

# VICTREX® ST™ STG45

➤ **Product Description:**

High performance thermoplastic material, unreinforced PolyEtherKetoneEtherKetoneKetone (PEKEKK), semi crystalline, depth filtered granules for injection moulding, standard flow, 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.

➤ **Material Properties**

	CONDITIONS	TEST METHOD	UNITS	TYPICAL VALUE
<b>Mechanical Data</b>				
Tensile Strength	Yield, 23°C	ISO 527	MPa	115
Tensile Elongation	Break, 23°C	ISO 527	%	20
Tensile Modulus	23°C	ISO 527	GPa	4.3
Flexural Strength	23°C	ISO 178	MPa	180
	125°C			110
	140°C			95
	150°C			80
	165°C			50
	185°C			28
	275°C			21
Flexural Modulus	23°C	ISO 178	GPa	4.1
Compressive Strength	23°C	ISO 604	MPa	145
	120°C			90
	200°C			35
Charpy Impact Strength	Notched, 23°C	ISO 179/1eA	kJ m <sup>-2</sup>	4.0
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m <sup>-2</sup>	6.0
	Unnotched, 23°C	ISO 180/U		n/b
<b>Thermal Data</b>				
Melting Point		ISO 3146	°C	387
Glass Transition (Tg)	Onset	ISO 3146	°C	162
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm °C <sup>-1</sup>	45
	Average below Tg			55
	Along flow above Tg			105
	Average above Tg			125
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	172
Thermal Conductivity	23°C	ISO/CD 22007-4	W m <sup>-1</sup> °C <sup>-1</sup>	0.29 *
<b>Flow</b>				
Melt Viscosity	420°C	ISO 11443	Pa.s	220
<b>Miscellaneous</b>				
Density	Crystalline	ISO 1183	g cm <sup>-3</sup>	1.30
	Amorphous			1.26

Electrical Properties				
Dielectric Strength	2.5mm thickness	IEC 60243-1	kV mm <sup>-1</sup>	21
Comparative Tracking Index		IEC 60112	V	150 *
Loss Tangent	23°C, 1 MHz	IEC 60250	n/a	0.004
Dielectric Constant	23°C, 1 kHz	IEC 60250	n/a	3.0

\* Result based on 450G

Recommended Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h
Temperature settings	375 / 380 / 385 / 390 / 395°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	395°C nozzle, 200°C tool	1mm thick section	Victrex	mm	160
	415°C nozzle, 220°C tool				190
Mould Shrinkage	395°C nozzle, 200°C tool	Along flow	ISO294-4	%	1.1
		Across flow			1.2
	415°C nozzle, 220°C tool	Along flow			1.4
		Across flow			1.6

Detailed data available on our website [www.victrex.com](http://www.victrex.com) or upon request

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