

APTIV™ FILMS 1102

General Information

Product Description

The APTIV™ 1102 range of films are 20% mineral filled, semi-crystalline films manufactured from VICTREX™ PEEK polymer, developed to support engineers designing for ultra-high performance environments where dimensional stability and mechanical robustness are critical. Positioned within the broader APTIV film portfolio, the 1102 range provides an optimized material solution where enhanced stiffness and thermal stability are required beyond unfilled film grades.

APTIV films represent a versatile range of high-performance thermoplastic films that can enable reduced system costs, improved component reliability, and greater design freedom. The APTIV 1102 range combines high temperature capability with mechanical strength, durability, and excellent resistance to radiation, hydrolysis, and aggressive chemicals. The films also deliver electrical insulation, excellent barrier performance with high purity, low moisture absorption, and favourable flammability performance without the use of flame retardants, while maintaining low toxicity of combustion products.

Compared with the APTIV 1000 series, the mineral filled structure provides higher modulus and a lower coefficient of linear thermal expansion, supporting applications that demand improved dimensional control under thermal and mechanical load.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.45	g/cm ³	ISO 1183
Water Absorption ¹			ISO 62
Equilibrium, 23°C, 0.0500 mm, 50% RH	0.080	%	
Shrinkage MD ² (200°C, 50.0 µm)	< 0.50	%	
Shrinkage TD ² (200°C, 50.0 µm)	< 0.50	%	
Films	Nominal Value	Unit	Test Method
Film Thickness - Recommended / Available	12 to 125	µm	
Tensile Modulus			ISO 527-3
MD : 23°C, 25 µm	5000	MPa	
TD : 23°C, 25 µm	4500	MPa	
MD : 23°C, 50 µm	4800	MPa	
TD : 23°C, 50 µm	4300	MPa	
MD : 23°C, 100 µm	4500	MPa	
TD : 23°C, 100 µm	4200	MPa	
Tensile Stress			ISO 527-3
MD : Break, 23°C, 25 µm	100	MPa	
TD : Break, 23°C, 25 µm	80.0	MPa	
MD : Break, 23°C, 50 µm	100	MPa	
TD : Break, 23°C, 50 µm	80.0	MPa	
MD : Break, 23°C, 100 µm	100	MPa	
TD : Break, 23°C, 100 µm	80.0	MPa	
Tensile Elongation			ISO 527-3
MD : Break, 23°C, 25 µm	> 100	%	
TD : Break, 23°C, 25 µm	> 10	%	
MD : Break, 23°C, 50 µm	> 100	%	
TD : Break, 23°C, 50 µm	> 10	%	
MD : Break, 23°C, 100 µm	> 100	%	
TD : Break, 23°C, 100 µm	> 10	%	

APTIV™ FILMS 1102

Films	Nominal Value	Unit	Test Method
Trouser Tear Resistance ³			ISO 6383-1
MD : 50 µm	6.00	N/mm	
TD : 50 µm	7.00	N/mm	
Puncture Resistance (23°C, 50.0 µm)	5	kJ/m ²	Internal Method
Thermal	Nominal Value	Unit	Test Method
CLTE - Flow ⁴ (0.0500 mm)	3.5E-5	cm/cm/°C	ASTM D696
Thermal Conductivity			ASTM E1461
-- ⁵	0.43	W/m/K	
-- ⁶	0.91	W/m/K	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ⁷ (23°C, 50 µm)	1.0E+16	ohms·cm	ASTM D257
Dielectric Strength ⁸ (23°C, 50 µm)	200	kV/mm	ASTM D149
Dielectric Constant (23°C, 50 µm, 10 MHz)	3.6		ASTM D150
Dissipation Factor (23°C, 50 µm, 10 MHz)	1.0E-3		ASTM D150

Notes

¹ 24 hrs

² TM-VX-84

³ 23°C

⁴ below Tg

⁵ Through Plane

⁶ In-Plane

⁷ 100 V

⁸ 0.25 inch electrode

Revision Date: April 2026

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 2026.