

APTIV™ FILMS XPI A105

General Information

Product Description

APTIV XPI™ Film A105 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 A105 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/cm ³	ISO 1183
Water Absorption ² Equilibrium, 23°C, 0.0500 mm, 50% RH	0.040	%	ISO 62
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	100	µm	
Tensile Modulus			ISO 527
MD : 23°C, 100 µm	2400	MPa	
TD : 23°C, 100 µm	2300	MPa	
Tensile Stress			ISO 527
MD : Break, 23°C, 100 µm	120	MPa	
TD : Break, 23°C, 100 µm	120	MPa	
Tensile Elongation			ISO 527
MD : Break, 23°C, 100 µm	> 150	%	
TD : Break, 23°C, 100 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

APTIV™ FILMS XPI A105

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)	16.2	kV	ASTM D149
Breakdown Voltage Retention ⁷ (180°C)	> 95.0	%	IEC 60243
Dielectric Constant ⁸ (23°C)	3.20		IEC 60250
Dissipation Factor ⁹	3.0E-3		IEC 60250
Partial Discharge Inception Voltage			IEC 60270
23°C	1199	V	
180°C	890	V	

Additional Information

Product Dimensions

APTIV XPI™ Film A105 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 1300 m is supplied on a 6" (152 mm) cardboard core.

For non-standard formats of APTIV XPI™ Film A105, 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 T_g

⁵ Through Plane

⁶ 1 kV/s

⁷ 180 °C, 500 V/s

⁸ 1 kHz

⁹ 1MHz

Revision Date: 2025

This information is provided "as is". It is not intended to amount to advice. Use of the product is at the customer's/user's risk. It is the customer's/user's responsibility to thoroughly test the product in each specific application to determine its performance, efficacy and safety for each end-use product, device or other application and compliance with applicable laws, regulations and standards. Mention of a product is no guarantee of availability. Victrex reserves the right to modify products, data sheets, specifications and packaging. **Victrex makes no warranties, express or implied (including, without limitation, any warranty of fitness for a particular purpose or of intellectual property non-infringement) and will not be liable for any loss or damage of any nature (however arising) in connection with customer's/user's use or reliance on this information, except for any liability which cannot be excluded or limited by law.** This document may be modified or retracted at any time without notice to the customer/user.

Victrex Manufacturing Limited (or another member of the Victrex group) is the owner or the licensee of all intellectual property rights in and to this document including the following trademarks, VICTREX, 450G, VICTREX AM, VICTREX CT, VICTREX FG, VICTREX HPG, VICTREX HT, VICTREX ST, VICTREX WG, APTIV, LMPAEK, VICOTE, TRIANGLE (Device). All rights are protected by intellectual property rights including copyright under relevant national and international intellectual property laws and treaties. All rights reserved. Copyright © Victrex Manufacturing Limited 2025.