

## Victrex® PEEK 450G General Purpose

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 molding and extrusion, standard flow, FDA food contact compliant, color natural/beige. **Typical Application Areas:** Applications for higher strength and stiffness as well as high ductility. Chemically resistant to aggressive environments, suitable for sterilisation for medical and food contact applications. Information provided by Victrex.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Victrex-PEEK-450G-General-Purpose.php](http://www.lookpolymers.com/polymer_Victrex-PEEK-450G-General-Purpose.php)

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in <sup>3</sup>	Crystalline; ISO 1183
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	350000 cP	350000 cP	melt; ISO 11443
	@Temperature 400 °C	@Temperature 752 °F	
Linear Mold Shrinkage	0.013 cm/cm	0.013 in/in	375°C nozzle, 180°C tool; ISO 294-4
Linear Mold Shrinkage, Transverse	0.012 cm/cm	0.012 in/in	375°C nozzle, 180°C tool; ISO 294-4
Spiral Flow	11.0 cm	4.33 in	375°C nozzle, 180°C tool
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	84.5	84.5	ISO 868
Tensile Strength, Yield	98.0 MPa	14200 psi	ISO 527
Elongation at Break	45 %	45 %	ISO 527
Tensile Modulus	4.00 GPa	580 ksi	ISO 527
Flexural Strength	19.0 MPa	2760 psi	ISO 178
	@Temperature 175 °C	@Temperature 347 °F	
	85.0 MPa	12300 psi	ISO 178
	@Temperature 125 °C	@Temperature 257 °F	

Mechanical Properties	86.2 MPa Metric	12500 psi English	Comments
	@Temperature 275 °C	@Temperature 527 °F	
	165 MPa	23900 psi	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	125 MPa	18100 psi	ISO 178
	@Strain 3.50 %, Temperature 23.0 °C	@Strain 3.50 %, Temperature 73.4 °F	
Flexural Modulus	3.80 GPa	551 ksi	ISO 178
Compressive Strength	70.0 MPa	10200 psi	ISO 604
	@Temperature 120 °C	@Temperature 248 °F	
	125 MPa	18100 psi	ISO 604
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	8.00 kJ/m <sup>2</sup>	3.81 ft-lb/in <sup>2</sup>	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/U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.700 J/cm <sup>2</sup>	3.33 ft-lb/in <sup>2</sup>	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	55.0 µm/m-°C	30.6 µin/in-°F	Average below Tg; ISO 11359
	@Temperature <=143 °C	@Temperature <=289 °F	
	140 µm/m-°C	77.8 µin/in-°F	Average above Tg; ISO 11357
	@Temperature >=143 °C	@Temperature >=289 °F	
CTE, linear, Parallel to Flow	45.0 µm/m-°C	25.0 µin/in-°F	Below Tg; ISO 11359
	@Temperature <=143 °C	@Temperature <=289 °F	
	120 µm/m-°C	66.7 µin/in-°F	Above Tg; ISO 11359
	@Temperature >=143 °C	@Temperature >=289 °F	

Thermal Properties	Metric	English	Average: ISO 22007-4 Comments
	0.350 W/m-K	2.43 BTU-in/hr-ft <sup>2</sup> -°F	Along flow; ISO 22007-4
Melting Point	343 °C	649 °F	ISO 11357
Deflection Temperature at 1.8 MPa (264 psi)	152 °C	306 °F	As moulded,; ISO 75-f
	160 °C	320 °F	Annealed; ISO 75-f
	@Temperature 200 °C, Time 14400 sec	@Temperature 392 °F, Time 4.00 hour	
Glass Transition Temp, Tg	143 °C	289 °F	Onset; ISO 11357
	150 °C	302 °F	Midpoint; ISO 11357
UL RTI, Electrical	260 °C	500 °F	UL 746B
UL RTI, Mechanical with Impact	180 °C	356 °F	UL 746B
UL RTI, Mechanical without Impact	240 °C	464 °F	UL 746B
Oxygen Index	24 %	24 %	ISO 4589
	@Thickness 0.400 mm	@Thickness 0.0157 in	
	35 %	35 %	ISO 4589
	@Thickness 3.20 mm	@Thickness 0.126 in	
Glow Wire Test	960 °C	1760 °F	2 mm; IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+9 ohm-cm	1.00e+9 ohm-cm	IEC 60093
	@Temperature 275 °C	@Temperature 527 °F	
	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093
	@Temperature 125 °C	@Temperature 257 °F	
	1.00e+16 ohm-cm	1.00e+16 ohm-cm	IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	3.0	3.0	IEC 60250
	@Frequency 50 Hz	@Frequency 50 Hz	
	3.1	3.1	IEC 60250
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	4.5	4.5	IEC 60250
	@Frequency 50.0 Hz,	@Frequency 50.0 Hz,	

Electrical Properties	Temperature 200 °C Metric	Temperature 392 °F English	Comments
Dielectric Strength	23.0 kV/mm	584 kV/in	IEC 60243-1
	@Thickness 2.00 mm	@Thickness 0.0787 in	
	200 kV/mm	5080 kV/in	IEC 60243-1
	@Thickness 0.500 mm	@Thickness 0.0197 in	
Dissipation Factor	0.0040	0.0040	IEC 60250
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Comparative Tracking Index	150 V	150 V	IEC 60112

Processing Properties	Metric	English	Comments
Processing Temperature	<= 100 °C	<= 212 °F	Hopper
Nozzle Temperature	375 °C	707 °F	
Mold Temperature	170 - 200 °C	338 - 392 °F	
Dry Time	3.00 hour	3.00 hour	
	@Temperature 150 °C	@Temperature 302 °F	
	5.00 hour	5.00 hour	
	@Temperature 120 °C	@Temperature 248 °F	

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