

Victrex® ST™ ST45CA30 PolyEtherKetoneEtherKetoneKetone, 30% Carbon Fibre Reinforced

Category : Polymer , Thermoplastic , Polyketone , Polyetherketoneetherketoneketone (PEKEKK), Carbon Fiber Filled

Material Notes:

Product Description:High performance thermoplastic material, 30% carbon fibre reinforced PolyEtherKetoneEtherKetoneKetone (PEKEKK), semi crystalline, granules for injection moulding, standard flow, colour black.
Typical Application Areas:Applications for higher strength and stiffness at elevated temperatures 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-ST-ST45CA30-PolyEtherKetoneEtherKetoneKetone-30-Carbon-Fibre-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.41 g/cc	0.0509 lb/in ³	Crystalline; ISO 1183
Water Absorption at Saturation	0.80 %	0.80 %	immersion; ISO 62-1
	@Temperature 100 °C	@Temperature 212 °F	
Viscosity	650000 cP	650000 cP	melt; ISO 11443
	@Temperature 420 °C	@Temperature 788 °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	0.0070 cm/cm	0.0070 in/in	415°C nozzle, 210°C tool; ISO 294-4
Spiral Flow	9.00 cm	3.54 in	415°C nozzle, 210°C tool
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	41.0 cm	16.1 in	415°C nozzle, 210°C tool
	@Thickness 3.00 mm	@Thickness 0.118 in	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	88	88	ISO 868
Tensile Strength at Break	70.0 MPa	10200 psi	ISO 527
	@Temperature 275 °C	@Temperature 527 °F	
	120 MPa	17400 psi	ISO 527
	@Temperature 175 °C	@Temperature 347 °F	
	180 MPa	26100 psi	ISO 527
	@Temperature 125 °C	@Temperature 257 °F	
	270 MPa	39200 psi	

Mechanical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	ISO 527 Comments
Elongation at Break	1.7 % @Temperature 23.0 °C	1.7 % @Temperature 73.4 °F	ISO 527
Tensile Modulus	28.0 GPa @Temperature 23.0 °C	4060 ksi @Temperature 73.4 °F	ISO 527
Flexural Strength	100 MPa @Temperature 275 °C	14500 psi @Temperature 527 °F	ISO 178
	190 MPa @Temperature 175 °C	27600 psi @Temperature 347 °F	ISO 178
	290 MPa @Temperature 125 °C	42100 psi @Temperature 257 °F	ISO 178
	400 MPa @Temperature 23.0 °C	58000 psi @Temperature 73.4 °F	ISO 178
Flexural Modulus	23.5 GPa @Temperature 23.0 °C	3410 ksi @Temperature 73.4 °F	ISO 178
Compressive Strength	65.0 MPa @Temperature 250 °C	9430 psi @Temperature 482 °F	ISO 604
	95.0 MPa @Temperature 200 °C	13800 psi @Temperature 392 °F	ISO 604
	210 MPa @Temperature 120 °C	30500 psi @Temperature 248 °F	ISO 604
	310 MPa @Temperature 23.0 °C	45000 psi @Temperature 73.4 °F	ISO 604
Izod Impact, Notched (ISO)	10.0 kJ/m ² @Temperature 23.0 °C	4.76 ft-lb/in ² @Temperature 73.4 °F	ISO 180/A
Izod Impact, Unnotched (ISO)	50.0 kJ/m ² @Temperature 23.0 °C	23.8 ft-lb/in ² @Temperature 73.4 °F	ISO 180/U
Charpy Impact Unnotched	5.00 J/cm ² @Temperature 23.0 °C	23.8 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1U
Charpy Impact, Notched	0.700 J/cm ² @Temperature 23.0 °C	3.33 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA

Mechanical Properties	Metric	English	Comments	
Thermal Properties	Metric	English	Comments	
	CTE, linear	40.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature <=162 °C	22.2 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature <=324 °F	Average below Tg; ISO 11359
		95.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature >=162 °C	52.8 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature >=324 °F	Average above Tg; ISO 11359
CTE, linear, Parallel to Flow	10.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature <=162 °C	5.56 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature <=324 °F	Below Tg; ISO 11359	
	13.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature >=162 °C	7.22 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature >=324 °F	Above Tg; ISO 11359	
Thermal Conductivity	0.960 W/m-K	6.66 BTU-in/hr-ft ² -°F	Average; ISO 22007-4	
	2.00 W/m-K	13.9 BTU-in/hr-ft ² -°F	Along flow; ISO 22007-4	
Melting Point	387 °C	729 °F	ISO 11357	
Deflection Temperature at 1.8 MPa (264 psi)	383 °C	721 °F	ISO 75-f	
Glass Transition Temp, Tg	162 °C	324 °F	Onset; ISO 11357	
	169 °C	336 °F	Midpoint; ISO 11357	

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	415 °C	779 °F	
Mold Temperature	200 - 230 °C	392 - 446 °F	
Drying Temperature	150 °C @Time 21600 sec	302 °F @Time 6.00 hour	
	180 °C @Time 10800 sec	356 °F @Time 3.00 hour	

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