

VICTREX® HT™ G45

➤ **Product Description:**

High performance thermoplastic material, unreinforced PolyEtherKetone (PEK), semi crystalline, depth filtered granules for injection moulding, low flow, FDA food contact compliant, colour natural/beige.

➤ **Typical Application Areas:**

Applications for high strength and stiffness as well as good ductility at higher temperatures. 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	Yield, 23°C	ISO 527	MPa	115
Tensile Elongation	Break, 23°C	ISO 527	%	30
Tensile Modulus	23°C	ISO 527	GPa	3.7
Flexural Strength	23°C	ISO 178	MPa	185 *
	125°C			110 *
	175°C			32 *
	275°C			16 *
Flexural Modulus	23°C	ISO 178	GPa	4.2
Compressive Strength	23°C	ISO 604	MPa	140 *
	120°C			90 *
	200°C			30 *
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m ⁻²	7.0
	Unnotched, 23°C	ISO 180/U		n/b
Thermal Data				
Melting Point		ISO 11357	°C	373
Glass Transition (Tg)	Onset	ISO 11357	°C	152
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			75 *
	Average above Tg			130 *
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	163 *
Thermal Conductivity	23°C	ISO/CD 22007-4	W m ⁻¹ °C ⁻¹	0.29 **
Flow				
Melt Viscosity	400°C	ISO 11443	Pa.s	400
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)	24h, 23°C	ISO 62-1	%	0.07
	Equilibrium, 23°C			0.6

Electrical Properties				
Dielectric Strength	2.5mm thickness	IEC 60243-1	kV mm ⁻¹	17
Comparative Tracking Index		IEC 60112	V	150 **
Volume Resistivity	23 °C	IEC 60093	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 4589	% 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 **

* Result based on HT G22

** Result based on 450G

Recommended Processing Conditions	
Drying Temperature / Time	150 °C / 3h or 120 °C / 5h
Temperature settings	390 / 395 / 405 / 410 / 415 °C (Nozzle)
Hopper Temperature	Not greater than 100 °C
Mould Temperature	200 °C - 220 °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	415 °C nozzle, 220 °C tool	1mm thick section	Victrex	mm	190
Mould Shrinkage	415 °C nozzle, 220 °C tool	Along flow	ISO 294-4	%	1.0
		Across flow			

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

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