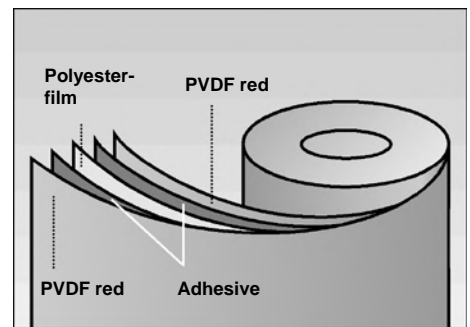


# AKASOL® PVL 1000V red

## PVDF red + Polyester + PVDF red

### General

**PVL 1000V red** is a KREMPEL laminate consisting of red coloured PVDF film and polyester film. This laminate has been developed especially for **photovoltaic applications** and is characterised by its excellent mechanical, electrical and chemical properties. The **outstanding resistance** of our laminate **to weather and moisture** in particular, makes it an ideal material for use in **solar modules**. The physical treated surface of PVL 1000V red has improved adhesion to the encapsulating polymer.



PVDF is a polyvinylidene fluoride film.

Properties	Unit	Test method	Typical values
Thickness of PVDF film	µm	-	30
Thickness of PET film	µm	-	250
Colour of PVDF film	-	-	red
Other combinations of thicknesses and colours available on request			
<b>Properties of PVDF film</b>			
Tensile strength, MD	MPa	ISO 527	> 30
Elongation, MD	%	ISO 527	> 100
Moisture absorption	%	ASTM D-570-81	< 0.3
Coefficient of thermal expansion, MD (50 to 70 °C)	K <sup>-1</sup>	ASTM D-696-79	6.6 - 8 x 10 <sup>-5</sup>
Dimensional stability (30 min. / 150 °C)	%	ASTM D-1204-78	< 0.75
Chemical resistance to hydrochloric acid(10 %), sodium hydroxide (10 %) ammonium hydroxide NH3 (100ppm)	-	2 h at 93°C 2 h at 93°C 1500 h at 40°C	Tensile strength, elongation, interlaminar peel strength are high above the specified values
Service temperature (RTI)*	°C	-	In progress at UL
<b>Properties of PET film</b>			
Tensile strength, MD + TD	MPa	ASTM D-882-80	> 150
Dimensional stability	%	DIN 40634	≤ 1.0
<b>Properties of the laminate</b>			
Thickness	mm	-	approx. 0.32
Peel strength	PVDF/PET N/mm PVDF/VistaSolar N/mm	IPC-TM 650 Method 2.4.9	> 0.5 > 4
Dimensional stability, MD + TD (30 min. / 150 °C)	%	DIN 40634	≤ 1.2
Vapour permeability	g/m <sup>2</sup> · d	DIN 53122	approx. 0.85
Moisture absorption	%	DIN 53495	≤ 0.6
Max. System voltage **	V <sub>DC</sub>	IEC 60664-1	1070

\* expected value > 110°C. \*\* tested by VDE, Offenbach



AKASOL® PVL1000V red belongs to product family AKASOL® PVL which has TUVdotCOM certification ID0000033022 from TÜV Rheinland® LGA, certificate no.: R60103915.

AKASOL® PVL 1000V white is a UL Recognized Component (File No. QIHE2.E312459)

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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