

VICTREX™ PEEK POLYMER 450GL20

General Information

Product Description

High performance thermoplastic material, 20% glass fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, colour natural/beige.

Applications for higher strength in a static system. Low coefficient of thermal expansion. Chemically resistant to aggressive environments, suitable for sterilization for medical and food contact applications.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.43	g/cm ³	ISO 1183
Spiral Flow ¹	10.0	cm	Internal Method
Molding Shrinkage ²			ISO 294-4
Across Flow	0.90	%	
Flow	0.30	%	
Water Absorption (Saturation, 23°C)	0.40	%	ISO 62
Water Absorption Saturation (100°C)	0.45	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	8800	MPa	ISO 527-1
Tensile Stress (Break, 23°C)	160	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	3.4	%	ISO 527-2
Flexural Modulus (23°C)	8300	MPa	ISO 178
Flexural Stress (23°C)	250	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength (23°C)	10.0	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	65.0	kJ/m ²	ISO 180
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 23°C)	85.5		ISO 868
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	315	°C	
Glass Transition Temperature			ISO 11357-2
Onset	143	°C	
Midpoint	150	°C	
Melting Temperature	343	°C	ISO 11357-3
CLTE - Flow			ISO 11359-2
< 143°C	20	ppm/K	
> 143°C	22	ppm/K	
CLTE - Average			ISO 11359-2
< 143°C	45	ppm/K	
> 143°C	120	ppm/K	
Thermal Conductivity			ISO 22007-4
23°C ³	0.30	W/m/K	
23°C ⁴	0.35	W/m/K	

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Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Dielectric Strength (2.00 mm)	24.0	kV/mm	IEC 60243-1
Dielectric Constant (23°C, 1 kHz)	3.10		IEC 60250
Dissipation Factor (23°C, 1 MHz)	5.0E-3		IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	475	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
Rear Temperature	360	°C
Middle Temperature	365 to 370	°C
Front Temperature	375	°C
Nozzle Temperature	380	°C
Mould Temperature	170 to 200	°C

Injection Notes
Runner: Die / nozzle >3mm, manifold >3.5mm
Gate: >2mm or 0.5 x part thickness

Notes

¹ Mould Temperature: 190°C, Melt Temperature: 380°C, 1.00 mm
² 380°C nozzle, 190°C tool
³ Average
⁴ Along flow