

# 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
<b>Mechanical Data</b>				
Tensile Strength	Yield, 23°C	ISO 527	MPa	100
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
	125°C			85
	140°C			60
	150°C			38
	165°C			20
	185°C			18
	275°C			13
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 <sup>-2</sup>	7.0
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m <sup>-2</sup>	7.5
	Unnotched, 23°C	ISO 180/U		n/b
<b>Thermal Data</b>				
Melting Point		ISO 11357	°C	343
Glass Transition (Tg)	Onset	ISO 11357	°C	143
Specific Heat Capacity	23°C	DSC	kJ kg <sup>-1</sup> °C <sup>-1</sup>	2.2
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm °C <sup>-1</sup>	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 <sup>-1</sup> °C <sup>-1</sup>	0.29
Continuous Use Temperature	Electrical	UL 746B	°C	260
	Mechanical w/o impact			240
	Mechanical w/impact			180
<b>Flow</b>				
Melt Viscosity	400°C	ISO 11443	Pa.s	350

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

Electrical Properties				
Dielectric Strength	2.5mm thickness	IEC 60243-1	kV mm <sup>-1</sup>	16
	50µm thickness			190
Comparative Tracking Index		IEC 60112	V	150
Loss Tangent	23°C, 1MHz	IEC 60250	n/a	0.003
Dielectric Constant	23°C, 50Hz	IEC 60250	n/a	3.2
	200°C, 50Hz			4.5
Volume Resistivity	23°C	IEC 60093	Ωcm	10 <sup>16</sup>
	125°C			10 <sup>15</sup>
	275°C			10 <sup>9</sup>

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 <sub>2</sub>	24
	3.2mm thickness			35
Toxicity Index	CO content	NES 713	n/a	0.074
	CO <sub>2</sub> content			0.15
	Total gases			0.22

Recommended Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h
Temperature settings	355 / 360 / 365 / 370 / 375°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	170°C - 200°C (max 250°C)
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>1mm or 0.5 x part thickness

Mould Shrinkage and Spiral Flow					
Spiral Flow	375°C nozzle, 180°C tool	1mm thick section	Victrex	mm	110
Mould Shrinkage	375°C nozzle, 180°C tool	Along flow	ISO 294-4	%	1.0
		Across flow			1.3

Detailed data available on our website [www.victrex.com](http://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](mailto:victrexplc@victrex.com)

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