

Victrex® PEEK 650G Polyetheretherketone

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, Unreinforced

Material Notes:

Product Description: High performance thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding and extrusion, low viscosity, FDA food contact compliant, colour natural/beige
Typical Application Areas: Applications for higher strength and stiffness as well as enhanced ductility. Chemically resistant to aggressive environments, suitable for sterilization for medical and food contact applications. Information provided by Victrex

Order this product through the following link:

http://www.lookpolymers.com/polymer_Victrex-PEEK-650G-Polyetheretherketone.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in ³	Crystalline; ISO 1183
Water Absorption	0.40 %	0.40 %	by immersion; ISO 62-1
Water Absorption at Saturation	0.45 %	0.45 %	immersion; ISO 62-1
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.55 %	0.55 %	immersion; ISO 62-1
	@Temperature 100 °C	@Temperature 212 °F	
Viscosity	475000 cP	475000 cP	Melt; ISO 11443
	@Temperature 400 °C	@Temperature 752 °F	
Linear Mold Shrinkage, Flow	0.0080 cm/cm	0.0080 in/in	390°C nozzle, 200°C tool; ISO 294-4
Linear Mold Shrinkage, Transverse	0.013 cm/cm	0.013 in/in	390°C nozzle, 200°C tool; ISO 294-4
Spiral Flow	12.5 cm	4.92 in	390°C nozzle, 180°C tool; Victrex
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	63.0 cm	24.8 in	395°C nozzle, 180°C tool; Victrex
	@Thickness 76.2 mm	@Thickness 3.00 in	
	70.0 cm	27.6 in	415°C nozzle, 180°C tool; Victrex
	@Thickness 76.2 mm	@Thickness 3.00 in	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	84	84	ISO 868
Tensile Strength, Yield	95.0 MPa	13800 psi	ISO 527
Elongation at Break	50 %	50 %	ISO 527

Tensile Modulus Mechanical Properties	3.90 GPa Metric	566 ksi English	ISO 527 Comments
Flexural Strength	9.00 MPa	1310 psi	ISO 178
	@Temperature 275 °C	@Temperature 527 °F	
	16.0 MPa	2320 psi	ISO 178
	@Temperature 175 °C	@Temperature 347 °F	
	85.0 MPa	12300 psi	ISO 178
	@Temperature 125 °C	@Temperature 257 °F	
	155 MPa	22500 psi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	3.60 GPa	522 ksi	ISO 178
Compressive Strength	65.0 MPa	9430 psi	ISO 604
	@Temperature 120 °C	@Temperature 248 °F	
	120 MPa	17400 psi	ISO 604
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	9.50 kJ/m ²	4.52 ft-lb/in ²	ISO 180/A
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180/U
Charpy Impact Unnotched	NB	NB	ISO 179/U
Charpy Impact, Notched	1.00 J/cm ²	4.76 ft-lb/in ²	ISO 179/eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	45.0 µm/m-°C	25.0 µin/in-°F	Below Tg; ISO 11359
	125 µm/m-°C	69.4 µin/in-°F	
CTE, linear, Transverse to Flow	65.0 µm/m-°C	36.1 µin/in-°F	Average below Tg; ISO 11359
	160 µm/m-°C	88.9 µin/in-°F	
Thermal Conductivity	0.290 W/m-K	2.01 BTU-in/hr-ft ² -°F	Average; ISO/CD 22007-4
	0.320 W/m-K	2.22 BTU-in/hr-ft ² -°F	
Melting Point	343 °C	649 °F	ISO 11357
Deflection Temperature at 1.8 MPa (264 psi)	152 °C	306 °F	As molded; ISO 75-f
Glass Transition Temp, Tg	143 °C	289 °F	Onset; ISO 11357

Thermal Properties	150 °C Metric	302 °F English	Midpoint: ISO 11357 Comments
Oxygen Index	24 % @Thickness 0.400 mm	24 % @Thickness 0.0157 in	ISO 4589
	35 % @Thickness 3.20 mm	35 % @Thickness 0.126 in	ISO 4589
Glow Wire Test	960 °C @Thickness 2.00 mm	1760 °F @Thickness 0.0787 in	IEC 60695-2-12

Component Elements Properties	Metric	English	Comments
CO2	0.15 %	0.15 %	NES 713

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+9 ohm-cm @Temperature 275 °C	1.00e+9 ohm-cm @Temperature 527 °F	
	1.00e+15 ohm-cm @Temperature 125 °C	1.00e+15 ohm-cm @Temperature 257 °F	
	1.00e+16 ohm-cm @Temperature 23.0 °C	1.00e+16 ohm-cm @Temperature 73.4 °F	
Dielectric Constant	3.1 @Frequency 50000 Hz, Temperature 23.0 °C	3.1 @Frequency 50000 Hz, Temperature 73.4 °F	
Dielectric Strength	23.0 kV/mm @Thickness 2.50 mm	584 kV/in @Thickness 0.0984 in	IEC 60243-1
Dissipation Factor	0.0050 @Frequency 1.00e+6 Hz	0.0050 @Frequency 1.00e+6 Hz	IEC 60250
Comparative Tracking Index	150 V	150 V	IEC 60112

Processing Properties	Metric	English	Comments
Processing Temperature	<= 100 °C	<= 212 °F	Hopper Temperature
Nozzle Temperature	395 °C	743 °F	
Zone 1	375 °C	707 °F	
Zone 2	380 °C	716 °F	

Processing Properties	Metric	English	Comments
Zone 4	390 °C	734 °F	
Mold Temperature	170 - 200 °C	338 - 392 °F	
	<= 250 °C	<= 482 °F	
Dry Time	3 hour	3 hour	
	@Temperature 150 °C	@Temperature 302 °F	
	5 hour	5 hour	
	@Temperature 120 °C	@Temperature 248 °F	

Descriptive Properties	Value	Comments
CO	0.074	NES 713
Color	Natural/Beige	
Gate	> 1mm or 0.5 x part thickness	
Runner	Die/nozzle > 3mm, manifold > 3.5mm	
Total gases	0.22	NES 713

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