VICTREX™ PEEK POLYMERS 450FE20

General Information

Product Description

High performance thermoplastic material, 20% filled with PTFE PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour natural / beige.

Tribological applications. Excellent wear resistance, very low coefficient of friction. Chemically resistant to aggressive environments.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.40	g/cm³	ISO 1183
Spiral Flow [1]	13.0	cm	Internal Method
Molding Shrinkage [2]			ISO 294-4
Across Flow	1.7	%	
Flow	1.2	%	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	3200	MPa	ISO 527-1
Tensile Stress (Yield, 23°C)	78.0	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	25	%	ISO 527-2
Flexural Modulus (23°C)	3200	MPa	ISO 178
Flexural Stress			ISO 178
23°C [3]	125	MPa	
3.5% Strain, 23°C	100	MPa	
125°C	70.0	MPa	
175°C	18.0	MPa	
275°C	13.0	MPa	
Compressive Stress			ISO 604
23°C	105	MPa	
120°C	65.0	MPa	
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	6.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	No Break		ISO 179
Notched Izod Impact Strength (23°C)	8.0	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)	81		ISO 868

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	150	°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	4.0E-5	cm/cm/°C	
Flow : > 143°C	1.2E-4	cm/cm/°C	
Transverse : < 143°C	6.0E-5	cm/cm/°C	
Transverse : > 143°C	1.4E-4	cm/cm/°C	

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Electric Strength (2.00 mm)	26	kV/mm	IEC 60243-1
Dielectric Constant (23°C, 1 kHz)	2.80		IEC 60250
Dissipation Factor (23°C, 1 MHz)	4.0E-3		IEC 60250
Comparative Tracking Index	150	V	IEC 60112

Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	350	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	355	°C
Middle Temperature	360 to 365	°C
Front Temperature	370	°C
Nozzle Temperature	375	°C
Mold Temperature	170 to 200	°C

Injection Notes

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

Gate: >2mm or 0.5 x part thickness

Notes

[1] Mold Temperature: 180°C, Melt Temperature: 375°C, 1.00 mm

[2] 375°C nozzle, 180°C tool

[3] At yield

Revision Date: 7/17/2023