VICTREX™ PEEK POLYMERS 450CA30

General Information

Product Description

High performance thermoplastic material, 30% carbon fibre reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour black.

Applications for higher strength and stiffness in a static or dynamic system. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.40	g/cm³	ISO 1183
Spiral Flow			Internal Method
-- [1]	7.50	cm	
-- [2]	33.0	cm	
Molding Shrinkage [3]			ISO 294-4
Across Flow	0.50	%	
Flow	0.10	%	
Water Absorption (Saturation, 23°C)	0.30	%	ISO 62
Water Absorption - Saturation (100°C)	0.45	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	28000	MPa	ISO 527-1
Tensile Stress			ISO 527-2
Break, 23°C	265	MPa	
Break, 125°C	160	MPa	
Break, 175°C	85.0	MPa	
Break, 275°C	50.0	MPa	
Tensile Strain (Break, 23°C)	1.7	%	ISO 527-2
Flexural Modulus (23°C)	24000	MPa	ISO 178
Flexural Stress			ISO 178
23°C	380	MPa	
125°C	275	MPa	
175°C	130	MPa	
275°C	65.0	MPa	
Compressive Stress			ISO 604
23°C	320	MPa	
120°C	200	MPa	
200°C	70.0	MPa	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	7.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	45	kJ/m²	ISO 179/1U
Notched Izod Impact Strength (23°C)	11	kJ/m²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	50	kJ/m²	ISO 180
Hardness	**Nominal Value**	**Unit**	**Test Method**
Shore Hardness (Shore D, 23°C)	88		ISO 868

VICTREX™ PEEK POLYMERS 450CA30

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	336	°C	
Glass Transition Temperature			ISO 11357-2
Onset	143	°C	
Midpoint	150	°C	
Melting Temperature	343	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow : < 143°C	5.0E-6	cm/cm/°C	
Flow : > 143°C	6.0E-6	cm/cm/°C	
Transverse : < 143°C	4.0E-5	cm/cm/°C	
Transverse : > 143°C	1.0E-4	cm/cm/°C	
Thermal Conductivity			ISO 22007-4
23°C [4]	0.95	W/m/K	
23°C [5]	2.0	W/m/K	
RTI Imp	200	°C	UL 746B
RTI Str	240	°C	UL 746B

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity [6] (23°C)	1.0E+5	ohms·cm	ASTM D4496

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)	675	Pa·s	ISO 11443

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	375	°C
Middle Temperature	380 to 385	°C
Front Temperature	390	°C
Nozzle Temperature	395	°C
Mold Temperature	180 to 210	°C

Injection Notes

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

Gate: >2mm or 0.5 x part thickness

Notes

[1] Mold Temperature: 200°C, Melt Temperature: 395°C, 1.00 mm

[2] Mold Temperature: 200°C, Melt Temperature: 395°C, 3.00 mm

[3] 395°C nozzle, 200°C tool

[4] Average

[5] Along flow

[6] 1V

VICTREX™ PEEK POLYMERS 450CA30

Revision Date: 7/17/2023