

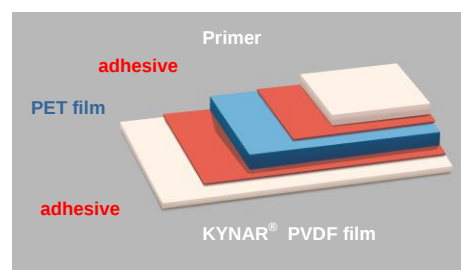
AKASOL® PVL 377

KYNAR® + Polyester + Primer

General

AKASOL® PVL 377 is a KREMPEL laminate consisting of 18µm white KYNAR® PVDF film and polyester film. It has been developed for the specific application as a backsheet of a Photovoltaic Module which minimum requirements are described in the International Standard IEC 61730-1.

Electrical, mechanical and optical properties of **AKASOL® PVL 377** remain at high level when exposed to UV radiation or to rough combined temperature/humidity conditions (e.g. 2000 h, 85%rh, 85°C). The **UV stabilized**, white Primer layer of PVL 377 gives improved adhesion to the encapsulating polymer.



KYNAR® PVDF film is a polyvinylidene fluoride film from ARKEMA

All tests including accelerating tests are performed on plain back sheet.

Required properties in accordance to IEC 61730-1

Property	Unit	Test method	Results	Testing laboratory
Maximum system voltage (in air)	V _{DC}	IEC 60664-1	1070	VDE, Offenbach
- after conditioning 2000h 85°C/85%rh ³⁾	V _{DC}	IEC 60664-1	> 1000	VDE, Offenbach
UV resistance (UVA 340nm)	-	EN 4892-3	Passed ¹⁾	KREMPEL
Flame spread index	-	ASTM E 162	34	UL
Relative Thermal Index (RTI)	°C	UL746B	140 ²⁾	UL

1) 2000h UV exposure with 0.68 W/m² at 340 nm; 60°C; 500 min. wetting; 1000h condensation. Total exposure time 3000h. Tested on air side and Primer side.

2) RTI tested as electrical temperature rating of KYNAR®. Mechanical temperature rating of KYNAR® is 150°C.

3) not required in IEC 61730-1

Certificates



AKASOL® PVL377 recognition is in process with UL with filenumber QIHE2 E312459.



AKASOL® PVL 377 belongs to product family AKASOL® PVL which has TUVdotCOM certification ID0000033022 from TÜV Rheinland® LGA, certificate no.: R60103915.



KREMPEL GmbH Quality Standards: ISO/TS 16949 (Reg.No.068224) and ISO 9001 (Reg.No.003915).

Preliminary data sheet

AKASOL® PVL 377

Additional properties not required by IEC 61730-1

Property	Unit	Test method	Typical values
Thickness	mm	EN 60674-2	0.28
Area weight	g/m ²	EN 60674-2	340
Water vapour permeability 38°C/90%rh	g/m ² · d	ISO 15106-3 Test condition 2	< 2.0
Moisture absorption	%	DIN EN ISO 62	≤ 0.4
Dimensional stability, MD + TD (30 min. / 150 °C)	%	EN 60674-2	≤ 1.2
Reflection of visible light (380 – 780nm) ¹⁾	%	EN 410	82
Reflection of visible light with white background	%	-	91
Reflection of radiation (280 – 2500nm) ¹⁾	%	EN 410	68
Volume resistivity	Ω·cm	UL 746A	nn
Dielectric strength	kV/mm	UL 746A	nn
Comparative Tracking Index	V (max)	IEC 60112	nn
High-current arc ignition	PLC	UL 746A	nn

1) Tested at Primer side = cell side; direct solar radiation. Test equipment: Perkin Elmer Lambda 900 (Ulbrichtkugel) Tested at Fraunhofer ISE, Freiburg, Germany