

VICTREX® HT™ G45

Polyether Ketone

Victrex plc

Message:

High performance thermoplastic material, unreinforced PolyEtherKetone (PEK), semi crystalline, depth filtered granules for injection moulding, low flow, FDA food contact compliant, colour natural/beige.

Applications for high strength and stiffness as well as good ductility at higher temperatures. Chemically resistant to aggressive environments, suitable for sterilisation for medical and food contact applications.

General Information			
Features	Semicrystallization		
	Rigidity, high		
	High strength		
	Good disinfection		
	Low 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	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	19.0	cm	Internal method
Molding Shrinkage ³			ISO 294-4
Vertical flow direction	1.2	%	ISO 294-4
Flow direction	1.0	%	ISO 294-4
Water Absorption			ISO 62
23°C, 24 hr, 3.20 mm	0.070	%	ISO 62
Saturated, 23°C, 3.20mm	0.60	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D, 23°C)	86		ISO 868

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	3700	MPa	ISO 527-2
Tensile Stress (Yield, 23°C)	115	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	30	%	ISO 527-2
Flexural Modulus (23°C)	4200	MPa	ISO 178
Flexural Stress			ISO 178
3.5% strain, 23°C	140	MPa	ISO 178
23°C	185	MPa	ISO 178
125°C	110	MPa	ISO 178
175°C	32.0	MPa	ISO 178
275°C	16.0	MPa	ISO 178
Compressive Stress			ISO 604
25°C	140	MPa	ISO 604
120°C	90.0	MPa	ISO 604
200°C	30.0	MPa	ISO 604
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	7.0	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)	163	°C	ISO 75-2/Ae
Glass Transition Temperature	152	°C	ISO 11357-2
Melting Temperature	373	°C	ISO 11357-3
Linear thermal expansion coefficient			ISO 11359-2
Flow: < 152°C	4.5E-4	cm/cm/°C	ISO 11359-2
Flow: > 152°C	7.5E-4	cm/cm/°C	ISO 11359-2
Lateral: < 152°C	5.5E-4	cm/cm/°C	ISO 11359-2
Lateral: > 152°C	1.3E-3	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
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
275°C	1.0E+9	ohms · cm	IEC 60093
Dielectric Strength (2.00 mm)	23	kV/mm	IEC 60243-1
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
-- ⁴	24	%	ISO 4589-2
-- ⁵	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	390	°C	
Middle Temperature	395 - 405	°C	
Front Temperature	410	°C	
Nozzle Temperature	415	°C	
Mold Temperature	200 - 220	°C	
Injection instructions			
Runner: Die / nozzle >3mm, manifold >3.5mmGate: >1mm or 0.5 x part thickness			
NOTE			
1.	Amorphous		
2.	Crystalline		
3.	415°C nozzle, 220°C tool		
4.	0.4 mm		
5.	3.2 mm		

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