



# Saflex® PS41 Multi Junction PVB Encapsulant

## New encapsulant combats corrosion and discoloration in solar modules

Solutia, the only one-stop source for EVA, TPU, and PVB based solar encapsulants, announces an advanced encapsulant designed to prevent corrosion in solar cells. The new encapsulant, branded as Saflex PS41 PVB, also helps prevent discoloration, making it an ideal module encapsulant for use in building integrated photovoltaics (BIPV).

Metal migration is an electro-chemical process where metal (e.g. silver) - in contact with an insulating material in a humid environment and under an applied electric field - migrates into the insulating material. The net result of metal migration can be either a reduction in insulation resistance or a short circuit which may lead to circuit failure. For solar applications, module manufacturers are concerned that metal migration will affect the long term performance of solar modules which have life expectancies of twenty to thirty years.

Modules designed for use in architectural applications (BIPV) are particularly sensitive to metal migration as any discoloration in the solar module is a critical concern for

architects, designers, and module manufacturers. Discoloration in this case would undermine the aesthetical appearance of a building and bring to question the reliability and performance of the solar modules.

Saflex PS41 is the first solar encapsulant designed specifically to protect against metal migration and maintain the

original aesthetics of the solar module. The key to this patent-pending technology is the ability of this encapsulant to prevent oxidation of certain metals such as silver, nickel, and vanadium when in contact with metal. It is often the presence of these oxides that leads to module discoloration.



Panel: Saflex PS41



Panel: Standard Encapsulant

Silver, for example, is a widely used metal in solar cell stacks and conductive adhesives. Elemental analysis shows significantly reduced silver levels in Saflex PS41 compared to other standard encapsulants.

Saflex PS41 is IEC certified, RoHS approved and UL recognized.

### PRODUCT OFFERING

Product	Thickness	Standard Widths*	Standard Lengths*	Colour	Form
PS41	0.76 mm	134, 264 cm	250, 450, 500 m	Clear	Refrigerated or Interleaved

\* Custom widths and lengths are available.



## SOLUTIA EVA & PVB MANUFACTURING SITES

Solutia is a global leader in specialty chemicals and performance materials. The company focuses on providing solutions for a better life through a range of products used in architectural, automotive, and photovoltaic end markets.

In 2010, Solutia acquired Etimex Solar GmbH to become the world's only single-source supplier of both major encapsulation technologies branded as Vistasolar® EVA and Saflex® PVB. With 100 plus years of combined processing expertise, unmatched manufacturing scale, and a track record of rapid innovation, Solutia provides expert analysis and cutting-edge solutions to the world's leading solar energy companies.

Solutia's is headquartered in St. Louis, Missouri, USA and operates globally with approximately 3,400 employees in more than 50 locations.



## SAFLEX® PS41 - TECHNICAL DATA OVERVIEW

Property	Units	Typical Result	Test Method
Specific Gravity (25°C)	g/cm <sup>3</sup>	1.07	ASTM D792
Specific Heat (50°C)	J/kg·°C	2080	ASTM E1269
Thermal conductivity	W/m-K	0.20	ASTM D5930
Refractive Index	-	1.48	ASTM D542
Total Reflectance	%	---	AirMass 1.5 (400 - 1100nm)
Tensile Strength	kg/cm <sup>2</sup>	>200	JIS 6771
Elongation at Break	%	>200	JIS 6771
Tear Resistance	N	31	ASTM D1004
Adhesion	N/cm	>40	90° Peel Test
	N/mm <sup>2</sup>	>15	Compressive Shear
Bulk Resistivity (0.43% H2O)	Ω cm	1 x 10 <sup>12</sup>	ASTM D257
Surface Resistivity (0.43% H2O)	Ω/sq	2 x 10 <sup>13</sup>	ASTM D257
Coefficient of Thermal Expansion	1/K	1.7 X 10 <sup>-4</sup>	ASTM E831
Normalized Flow (135°C)	µm	240	TMA

## CONTACT

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