

APTIV[®] Films Based on VICTREX[®] PEEK Polymer vs. PVF Film



WEIGHT SAVINGS

- ▲ APTIV film can be produced down to 6 μ m thickness.
- ▲ APTIV film offers potential weight savings versus PVF Film.
- ▲ APTIV film has a lower specific gravity compared to many grades of PVF film.

MOISTURE PERMEATION

- ▲ APTIV film has very good permeation barrier properties and low moisture absorption.
- ▲ APTIV film is capable of accepting a variety of coating technologies including metalization to further enhance barrier properties.

WEAR/ABRASION RESISTANCE

- ▲ APTIV film has excellent wear and abrasion resistance.

CHEMICAL RESISTANCE

- ▲ APTIV film has excellent chemical resistance and is generally better than PVF across a wide variety of chemicals.

FLAME, SMOKE AND TOXICITY

- ▲ APTIV film has excellent flame, smoke and toxicity performance.

FLAMMABILITY TESTING

- ▲ APTIV based cover-film laminates meet FAA FAR 25.856(a) radiant panel testing.
- ▲ APTIV cover films can be laminated to specialized burn-through barrier systems that meet FAA FAR 25.856(b).

MECHANICAL STRENGTH TESTING

- ▲ APTIV cover films out perform PVF film and meet key aerospace industry requirements for mechanical strength.

MANUFACTURABILITY

- ▲ Victrex produces APTIV film in a thickness range of 6-750 μ m and in widths up to 1.5m.
 - ▲ Plasma treatment is available to enhance adhesion properties.
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VICTREX® PEEK POLYMER VS PVF POLYMER

Polymer Type		Polyetheretherketone semi-crystalline	Polyvinyl fluoride semi-crystalline
PHYSICAL PROPERTIES	UNITS	TYPICAL VALUE	TYPICAL VALUE
Specific Gravity	g/cm ³	1.30	1.38-1.72
MECHANICAL			
Ultimate Tensile Strength	kpsi (MPa)	18.9 (130) (ASTM D638)	12 (82) (ASTM D882)
Modulus (E-Mod)	kpsi (GPa)	464 (3.2) (ASTM D638)	340 (2.4) (ASTM D882)
Flexural Strength	kpsi (MPa)	23.6 (163) (ASTM D256)	6 (40)
Hardness (Rockwell)	R scale	99 (ASTM D785)	80
THERMAL			
Continuous Use Temperature (Electrical)	°F (°C)	500 (260) (UL746B)	225 (107)
Continuous Use Range	°F	-70 to +500	-98 to +225
Linear Thermal Expansion (Below Tg)	10-5/°F (°C)	2.6 (4.7)	5.0 (9.0)
Heat Deflection Temperature (1.8 MPa/264 psi)	°F (°C)	306 (152)	180 (82)
ELECTRICAL			
Dielectric Breakdown Voltage			
1 mil (25 microns)	V/mil	4750 (IEC 248)	3000 (ASTM D151)

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