

Victrex® PEEK 90HMF20 Polyetheretherketone (PEEK), 20% Carbon Fiber Reinforced

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

Material Notes:

Product Description: High performance thermoplastic material, 20% carbon fiber reinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection molding, very easy flow, color black. **Typical Application Areas:** Complex geometries with thinner cross sections or longer flow length where superior strength in a static or dynamic system is required. Excellent wear resistance, low coefficient of friction, low coefficient of thermal expansion. Chemically resistant to aggressive environments. All information provided by Victrex.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Victrex-PEEK-90HMF20-Polyetheretherketone-PEEK-20-Carbon-Fiber-Reinforced.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.37 g/cc	1.37 g/cc	Crystalline; ISO 1183
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Water Absorption at Saturation	0.40 %	0.40 %	immersion; ISO 62-1
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.50 %	0.50 %	immersion; ISO 62-1
	@Temperature 100 °C	@Temperature 212 °F	
Viscosity	175000 cP	175000 cP	Melt; ISO 11443
	@Temperature 400 °C	@Temperature 752 °F	
Linear Mold Shrinkage, Flow	0.00 cm/cm	0.00 in/in	85°C nozzle, 190°C tool; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0060 cm/cm	0.0060 in/in	85°C nozzle, 190°C tool; ISO 294-4
Spiral Flow	18.0 cm	7.09 in	85°C nozzle, 190°C tool
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	86.5	86.5	ISO 868
Tensile Strength at Break	80.0 MPa	11600 psi	ISO 527
	@Temperature 275 °C	@Temperature 527 °F	
	120 MPa	17400 psi	ISO 527
	@Temperature 175 °C	@Temperature 347 °F	
	190 MPa	27600 psi	ISO 527
	@Temperature 125 °C	@Temperature 257 °F	

Mechanical Properties	290 MPa Metric	42100 psi English	Comments ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Yield	1.9 %	1.9 %	ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Modulus	22.0 GPa	3190 ksi	ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Strength	100 MPa	14500 psi	ISO 178
	@Temperature 275 °C	@Temperature 527 °F	
	180 MPa	26100 psi	ISO 178
	@Temperature 175 °C	@Temperature 347 °F	
	290 MPa	42100 psi	ISO 178
	@Temperature 125 °C	@Temperature 257 °F	
	400 MPa	58000 psi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	20.0 GPa	2900 ksi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	90.0 MPa	13100 psi	ISO 604
	@Temperature 200 °C	@Temperature 392 °F	
	200 MPa	29000 psi	ISO 604
	@Temperature 120 °C	@Temperature 248 °F	
	270 MPa	39200 psi	ISO 604
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	8.50 kJ/m²	4.04 ft-lb/in²	ISO 180
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	60.0 kJ/m²	28.6 ft-lb/in²	ISO 180
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	6.00 J/cm²	28.6 ft-lb/in²	ISO 179/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.750 J/cm²	3.57 ft-lb/in²	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	40.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	22.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average below Tg; ISO 11359
	@Temperature $\leq 143^\circ\text{C}$	@Temperature $\leq 289^\circ\text{F}$	
	100 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	55.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average above Tg; ISO 11359
	@Temperature $\geq 143^\circ\text{C}$	@Temperature $\geq 289^\circ\text{F}$	
CTE, linear, Parallel to Flow	3.00 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	1.67 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Above Tg; ISO 11359
	@Temperature $\geq 143^\circ\text{C}$	@Temperature $\geq 289^\circ\text{F}$	
	5.50 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	3.06 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Below Tg; ISO 11359
	@Temperature $\leq 143^\circ\text{C}$	@Temperature $\leq 289^\circ\text{F}$	
Thermal Conductivity	1.00 W/m-K	6.94 BTU-in/hr-ft ² -°F	Average; ISO 22007-4
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.90 W/m-K	13.2 BTU-in/hr-ft ² -°F	Along flow; ISO 22007-4
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Melting Point	343 °C	649 °F	Onset; ISO 11357
Deflection Temperature at 1.8 MPa (264 psi)	347 °C	657 °F	ISO 75A-f
Glass Transition Temp, Tg	143 °C	289 °F	ISO 11357

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

Processing Properties	Metric	English	Comments
Processing Temperature	$\leq 100^\circ\text{C}$	$\leq 212^\circ\text{F}$	Hopper Temperature
Nozzle Temperature	385 °C	725 °F	
Mold Temperature	180 - 200 °C	356 - 392 °F	
Drying Temperature	120 °C	248 °F	
	@Time 7200 sec	@Time 2.00 hour	
	150 °C	302 °F	
	@Time 10800 sec	@Time 3.00 hour	

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