

AKASOL® PVL 850 b

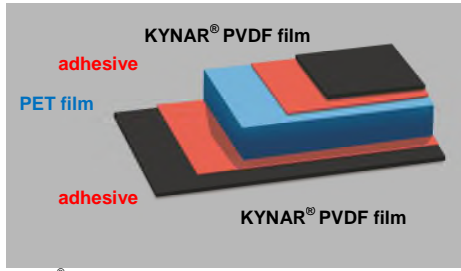
PVDF + Polyester + PVDF

General

PVL 850 b is a KREMPEL laminate consisting of 25µm black KYNAR® PVDF film on both sides of a polyester film core layer. 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 850 b** 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 physical treated surface of PVL 850 b has improved adhesion to the encapsulating polymer.

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



KYNAR® PVDF film is a polyvinylidene fluoride film from Arkema

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	1044	VDE, Offenbach
- After conditioning 2000h 85°C/85%rh ⁵⁾	V _{DC}	IEC 60664-1	1140	VDE, Offenbach
UV resistance	-	EN 4892-2	Passed ¹⁾	TÜV Rheinland® LGA
UV resistance	-	EN 4892-3	Passed ²⁾	KREMPEL
Flame spread index	-	ASTM E 162	RP25 ³⁾	UL
Relative Thermal Index (RTI)	°C	IEC 60216-5	128	TÜV Rheinland® LGA
Relative Thermal Index (RTI)	°C	UL 746B	140 ⁴⁾	UL

1) UV exposure with Xenon lamp > 60W/m²; 300 – 400nm; 65°C; cycles with 18min. spraying and 102 min. drying; Duration of 1500h.
 2) 2000h UV exposure with 0.68 W/m² at 340 nm; 60°C; 500 min. wetting; 1000h condensation. Total exposure time 3000h.
 3) Measured at the whole laminate with 30µm KYNAR® PVDF layers.
 4) RTI tested as electrical temperature rating of KYNAR® Mechanical temperature rating is 150°C.
 5) not required in IEC 61730-1

Certificates



AKASOL®PVL850 b belongs to product family AKASOL®PVL which has UL recognition under File No. QIHE2.E312459



AKASOL®PVL850 b has TUVdotCOM certificate ID0000033022 from TÜV Rheinland® LGA, certificate no.: R60103915.



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

For module retest conditions in case of replacement of PVL 1000V b with PVL 850 b please note TÜV Declaration PVL and TL180713.

All values stated are to be seen as typical values. We reserve the right to introduce changes within the framework of further technical development. We do not accept any obligations or liabilities in respect of this information. Status: 10/2015
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Additional properties not required by IEC 61730-1

Property	Unit	Test method	Typical values
Thickness	mm	EN 60674-2	0.31
Area weight	g/m ²	EN 60674-2	450
Water vapour permeability 38°C/90%rh	g/m ² · d	ISO 15106-3 Test condition 2	2.3
Moisture absorption	%	DIN EN ISO 62	≤ 0.5
Dimensional stability, MD + TD (30 min. / 150 °C)	%	EN 60674-2	≤ 1.2
Reflection of visible light (380 – 780nm) ¹⁾	%	EN 410	4.1
Reflection of radiation (280 – 2500nm) ¹⁾	%	EN 410	4.0
Dielectric breakdown voltage	kV	EN 60674-2	> 21

1) Tested with direct solar radiation. Test equipment: Perkin Elmer Lambda 900 (Ulbrichtkugel) Tested at Fraunhofer ISE, Freiburg, Germany