APTIV™ FILMS XPI A106

General Information

Product Description

APTIV XPI™ Film A106 is an unfilled semi-crystalline film made from VICTREX™ PEEK polymer. The film provides durability and reliability in the most demanding application environments by incorporating all of the outstanding properties of VICTREX™ PEEK (PolyEtherEtherKetone) polymer in a thin film format. It is typically used as high-voltage e-motor stator insulation, enabling excellent thermal management as well as high electrical performance and maximized copper fill factor, resulting in enhanced e-motor efficiency.

APTIV XPI™ Film A106 meets the requirements of high-voltage (800 V) slot liner applications such as:

- Long-term thermal stability in high electric field strength rotating machines
- Excellent dielectric performance for primary and secondary insulation concepts in 800+ V electric machines
- Well-engineered mechanical properties for use on automated assembly lines and processing equipment
- High compatibility to a wide range of impregnation resins
- Optimum wear resistance for impregnation resin-free electric machine concepts
- Outstanding chemical resistance and hydrolysis resistance to water, ATF, oils and cooling fluids to support all cooling concepts, from water to direct oil immersion.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density [1] (23°C)	1.30	g/cm³	ISO 1183
Water Absorption [2]			ISO 62
Equilibrium, 23°C, 0.0500 mm, 50% RH	0.040	%	
ShrinkageMD [3] (200°C, 50.0 µm)	< 0.50	%	
ShrinkageTD [3] (200°C, 50.0 µm)	< 0.50	%	
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Recommended / Available	125 µm		
Tensile Modulus			ISO 527
MD : 23°C, 125 µm	2400	MPa	
TD : 23°C, 125 µm	2300	MPa	
Tensile Stress			ISO 527
MD : Break, 23°C, 125 µm	120	MPa	
TD : Break, 23°C, 125 µm	120	MPa	
Tensile Elongation			ISO 527
MD : Break, 23°C, 125 µm	> 150	%	
TD : Break, 23°C, 125 µm	> 150	%	
Thermal	**Nominal Value**	**Unit**	**Test Method**
Glass Transition Temperature (Onset)	143	°C	ISO 11357
Melting Temperature	343	°C	ISO 11357
CLTE - Flow [4] (0.0500 mm)	3.5E-5	cm/cm/°C	ASTM D696
Thermal Conductivity [5]	0.25	W/m/K	ASTM E1461
RTI Elec	240	°C	UL 746B

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Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Comparative Tracking Index (23°C)	PLC 4		IEC 60112
Breakdown Voltage [6] (23°C)	18.9	kV	ASTM D149
Breakdown VoltageRetention [7] (180°C)	> 95.0	%	IEC 60243
Dielectric Constant [8] (23°C)	3.20		IEC 60250
Dissipation Factor [9] (23°C)	3.0E-3		IEC 60250
Partial Discharge Inception Voltage [10]			
23°C	1267	V	
180°C	967	V	

Additional Information

Product Dimensions

APTIV XPI™ Film A106 by Victrex is offered in a standard width of 610 mm and a standard roll outer diameter of 450 mm. The standard roll length of 1050 m is supplied on a 6” (152 mm) cardboard core.

For non-standard formats of APTIV XPI™ Film A106, please contact the Victrex sales team. Victrex can assist customers by referring them to our network of vendors. These vendors offer a variety of high-precision services, including slitting, coating, laminating, and other ancillary kitting solutions.

Notes

[1] Crystalline

[2] 24 hrs

[3] TM-VX-84

[4] below Tg

[5] Through Plane

[6] 1 kV/s

[7] 180 °C, 500 V/s

[8] 1kHz

[9] 1MHz

[10] IEC 60270

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