

ALISHAN EPE ENCAPSULANT

Alishan EPE is multilayer coextruded film of EVA-POE manufactured by Alishan Green Energy with the cutting edge manufacturing facility. Alishan EPE is suitable for TopCon, PERC and HJT technologies for M10 or G12 configurations. Alishan EPE ensures acid free environment inside the module and hence provides excellent suitability with any metal grid.

Product	Alishan EPE				
Linear meter	Up to 300 meters				
Width	Up to 1350 mm				
Thickness	Up to 0.80 mm				
Properties	Description	Standard	UOM	Alishan EPE	Alishan EPE-T
Physical properties	Tensile strength	ASTM D 638	MPa	12 ± 3	12 ± 3
	Elongation		%	≥ 600	≥ 600
	Adhesion with Glass	ASTM D 903	N/cm	≥ 75	≥ 75
	Adhesion with Backsheet		N/cm	≥ 75	≥ 75
Thermal Property	Thermal Shrinkage	160 Deg C / 5 min	%	MD ≤ 3	MD ≤ 3
				TD ≤ 1	TD ≤ 1
Water Ingress	WVTR	ASTM F 1249	g/m ² .day	< 5	< 5
Electrical Property	Volume resistivity	ASTM D257-14	Ohm. cm	>1×10 ¹⁵	>1×10 ¹⁵
Gel content		ASTM D 2765	%	> 75	> 75
Optical Properties	Transmittance	ASTM E 424	%	≥ 91	≥ 91
	Yellowness Index		-	< 2	< 2
	UV-cut off		nm	360 ± 30	-
Lamination Parameters			UOM	Values	Values
	Vacuum / Evacuation Time		Minutes	5 - 8	5 - 8
	Lamination / Pressing Time		Minutes	10 - 14	10 - 14
	Lamination Temperature		°C	120 - 150	120 - 150



RELIABILITY DATA OF ALISHAN EPE

Ageing	Standard	Parameters	Value
DH 3000 hours 85% RH, 85°C	IEC 62788-2	Peel strength with Glass	> 50 N/10 mm
		Peel strength with Backpro-KPC	> 50 N/10 mm
		Peel strength with Backpro-KPC-T	> 40 N/10 mm
		Transmittance	> 91 %
		Yellowness Index	< 3
UV 180 kWh/m ²	IEC 62788-2	Peel strength with Glass	> 60 N/10 mm
		Peel strength with Backpro-KPC	> 50 N/10 mm
		Peel strength with Backpro-KPC-T	> 40 N/10 mm
		Transmittance	> 91 %
		Yellowness Index	< 2
PID Resistance	IEC 62804	Power degradation	<2%



RELIABILITY DATA OF ALISHAN EPE

(PID performance with Topcon cells)

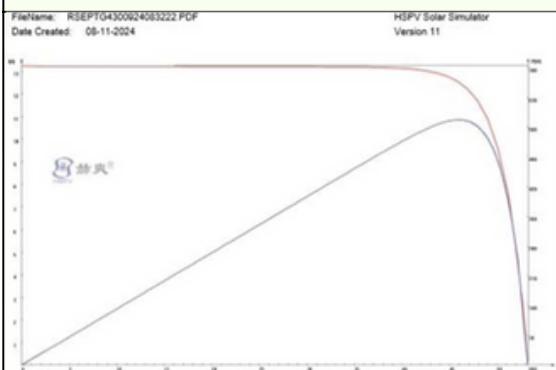


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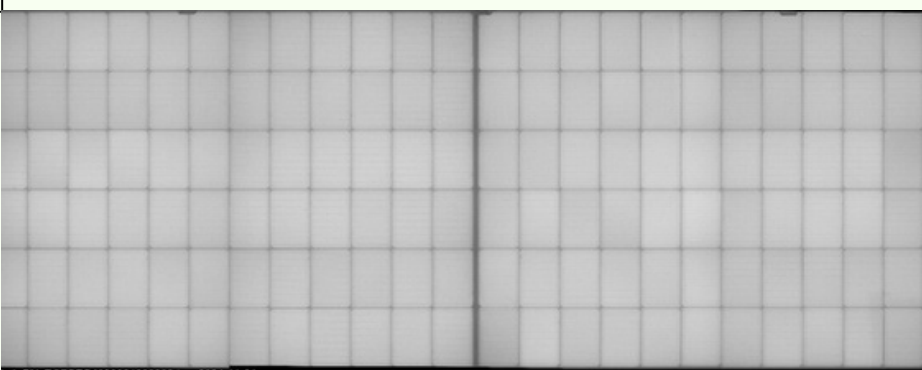
3rd Cycle Results – Electrical Parameter & Electroluminescence (EL) Images

Voc (V)	53.24	FF (%)	81.92
Isc (A)	13.23	Efficiency (%)	22.34
Vmp (V)	45.61	Rseries / Rshunt (Ohm)	0.27/535.81
Imp (A)	12.65	Cal. ID (& Power)	RSEPT2060224003193 (576.65 Watt)
Pmax (W)	576.78	Control ID (& Power)	RSEPT2060224000792 (577.51 Watt)

IV Curve



Electroluminescence (EL) Image



Visual Inspection Result after 3rd Cycle: No defects found.

Wet Leakage Test Data - Final

Measured Value	6033 MΩ	Pass Criteria	≥ 40 MΩ.m ²	Result	PASS
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Power degradation after PID test

Total Power Degradation in Watt : 3.60 Watt in % : 0.62 %	Criteria	Result
	≤ 5 %	PASS

Packing

The EPE rolls are wound a standard 3 inches (inner diameter) paper core, the standard length of EPE film in a roll is up to 300 meters. Each roll was wrapped in polyethylene film and placed in a carton box and 9 boxes are placed in a pallet.

Storage

Must be stored in a dry and temperature of ≤ 30°C and humidity ≤ 60%, the shelf life of this product is 9 months from the date of manufacturing.

