm thickness	ISO 4239	% O ₂	24
	3.2mm thickness			35
Toxicity Index	CO content	NES 713	n/a	0.074
	CO ₂ content			0.15
	Total gases			0.22

Recommended Processing Conditions	
Drying Temperature / Time	150 °C / 3h or 120 °C / 5h
Temperature settings	355 / 365 / 370 / 375 °C (Nozzle)
Hopper Temperature	Not greater than 100 °C
Mould Temperature	170 °C - 200 °C (max 250 °C)
Mould Shrinkage	Along Flow, 3 mm, 170 °C mould, 1.6%
	Across flow, 3 mm, 170 °C mould, 1.9%
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>1mm or 0.5 x part thickness

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

World Headquarters

Victrex plc, Hillhouse International, Thornton Cleveleys, Lancashire FY5 4QD United Kingdom
 Tel: + (44) 1253 897700 Fax: + (44) 1253 897701 Email: victrexplc@victrex.com

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