VICTREX™ PEEK POLYMER 450GL30BLK

General Information

Product Description

High performance thermoplastic material, 30% glass fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard viscosity, colour black.

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)	1.51	g/cm³	ISO 1183
Spiral Flow			Internal Method
-- [1]	8.50	cm	
-- [2]	41.0	cm	
Molding Shrinkage [3]			ISO 294-4
Across Flow	0.90	%	
Flow	0.30	%	
Water Absorption (Saturation, 23°C)	0.30	%	ISO 62
Water AbsorptionSaturation (100°C)	0.45	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	11500	MPa	ISO 527-1
Tensile Stress			ISO 527-2
Break, 23°C	175	MPa	
Break, 125°C	120	MPa	
Break, 175°C	60.0	MPa	
Break, 225°C	35.0	MPa	
Tensile Strain (Break, 23°C)	2.4	%	ISO 527-2
Flexural Modulus (23°C)	11000	MPa	ISO 178
Flexural Stress			ISO 178
23°C	250	MPa	
125°C	190	MPa	
175°C	80.0	MPa	
225°C	50.0	MPa	
Compressive Stress			ISO 604
23°C	250	MPa	
120°C	160	MPa	
200°C	55.0	MPa	
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact Strength (23°C)	10.5	kJ/m²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	55.0	kJ/m²	ISO 180
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D, 23°C)	87.5		ISO 868
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	328	°C	

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Thermal	Nominal Value	Unit	Test Method
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	18	ppm/K	
> 143°C	18	ppm/K	
CLTE - Average			ISO 11359-2
< 143°C	45	ppm/K	
> 143°C	110	ppm/K	
Thermal Conductivity			ISO 22007-4
23°C [4]	0.30	W/m/K	
23°C [5]	0.35	W/m/K	
RTI Elec	240	°C	UL 746B
RTI Imp	220	°C	UL 746B
RTI Str	240	°C	UL 746B
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity (23°C)	5.0E+15	ohms·cm	IEC 60093
Dielectric Strength (2.00 mm)	21.5	kV/mm	IEC 60243-1
Dielectric Constant (23°C, 1 kHz)	3.30		IEC 60250
Dissipation Factor (23°C, 1 MHz)	5.0E-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)	550	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	370 to 375	°C
Front Temperature	380	°C
Nozzle Temperature	385	°C
Mould Temperature	180 to 200	°C

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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: 385°C, 1.00 mm

[2] Mould Temperature: 190°C, Melt Temperature: 385°C, 3.00 mm

[3] 385°C nozzle, 190°C tool

[4] Average

[5] Along flow