

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 sterilisation 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	At 3.5% strain, 23°C	ISO 178	MPa	140 *
	At yield, 23°C			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 (T _g)	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 T _g	ISO 11359	ppm K ⁻¹	45 *
	Average below T _g			55 *
	Along flow above T _g			75 *
	Average above T _g			130 *
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	163 *
Thermal Conductivity	23°C	ISO 22007-4	W m ⁻¹ K ⁻¹	0.29
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		85.5
Water Absorption (3.2mm thick Tensile bar)	24h, 23°C	ISO 62-1	%	0.07
	Equilibrium, 23°C			0.6

Electrical Properties				
Dielectric Strength	2mm thickness	IEC 60243-1	kV mm ⁻¹	23 *
Comparative Tracking Index		IEC 60112	V	150 *
Volume Resistivity	23°C	IEC 60093	Ω cm	10 ¹⁶ *
	125°C			10 ¹⁵ *
	275°C			10 ⁹ *
Fire Smoke Toxicity				
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 similar products

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			1.2

Important note:

Data are generated in accordance with prevailing national, international and internal standards, and should be used for material comparison. Actual property values are highly dependent on part geometry, mould configuration and processing conditions. Properties may also differ for along flow and across flow directions

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

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