

## Victrex® PEEK 450FE20 Polyetheretherketone, 20% PTFE

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK) , Polyetheretherketone, PEEK, PTFE-Filled

### Material Notes:

**Product Description:**High performance thermoplastic material, 20% filled with PTFE Polyetheretherketone (PEEK), semi crystalline, granules for injection moulding and extrusion, standard flow, FDA food contact compliant, colour natural/beige. **Typical Application Areas:**Tribological applications. Excellent wear resistance, very low coefficient of friction. Chemically resistant to aggressive environments. Information Provided by VICTREX®

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Victrex-PEEK-450FE20-Polyetheretherketone-20-PTFE.php](http://www.lookpolymers.com/polymer_Victrex-PEEK-450FE20-Polyetheretherketone-20-PTFE.php)

Physical Properties	Metric	English	Comments
Density	1.40 g/cc	0.0506 lb/in <sup>3</sup>	Crystalline; ISO 1183
Viscosity	350000 cP @Temperature 400 °C	350000 cP @Temperature 752 °F	melt; ISO 11443
Linear Mold Shrinkage, Flow	0.012 cm/cm	0.012 in/in	360°C nozzle, 160°C tool; ISO 294-4
Linear Mold Shrinkage, Transverse	0.017 cm/cm	0.017 in/in	375°C nozzle, 180°C tool; ISO 294-4
Spiral Flow	13.0 cm @Thickness 1.00 mm	5.12 in @Thickness 0.0394 in	375°C nozzle, 180°C tool

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	81	81	ISO 868
Tensile Strength, Yield	78.0 MPa @Temperature 23.0 °C	11300 psi @Temperature 73.4 °F	ISO 527
Elongation at Break	25 % @Temperature 23.0 °C	25 % @Temperature 73.4 °F	ISO 527
Tensile Modulus	3.20 GPa @Temperature 23.0 °C	464 ksi @Temperature 73.4 °F	ISO 527
Flexural Strength	13.0 MPa @Temperature 275 °C	1890 psi @Temperature 527 °F	ISO 178
	18.0 MPa @Temperature 175 °C	2610 psi @Temperature 347 °F	ISO 178
	70.0 MPa @Temperature 23.0 °C	10200 psi @Temperature 73.4 °F	ISO 178

Mechanical Properties	Metric	English	Comments
	@Temperature 23.0 °C	@Temperature 73.4 °F	ISO 178
	<b>100 MPa</b>	<b>14500 psi</b>	ISO 178
	@Strain 3.50 %, Temperature 23.0 °C	@Strain 3.50 %, Temperature 73.4 °F	
Flexural Modulus	<b>3.20 GPa</b>	<b>464 ksi</b>	ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	<b>65.0 MPa</b>	<b>9430 psi</b>	ISO 604
	@Temperature 120 °C	@Temperature 248 °F	
	<b>105 MPa</b>	<b>15200 psi</b>	ISO 604
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	<b>0.800 kJ/m<sup>2</sup></b>	<b>0.381 ft-lb/in<sup>2</sup></b>	ISO 180/A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	<b>NB</b>	<b>NB</b>	ISO 180/U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	<b>NB</b>	<b>NB</b>	ISO 179/U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	<b>0.600 J/cm<sup>2</sup></b>	<b>2.86 ft-lb/in<sup>2</sup></b>	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	<b>60.0 µm/m-°C</b>	<b>33.3 µin/in-°F</b>	Average below Tg; ISO 11359
	@Temperature <=143 °C	@Temperature <=289 °F	
	<b>140 µm/m-°C</b>	<b>77.8 µin/in-°F</b>	Average above Tg; ISO 11359
	@Temperature >=143 °C	@Temperature >=289 °F	
CTE, linear, Parallel to Flow	<b>40.0 µm/m-°C</b>	<b>22.2 µin/in-°F</b>	Below Tg; ISO 11359
	@Temperature <=143 °C	@Temperature <=289 °F	
	<b>120 µm/m-°C</b>	<b>66.7 µin/in-°F</b>	Above Tg; ISO 11359
	@Temperature >=143 °C	@Temperature >=289 °F	
Melting Point	<b>343 °C</b>	<b>649 °F</b>	ISO 11357

Thermal Properties	Metric	English	Comments
Stress at Break (264 psi)	150 °C	302 °F	ISO 11357
Glass Transition Temp, Tg	143 °C	289 °F	Onset; ISO 11357
	150 °C	302 °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	2.8	2.8	IEC 60250
	@Frequency 1000 Hz, Temperature 23.0 °C	@Frequency 1000 Hz, Temperature 73.4 °F	
Dielectric Strength	26.0 kV/mm	660 kV/in	IEC 60243-1
	@Thickness 2.50 mm	@Thickness 0.0984 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
Processing Temperature	<= 100 °C	<= 212 °F	Hopper Temperature
Nozzle Temperature	375 °C	707 °F	
Mold Temperature	170 - 200 °C	338 - 392 °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	

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