

Victrex® PEEK 450CA40 Polyetheretherketone, 40% Carbon Fibre Reinforced

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, Carbon Fiber Filled

Material Notes:

Product Description:High performance thermoplastic material, 40% carbon fibre reinforced Polyetheretherketone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour black. Typical Application

Areas: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. Information Provided by VICTREX®

Order this product through the following link:

http://www.lookpolymers.com/polymer_Victrex-PEEK-450CA40-Polyetheretherketone-40-Carbon-Fibre-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.44 g/cc	0.0520 lb/in ³	Crystalline; ISO 1183
Water Absorption at Saturation	0.25 %	0.25 %	Equilibrium; by immersion; ISO 62-1
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.45 %	0.45 %	immersion; ISO 62-1
	@Temperature 100 °C	@Temperature 212 °F	
Viscosity	850000 cP	850000 cP	melt; ISO 11443
	@Temperature 400 °C	@Temperature 752 °F	
Linear Mold Shrinkage, Flow	0.0010 cm/cm	0.0010 in/in	360°C nozzle, 160°C tool; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0050 cm/cm	0.0050 in/in	405°C nozzle, 200°C tool; ISO 294-4
Spiral Flow	6.50 cm	2.56 in	405°C nozzle, 200°C tool
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	65.0 MPa	9430 psi	ISO 527
	@Temperature 275 °C	@Temperature 527 °F	
	105 MPa	15200 psi	ISO 527
	@Temperature 175 °C	@Temperature 347 °F	
	175 MPa	25400 psi	ISO 527
	@Temperature 125 °C	@Temperature 257 °F	
	285 MPa	41300 psi	ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.5 %	1.5 %	

Elongation at Break Mechanical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	ISO 527 Comments
Tensile Modulus	35.0 GPa @ Temperature 23.0 °C	5080 ksi @ Temperature 73.4 °F	ISO 527
Flexural Strength	90.0 MPa @ Temperature 275 °C	13100 psi @ Temperature 527 °F	ISO 178
	160 MPa @ Temperature 175 °C	23200 psi @ Temperature 347 °F	ISO 178
	290 MPa @ Temperature 125 °C	42100 psi @ Temperature 257 °F	ISO 178
	380 MPa @ Temperature 23.0 °C	55100 psi @ Temperature 73.4 °F	ISO 178
Flexural Modulus	30.0 GPa @ Temperature 23.0 °C	4350 ksi @ Temperature 73.4 °F	ISO 178
Compressive Strength	60.0 MPa @ Temperature 250 °C	8700 psi @ Temperature 482 °F	ISO 604
	90.0 MPa @ Temperature 200 °C	13100 psi @ Temperature 392 °F	ISO 604
	230 MPa @ Temperature 120 °C	33400 psi @ Temperature 248 °F	ISO 604
	360 MPa @ Temperature 23.0 °C	52200 psi @ Temperature 73.4 °F	ISO 604
Izod Impact, Notched (ISO)	11.0 kJ/m² @ Temperature 23.0 °C	5.23 ft-lb/in² @ Temperature 73.4 °F	ISO 180/A
Izod Impact, Unnotched (ISO)	20.0 kJ/m² @ Temperature 23.0 °C	9.52 ft-lb/in² @ Temperature 73.4 °F	ISO 180/U

Thermal Properties	Metric	English	Comments
CTE, linear	35.0 µm/m-°C @ Temperature <=143 °C	19.4 µin/in-°F @ Temperature <=289 °F	Average below Tg; ISO 11359
	90.0 µm/m-°C @ Temperature >=143	50.0 µin/in-°F @ Temperature >=289	Average above Tg; ISO 11359

Thermal Properties	^{°C} Metric	^{°F} English	Comments
CTE, linear, Parallel to Flow	5.00 µm/m-°C	2.78 µin/in-°F	Below Tg; ISO 11359
	@Temperature <=143 °C	@Temperature <=289 °F	
	8.00 µm/m-°C	4.44 µin/in-°F	Above Tg; ISO 11359
	@Temperature >=143 °C	@Temperature >=289 °F	
Melting Point	343 °C	649 °F	ISO 11357
Glass Transition Temp, Tg	143 °C	289 °F	Onset; ISO 11357
	150 °C	302 °F	Midpoint; ISO 11357
Glow Wire Test	960 °C	1760 °F	IEC 60695-2-12
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1e+05	1e+05	1V; ASTM D4496

Processing Properties	Metric	English	Comments
Processing Temperature	<= 100 °C	<= 212 °F	Hopper Temperature
Nozzle Temperature	405 °C	761 °F	
Mold Temperature	190 - 210 °C	374 - 410 °F	
Drying Temperature	120 °C	248 °F	
	@Time 18000 sec	@Time 5.00 hour	
	150 °C	302 °F	
	@Time 10800 sec	@Time 3.00 hour	

Descriptive Properties	Value	Comments
Toxicity Index	0.05	NES 713; CO content
	0.12	NES 713; CO ₂ content
	0.17	NES 713; Total gases

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