

Victrex® ST™ STG45 PolyEtherKetoneEtherKetoneKetone, Unreinforced

Category : Polymer , Thermoplastic , Polyketone , Polyetherketoneetherketoneketone (PEKEKK), Wear Resistant

Material Notes:

Product Description:High performance thermoplastic material, unreinforced PolyEtherKetoneEtherKetoneKetone (PEKEKK), semi crystalline, depth filtered granules for injection moulding, standard flow, color natural/beige.
Typical Application Areas:Applications for high strength and stiffness as well as good ductility at higher temperatures. Chemically resistant to aggressive environments.
Information Provided by VICTREX®

Order this product through the following link:

http://www.lookpolymers.com/polymer_Victrex-ST-STG45-PolyEtherKetoneEtherKetoneKetone-Unreinforced.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in³	Crystalline; ISO 1183
Water Absorption at Saturation	0.95 % @Temperature 100 °C	0.95 % @Temperature 212 °F	by immersion; ISO 62-1
Viscosity	225000 cP @Temperature 420 °C	225000 cP @Temperature 788 °F	melt; ISO 11443
Linear Mold Shrinkage, Flow	0.011 cm/cm	0.011 in/in	360°C nozzle, 160°C tool; ISO 294-4
	0.014 cm/cm	0.014 in/in	360°C nozzle, 160°C tool; ISO 294-4
Linear Mold Shrinkage, Transverse	0.012 cm/cm	0.012 in/in	395°C nozzle, 200°C tool; ISO 294-4
	0.016 cm/cm	0.016 in/in	415°C nozzle, 220°C tool; ISO 294-4
Spiral Flow	16.0 cm @Thickness 1.00 mm	6.30 in @Thickness 0.0394 in	395°C nozzle, 200°C tool
	19.0 cm @Thickness 1.00 mm	7.48 in @Thickness 0.0394 in	415°C nozzle, 220°C tool
	68.0 cm @Thickness 76.2 mm	26.8 in @Thickness 3.00 in	395°C nozzle, 200°C tool

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	84.5	84.5	ISO 868
Tensile Strength, Yield	115 MPa @Temperature 23.0 °C	16700 psi @Temperature 73.4 °F	ISO 527
Elongation at Break	25 %	25 %	ISO 527

Mechanical Properties	@Temperature 23.0 °C Metric	@Temperature 73.4 °F English	Comments
Tensile Modulus	4.20 GPa	609 ksi	ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Strength	20.0 MPa	2900 psi	ISO 178
	@Temperature 275 °C	@Temperature 527 °F	
	35.0 MPa	5080 psi	ISO 178
	@Temperature 175 °C	@Temperature 347 °F	
	110 MPa	16000 psi	ISO 178
	@Temperature 125 °C	@Temperature 257 °F	
	190 MPa	27600 psi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	130 MPa	18900 psi	ISO 178
	@Strain 3.50 %	@Strain 3.50 %	
Flexural Modulus	4.00 GPa	580 ksi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	35.0 MPa	5080 psi	ISO 604
	@Temperature 200 °C	@Temperature 392 °F	
	90.0 MPa	13100 psi	ISO 604
	@Temperature 120 °C	@Temperature 248 °F	
	145 MPa	21000 psi	ISO 604
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	6.00 kJ/m²	2.86 ft-lb/in²	ISO 180/A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180/U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	NB	NB	ISO 179/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.400 J/cm²	1.90 ft-lb/in²	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	55.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average below Tg; ISO 11359
	@Temperature $\leq 162^\circ\text{C}$	@Temperature $\leq 324^\circ\text{F}$	
	125 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	69.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Average above Tg; ISO 11359
	@Temperature $\geq 162^\circ\text{C}$	@Temperature $\geq 324^\circ\text{F}$	
CTE, linear, Parallel to Flow	45.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	25.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Below Tg; ISO 11359
	@Temperature $\leq 162^\circ\text{C}$	@Temperature $\leq 324^\circ\text{F}$	
	105 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	58.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Above Tg; ISO 11359
	@Temperature $\geq 162^\circ\text{C}$	@Temperature $\geq 324^\circ\text{F}$	
Thermal Conductivity	0.320 W/m-K	2.22 BTU-in/hr-ft ² -°F	Along flow; ISO 22007-4
	0.290 W/m-K	2.01 BTU-in/hr-ft ² -°F	Average; ISO 22007-4
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Melting Point	387 °C	729 °F	ISO 11357
Deflection Temperature at 1.8 MPa (264 psi)	172 °C	342 °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	1.00e+16 ohm-cm	1.00e+16 ohm-cm	IEC 60093
Dielectric Constant	3.0	3.0	IEC 60250
	@Frequency 1000 Hz, Temperature 23.0 °C	@Frequency 1000 Hz, Temperature 73.4 °F	
Dielectric Strength	23.0 kV/mm	584 kV/in	IEC 60243-1
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Dissipation Factor	0.0040	0.0040	IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
Comparative Tracking Index	150 V	150 V	IEC 60112

Processing Properties	Metric	English	Comments
Mold Temperature	200 - 220 °C	392 - 428 °F	

Processing Properties	Metric	English	Comments
Drying Temperature	@Time 21600 sec	@Time 6.00 hour	
	180 °C	356 °F	
	@Time 10800 sec	@Time 3.00 hour	

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