

## VICTREX® WG™ 102

### ➤ Product Description:

High performance thermoplastic material, PolyArylEtherKetone (PAEK), semi crystalline, granules for injection moulding, standard flow, reinforced with wear additives, colour black.

WG102 does not contain polytetrafluoroethylene (PTFE) or other halogenated additives.

### ➤ Typical Application Areas:

Higher temperature tribological applications for high strength and stiffness. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments.

### ➤ Material Properties

	CONDITIONS	TEST METHOD	UNITS	TYPICAL VALUE
<b>Mechanical Data</b>				
Tensile Strength	Break, 23°C	ISO 527	MPa	195
	Break, 125°C			130
	Break, 175°C			85
	Break, 275°C			55
Tensile Elongation	Break, 23°C	ISO 527	%	2.0
Tensile Modulus	23°C	ISO 527	GPa	19.5
Flexural Strength	23°C	ISO 178	MPa	290
	125°C			220
	175°C			145
	275°C			75
Flexural Modulus	23°C	ISO 178	GPa	17
Compressive Strength	23°C	ISO 604	MPa	250
	120°C			145
	200°C			75
	250°C			55
Charpy Impact Strength	Notched, 23°C	ISO 179/1eA	kJ m <sup>-2</sup>	5.0
	Unnotched, 23°C	ISO 179/1U		35
Izod Impact Strength	Notched, 23°C	ISO 180/A	kJ m <sup>-2</sup>	6.0
	Unnotched, 23°C	ISO 180/U		40
<b>Thermal Data</b>				
Melting Point		ISO 11357	°C	373
Glass Transition (Tg)	Onset	ISO 11357	°C	152
	Midpoint			160
Coefficient of Thermal Expansion	Along flow below Tg	ISO 11359	ppm K <sup>-1</sup>	9
	Average below Tg			35
	Along flow above Tg			10
	Average above Tg			90
Heat Deflection Temperature	1.8 MPa	ISO 75-f	°C	367
Thermal Conductivity	Along flow, 23°C	ISO 22007-4	W m <sup>-1</sup> K <sup>-1</sup>	2.2
	Average, 23°C			1.3
<b>Flow</b>				
Melt Viscosity	400°C	ISO 11443	Pa.s	575

Miscellaneous				
Density	Crystalline	ISO 1183	g cm <sup>-3</sup>	1.44
Shore D hardness	23°C	ISO 868		86

Electrical Properties				
Volume Resistivity	23°C, 1V	IEC 60093	Ω cm	10 <sup>7</sup>

Typical Processing Conditions	
Drying Temperature / Time	150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Temperature settings	390 / 395 / 400 / 405 / 410°C (Nozzle)
Hopper Temperature	Not greater than 100°C
Mould Temperature	190°C - 215°C
Runner	Die / nozzle >3mm, manifold >3.5mm
Gate	>2mm or 0.5 x part thickness

Mould Shrinkage and Spiral Flow					
Spiral Flow	410°C nozzle, 190°C tool	1mm thick section	Victrex	mm	85
		3mm thick section			360
Mould Shrinkage	410°C nozzle, 190°C tool	Along flow	ISO 294-4	%	0.1
		Across flow			0.6

#### Important notes:

- Processing conditions quoted in our datasheets are typical of those used in our processing laboratories  
*Data for mould shrinkage should be used for material comparison. Actual mould shrinkage values are highly dependent on part geometry, mould configuration, and processing conditions.*  
*Mould shrinkage differs for along flow and across flow directions. "Along flow" direction is taken as the direction the molten material is travelling when it exits the gate and enters the mould.*  
*Mould shrinkage is expressed as a percent change in dimension of a specimen in relation to mould dimensions.*
- 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](http://www.victrex.com) or upon request



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