

## Victrex® APTIV® 1103-050M Polyetheretherketone (PEEK) Polymer Film, Semi-Crystalline, 30% Mineral Filled

Category : Polymer , Film , Thermoplastic , Polyketone , Polyetheretherketone (PEEK)

### Material Notes:

**Description:** APTIV® 1100 series films are the mineral filled semi-crystalline films made from VICTREX® PEEK polymer. The film provides a material solution for engineers in ultra-high performance applications. APTIV films are a comprehensive range of versatile, high-performance films, the use of which can facilitate reduced systems costs, improved performance and enhanced design freedom. APTIV 1100 has a unique combination of properties providing high temperature performance, mechanical strength, durability, excellent radiation, hydrolysis and chemical resistance, electrical insulation, excellent barrier properties with high purity, good flammability without the use of flame retardants, low toxicity of combustion products, and low moisture absorption in a film format. Inherently halogen free and ease of processing makes APTIV films a technology enabler for our customers and end users. APTIV 1100 series provides a higher modulus and lower coefficient of linear thermal expansion over the APTIV 1000 series. Applications:Electrical insulation Printed circuit substratesHigh temperature labelsFlexible surface heatersPressure sensor membranesAcoustic speaker diaphragms and voice coilsProven temperature resistance to use of lead free soldersCertification: APTIV film is FDA and EU approved for food contact and is RoHS compliant.Features:High heat resistanceBroad chemical resistanceExcellent barrier propertiesLow moisture absorptionHigh strength and toughnessStable, excellent electrical insulation propertiesGood flammability performance without use of flame retardant additivesInherently halogen freeRadiation resistanceLow smoke and toxic gas emissionExcellent hydrolysis resistanceExcellent acoustic propertiesHigh purityLight weightRecyclableEasy to process – can be laminated to other materials, thermoformed, metallised, coated, printed, stamped and die cut, welded and heat sealed and coated.Improved thermal conductivity over APTIV 1000 filmSurface Finishes: Standard surface finish is matte/matte. Typical Ra values can be supplied on request.Custom Finishing (Slitting and Surface Treatment): The slitter capability in the APTIV film facility allows custom lengths and widths down to 45 mm to be produced. Widths below 45 mm are available on request. Surface treatment by atmospheric plasma process of the film is also available by request taking the surface energy of the treated APTIV film surface to greater than 55 dynes per cm. Compliance: APTIV 1100 film is approved for Food Contact Use:APTIV 1100 film is compliant with the compositional requirements of FDA 21 CFR 177.2415.APTIV 1100 film is compliant with the framework regulation (EC) No. 1935/2004/EC and commission directive 2002/72/EC and the amendments up to 2005/79/EC. APTIV 1100 film complies with the requirements of RoHSEuropean Directive 2002/95/EC and can be used to manufacture products compliant with the same directive.APTIV 1100 film is inherently halogen free in accordance with IEC61249-2-21.Secondary Processes: APTIV 1100 film can easily be subjected to a range of secondary process operations, which allow designers and engineers to obtain the benefits of APTIV film properties in a variety of forms.Surface treatment SlittingAdhesionDie cutting and stampingCoatingsThermal laminationHeat welding and heat sealingThermoformingMetallisationPrintingLaser marking and machiningProperty data reported herein was measured on 50 micron film. The films are available in thicknesses from 12 microns up to 125 microns.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Victrex-APTIV-1103-050M-Polyetheretherketone-PEEK-Polymer-Film-Semi-Crystalline-30-Mineral-Filled.php](http://www.lookpolymers.com/polymer_Victrex-APTIV-1103-050M-Polyetheretherketone-PEEK-Polymer-Film-Semi-Crystalline-30-Mineral-Filled.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.54 g/cc	1.54 g/cc	ISO 1183
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.090 %	0.090 %	

Physical Properties	Metric	English	Comments
	@ Temperature 23.0 °C, Time 86400 sec	@ Temperature 73.4 °F, Time 24.0 hour	

Mechanical Properties	Metric	English	Comments
Film Elongation at Break, MD	>= 10 %	>= 10 %	ISO 527
	>= 5.0 %	>= 5.0 %	ISO 527
	@Thickness 0.0250 mm	@Thickness 0.000984 in	ISO 527
	>= 10 %	>= 10 %	ISO 527
	@Thickness 0.0250 mm	@Thickness 0.000984 in	ISO 527
Film Elongation at Break, TD	<= 10 %	<= 10 %	ISO 527
	<= 10 %	<= 10 %	ISO 527
	@Thickness 0.100 mm	@Thickness 0.00394 in	ISO 527
	<= 10 %	<= 10 %	ISO 527
	@Thickness 0.100 mm	@Thickness 0.00394 in	ISO 527
Tensile Modulus	4.50 GPa	653 ksi	TD; ISO 527
	5.50 GPa	798 ksi	MD; ISO 527
	4.50 GPa	653 ksi	TD; ISO 527
	@Thickness 0.100 mm	@Thickness 0.00394 in	TD; ISO 527
	4.50 GPa	653 ksi	TD; ISO 527
	@Thickness 0.0250 mm	@Thickness 0.000984 in	TD; ISO 527
	5.00 GPa	725 ksi	MD; ISO 527
	@Thickness 0.100 mm	@Thickness 0.00394 in	MD; ISO 527
	5.50 GPa	798 ksi	MD; ISO 527
	@Thickness 0.0250 mm	@Thickness 0.000984 in	MD; ISO 527
Tear Strength	4.91 kN/m	28.0 pli	MD; ISO 6383-1
	5.96 kN/m	34.0 pli	TD; ISO 6383-1
Film Tensile Strength at Break, MD	90.0 MPa	13100 psi	ISO 527
	70.0 MPa	10200 psi	ISO 527
	@Thickness 0.0250 mm	@Thickness 0.000984 in	ISO 527

Mechanical Properties	Metric	English	Comments
	90.0 MPa	13100 psi	ISO 527
	@Thickness 0.100 mm	@Thickness 0.00394 in	
Film Tensile Strength at Break, TD	90.0 MPa	13100 psi	ISO 527
	70.0 MPa	10200 psi	
	@Thickness 0.0250 mm	@Thickness 0.000984 in	ISO 527
	90.0 MPa	13100 psi	ISO 527
	@Thickness 0.100 mm	@Thickness 0.00394 in	

Thermal Properties	Metric	English	Comments
CTE, linear	18.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	10.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	MD, below Tg; ASTM D696
Thermal Conductivity	0.610 W/m-K	4.23 BTU-in/hr-ft <sup>2</sup> -°F	Through Plane; ASTM E1461
	1.30 W/m-K	9.02 BTU-in/hr-ft <sup>2</sup> -°F	In-Plane; ASTM E1461
Shrinkage, MD	<= 0.50 %	<= 0.50 %	TM-XV-84
	@Temperature 200 °C	@Temperature 392 °F	
Shrinkage, TD	<= 0.50 %	<= 0.50 %	TM-XV-84
	@Temperature 200 °C	@Temperature 392 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	100V; ASTM D257
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	3.5	3.5	
	@Frequency 1e+7 Hz, Temperature 23.0 °C	@Frequency 1e+7 Hz, Temperature 73.4 °F	
Dielectric Strength	200 kV/mm	5080 kV/in	1/4 inch electrode; ASTM D149
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 1e+7 Hz, Temperature 23.0 °C	@Frequency 1e+7 Hz, Temperature 73.4 °F	

Descriptive Properties	Value	Comments
Puncture Strength	5 kJ/m <sup>2</sup>	MD/TD, Def Stan 81-75; 23°C

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