

VICTREX™ PEEK POLYMER 90G

General Information

Product Description

High performance thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, depth filtered granules for injection moulding, very easy flow, colour natural/beige.

Complex geometries with thinner cross sections or longer flow lengths, for high strength and stiffness as well as good ductility. Chemically resistant to aggressive environments, suitable for sterilization for medical and food contact applications

Material Properties			
Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.30	g/cm³	ISO 1183
Spiral Flow			Internal Method
_1	24.5	cm	
2	28.0	cm	
3	33.0	cm	
Molding Shrinkage ⁴			ISO 294-4
Across Flow	1.3	%	
Flow	1.0	%	
Water Absorption (Saturation, 23°C)	0.45	%	ISO 62
Water AbsorptionSaturation (100°C)	0.55	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	4100	MPa	ISO 527-1
Tensile Stress (Yield, 23°C)	105	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	20	%	ISO 527-2
Flexural Modulus (23°C)	3900	MPa	ISO 178
Flexural Stress			ISO 178
23°C ⁵	175	MPa	
3.5% Strain, 23°C	130	MPa	
125°C	90.0	MPa	
175°C	20.0	MPa	
275°C	13.5	MPa	
Compressive Stress			ISO 604
23°C	130	MPa	
120°C	80.0	MPa	
mpact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	4.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	No Break		ISO 179
Notched Izod Impact Strength (23°C)	4.5	kJ/m²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	No Break		ISO 180
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 23°C)	85.0		ISO 868
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	156	°C	
1.8 MPa, Annealed ⁶	167	°C	

