

VICTREX® PEEK 450G

Polyetheretherketone

Victrex plc

Message:

High performance thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour natural/beige.
Applications for higher strength and stiffness as well as high ductility. Chemically resistant to aggressive environments, suitable for sterilization for medical and food contact applications.

General Information			
UL YellowCard	E161131-224306		
Features	Semicrystallization		
	Rigidity, high		
	High strength		
	Good disinfection		
	Good liquidity		
	Good chemical resistance		
	Compliance of Food Exposure ductility		
Uses	Non-specific food applications		
	Medical/nursing supplies		
Agency Ratings	FDA Food Exposure, Not Rated		
Appearance	Beige		
	Natural color		
Forms	Particles		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density			ISO 1183
-- ¹	1.26	g/cm ³	ISO 1183
-- ²	1.30	g/cm ³	ISO 1183
Spiral Flow	11.0	cm	Internal method
Molding Shrinkage ³			ISO 294-4
Vertical flow direction: 180°C	1.3	%	ISO 294-4
Flow direction: 180°C	1.0	%	ISO 294-4
Water Absorption			ISO 62
23°C, 24 hr, 3.20 mm	0.070	%	ISO 62

Equilibrium, 23°C, 50% RH	0.40	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D, 23°C)	85		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	3700	MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	100	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	45	%	ISO 527-2
Flexural Modulus (23°C)	4100	MPa	ISO 178
Flexural Stress			ISO 178
3.5% strain, 23°C	125	MPa	ISO 178
23°C ⁴	165	MPa	ISO 178
125°C	85.0	MPa	ISO 178
175°C	18.0	MPa	ISO 178
275°C	13.0	MPa	ISO 178
Compressive Stress			ISO 604
23°C	125	MPa	ISO 604
120°C	70.0	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	No Break		ISO 179
Notched Izod Impact (23°C)	7.5	kJ/m ²	ISO 180/A
Unnotched Izod Impact Strength (23°C)	No Break		ISO 180
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	152	°C	ISO 75-2/A
Glass Transition Temperature	143	°C	ISO 11357-2
Melting Temperature	343	°C	ISO 11357-3
Linear thermal expansion coefficient			ISO 11359-2
Flow: < 143°C	4.5E-5	cm/cm/°C	ISO 11359-2
Flow: > 143°C	1.2E-4	cm/cm/°C	ISO 11359-2
Lateral: < 143°C	5.5E-5	cm/cm/°C	ISO 11359-2
Lateral: > 143°C	1.4E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	2200	J/kg/°C	DSC
Thermal Conductivity (23°C)	0.29	W/m/K	ISO 22007-4
RTI Elec	260	°C	UL 746
RTI Imp	180	°C	UL 746
RTI	240	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			IEC 60093
23°C	1.0E+16	ohms · cm	IEC 60093
125°C	1.0E+15	ohms · cm	IEC 60093
225°C	1.0E+9	ohms · cm	IEC 60093

Dielectric Strength			IEC 60243-1
0.0500 mm	190	kV/mm	IEC 60243-1
2.00 mm	23	kV/mm	IEC 60243-1
Dielectric Constant			IEC 60250
23°C, 50 Hz	3.00		IEC 60250
23°C, 1 kHz	3.10		IEC 60250
200°C, 50 Hz	4.50		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 (2.00 mm)	960	°C	IEC 60695-2-12
Oxygen Index			ISO 4589-2
-- ⁵	24	%	ISO 4589-2
-- ⁶	35	%	ISO 4589-2
Toxicity			NES 713
CO Content	0.0740		NES 713
CO2 Content	0.150		NES 713
Total Gases	0.220		NES 713
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C)	350	Pa·s	ISO 11443
Injection	Nominal Value	Unit	
Drying Temperature	120 - 150	°C	
Drying Time	3.0 - 5.0	hr	
Hopper Temperature	< 100	°C	
Rear Temperature	355	°C	
Middle Temperature	360 - 365	°C	
Front Temperature	370	°C	
Nozzle Temperature	375	°C	
Mold Temperature	170 - 200	°C	
Injection instructions			
Runner: Die / nozzle >3mm, manifold >3.5mmGate: >1mm or 0.5 x part thickness			
NOTE			
1.	Amorphous		
2.	Crystalline		
3.	375°C nozzle,		
4.	at Yield		
5.	0.4 mm		
6.	3.2 mm		

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