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Mould Temperature

Volume Resistivity IEC 60093 23°C 1.0E+16 ohms·cm 125°C 1.0E+15 ohms·cm 275°C 1.0E+9 ohms·cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Flammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443	Thermal	Nominal Value	Unit	Test Method
CLTE - Flow	Glass Transition Temperature (Onset)	143	°C	ISO 11357-2
< 143°C	Melting Temperature	343	°C	ISO 11357-3
S	CLTE - Flow			ISO 11359-2
CLTE - Average	< 143°C	50	ppm/K	
* 143°C 55 ppm/K * 143°C 140 ppm/K Thermal Conductivity 80.22 07.4 18.02 2007.4 23°C 7 0.29 Wm/K 23°C 8 0.32 Wm/K Electrical Nominal Value Unit Test Method Volume Resistivity IEC 60093 23°C 1.0E+16 ohms-cm 125°C 1.0E+15 ohms-cm 275°C 1.0E+15 ohms-cm 125°C 1.0E+16 ohms-cm 275°C 1.0E+15 ohms-cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60250 Dissipation Factor (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 kHz) Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960°C IEC 60695-2-12 Ell Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Exprise Information Nominal Value Unit Lec 60695-2-12 Entrying Temperature 120 to 150°C C </td <td>> 143°C</td> <td>120</td> <td>ppm/K</td> <td></td>	> 143°C	120	ppm/K	
> 143°C 140° pm/K Thermal Conductivity ISO 22007-4 23°C 7 0.29 W/m/K 23°C 9 0.32 W/m/K Electrical Nominal Value Unit Test Method Volume Resistivity IEC 60093 23°C 1.0E+16 ohms-cm 125°C 1.0E+15 ohms-cm 275°C 1.0E+9 ohms-cm Dielectric Strength (2.00 mm) 23.0 k/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60250 Electric Constant (23°C, 1 MHz) Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Fill Analysis Nominal Value Unit Test Method Mell Viscosity (40°C) Pars ISO 11443 Spical Processing Information Nominal Value Unit Test Method Drying Temper	CLTE - Average			ISO 11359-2
Thermal Conductivity 23°C 7 0.29 W/m/K 23°C 8 0.32 W/m/K 25°C 10.0E+10 0.0ms·cm 1.0E+10 0.0ms·cm 1.25°C 1.0E+10 0.0ms·cm 1.25°C 1.0E+9 0.0ms·cm 1.0E+9 0	< 143°C	55	ppm/K	
23°C 7 0.29 W/m/K 23°C 8 0.32 W/m/K Electrical Nominal Value Unit Test Method Volume Resistivity I.0E+18 ohms-cm 23°C 1.0E+16 ohms-cm 125°C 1.0E+15 ohms-cm 275°C 1.0E+16 ohms-cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60250 Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60895-2-12 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Expirate Processing Information Nominal Value Unit Topying Temperature 3.0 to 5.0 r Drying Time 3.0 to 5.0 r Proper Temperature 100 °C Middl	> 143°C	140	ppm/K	
23°C 8 0.32 W/m/K Electrical Nominal Value Unit Test Method Volume Resistivity IEC 60093 23°C 1.0E+16 ohms·cm 125°C 1.0E+9 ohms·cm 275°C 1.0E+9 ohms·cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.1 KV/mm IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Planmability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60895-2-12 Ell Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Spice IProcessing Information Nominal Value Unit Unit Unity Test Method Nominal Value Unit Test Method Projung Temperature 3.0 to 5.0 hr	Thermal Conductivity			ISO 22007-4
Nominal Value Unit Test Method	23°C ⁷	0.29	W/m/K	
Volume Resistivity IEC 60093 23°C 1.0E+16 ohms cm 125°C 1.0E+15 ohms cm 275°C 1.0E+9 ohms cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Iammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 III Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Spical Processing Information Nominal Value Unit Implection Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	23°C ⁸	0.32	W/m/K	
23°C 1.0E+16 ohms·cm 125°C 1.0E+15 ohms·cm 275°C 1.0E+9 ohms·cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 6012 Filmamability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Spical Processing Information Nominal Value Unit Injection Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature 3.0 to 5.0 hr Hopper Temperature 3.0 to 5.0 *C Middle Temperature 350 *C	Electrical	Nominal Value	Unit	Test Method
125°C 1.0E+15 ohms-cm 275°C 1.0E+9 ohms-cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 kHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Fammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Expirate Processing Information Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature 3.0 to 5.0 C Rear Temperature 350 °C Middle Temperature 355 °C Front Temperature 355 °C	Volume Resistivity			IEC 60093
275°C 1.0E+9 ohms-cm Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Islammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Isl Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa-s ISO 11443 Expirection Nominal Value Unit Unit Test Method Drying Temperature 120 to 150 °C C Drying Time 3.0 to 5.0 hr F Hopper Temperature 3.0 to 5.0 °C E Rear Temperature 350 °C F Middle Temperature 355 °C F	23°C	1.0E+16	ohms·cm	
Dielectric Strength (2.00 mm) 23.0 kV/mm IEC 60243-1 Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Comparative Tracking Index 150 V IEC 60112 Comparative Flammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 III Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Viscosity (400°C) 90.0 Pa·s ISO 11443 Viscosity Tracking Information Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature 3.0 to 5.0 hr Hopper Temperature 350 °C Middle Temperature 355 °C Front Temperature 355 °C	125°C	1.0E+15	ohms·cm	
Dielectric Constant (23°C, 1 kHz) 3.10 IEC 60250 Dissipation Factor (23°C, 1 MHz) 4.0E-3 IEC 60250 Comparative Tracking Index 150 V IEC 60112 Comparative Tracking Index 150 V IEC 60112 Comparative Tracking Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Comparative Flammability In	275°C	1.0E+9	ohms·cm	
Dissipation Factor (23°C, 1 MHz)	Dielectric Strength (2.00 mm)	23.0	kV/mm	IEC 60243-1
Comparative Tracking Index 150 V IEC 60112 Elammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 It Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Typical Processing Information Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	Dielectric Constant (23°C, 1 kHz)	3.10		IEC 60250
Flammability Nominal Value Unit Test Method Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Typical Processing Information Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	Dissipation Factor (23°C, 1 MHz)	4.0E-3		IEC 60250
Glow Wire Flammability Index (2.0 mm) 960 °C IEC 60695-2-12 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Fypical Processing Information Injection Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	Comparative Tracking Index	150	V	IEC 60112
Nominal Value Unit Test Method Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Typical Processing Information Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 120 to 5.0 hr Hopper Temperature 3.0 to 5.0 hr Hopper Temperature 350 °C Middle Temperature 355 °C Front Temperature 355 °C	Flammability	Nominal Value	Unit	Test Method
Melt Viscosity (400°C) 90.0 Pa·s ISO 11443 Typical Processing Information Injection Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	Glow Wire Flammability Index (2.0 mm)	960	°C	IEC 60695-2-12
Typical Processing Information njection Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature <100 °C Rear Temperature 350 °C Middle Temperature 355 °C Front Temperature 355 °C	Fill Analysis	Nominal Value	Unit	Test Method
Nominal Value Unit Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	Melt Viscosity (400°C)	90.0	Pa·s	ISO 11443
Drying Temperature 120 to 150 °C Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C Rear Temperature 350 °C Middle Temperature 355 °C Front Temperature 355 °C	Typical Processing Information			
Drying Time 3.0 to 5.0 hr Hopper Temperature < 100 °C	Injection	Nominal Value	Unit	
Hopper Temperature < 100 °C Rear Temperature 350 °C Middle Temperature 355 °C Front Temperature 355 °C	Drying Temperature	120 to 150	°C	
Rear Temperature350 °CMiddle Temperature355 °CFront Temperature355 °C	Drying Time	3.0 to 5.0	hr	
Middle Temperature 355 °C Front Temperature 355 °C	Hopper Temperature	< 100	°C	
Front Temperature 355 °C	Rear Temperature	350	°C	
	Middle Temperature	355	°C	
Nozzle Temperature 360 °C	Front Temperature	355	°C	
	Nozzle Temperature	360	°C	

160 to 200 °C

VICTREX™ PEEK POLYMER 90G

Injection Notes

Runner: Die / nozzle >3mm, manifold >3.5mm

Gate: >1mm or 0.5 x part thickness

Important notes:

- 1) 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.
- 2) 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.

Notes

- Mould Temperature: 160°C, Melt Temperature: 365°C, 1.00 mm
 Mould Temperature: 180°C, Melt Temperature: 375°C, 1.00 mm
 Mould Temperature: 200°C, Melt Temperature: 400°C, 1.00 mm
 4 360°C nozzle, 160°C tool
 5 At yield
 200°C/4h
 7 Average
- ⁸ Along flow

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