



**Dr. HANS WERNER®
CHEMIKALIEN**

'Solar Encapsulates EVA, POE, EPE Films'

Dr. HANS WERNER CHEMIKALIEN®

EPE (EVA-POE-EVA) FILM

For Encapsulating Solar PV Panels

EPEU307 & EPET306 GRADES

PRODUCT SPECIFICATION



Excellent Anti PID Performance



High Insulation



Outstanding Adhesion



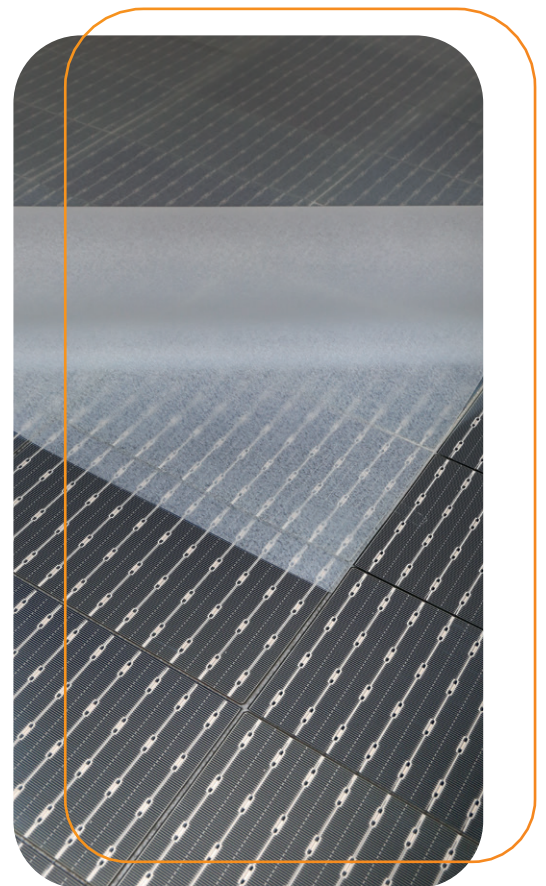
Excellent UV Protection



Better Cross-linking Speed



**Excellent Weatherability and
Long Term Reliability**



Technical Specification (Dr. HWC-EPEU307 - EPET306 Grades)

Properties	Unit	Test Method	Value	
			EPEU307	EPET306
Total Thickness (Tolerance: $\pm 0.05\%$)	mm	UPS method	0.40 ~ 0.90	
Total Width	mm	Scale	Up to 1300	
Thermal Shrinkage (MD)	%	On solar glass (5 min, 125°C)	≤ 3	≤ 3
Water Vapor Transmission	$\text{g/m}^2/24\text{h}$	ASTM F1249	≤ 5	≤ 5
UV Resistance (120kWh/m ²)	ΔYI	ASTM G154	≤ 5	≤ 5
Humidity and Heat Resistance	ΔYI	ASTM E313	≤ 5	≤ 5
Degree of Cross-linking (Gel Content)	%	Soxhlet Method Lamination (14 min, 145°C)	≥ 70	≥ 70
Adhesion to Glass (With Backsheet)	N/cm	ASTM D 903	≥ 60	≥ 60
Adhesion to Backsheet	N/cm	ASTM D 903	≥ 60	≥ 60
Ultimate Elongation (Cured)	%	ASTM D 638	≥ 500	≥ 500
Tensile Strength (Cured)	MPa	ASTM D 638	≥ 10	≥ 10
Optical Transmittance (380nm-1100nm)	%	ASTM D1003	≥ 90	≥ 90
UV Cut-off Wave Length (290nm-380nm)	%	ASTM D1003	≤ 30	≥ 70
Component Power Loss	%	IEC G2804	≤ 5	≤ 5
Dielectric Strength	kV/mm	ASTM D149	≤ 28	≤ 28
Volume Resistivity (Cured)	$\Omega\cdot\text{cm}$	ASTM D 257	$\geq 1*10^{16}$	$\geq 1*10^{16}$

Lamination Recipe

Lamination Parameters	Unit	Single Chamber	Double Chamber
Temperature	°C	145 - 150	145 - 150
Vaccum Time	min	4 - 6	4 - 6
Lamination Time	min	8 - 12	8 - 12

Note 1: Customers can adjust to appropriate lamination parameters according to different equipment or process.

Note 2: It is recommended to use it up within 48 hours after opening of the original packing.

Note 3: These are typical laboratory values that may change depending on the cure conditions as well as the test conditions and methods.



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Encapsulation Solutions

For N-Topcon Modules

Solar Glass	Solar Glass
PT306 (POE)	EPET306 (EPE)
N-Topcon cell	N-Topcon cell
EU307 (EVA)	EU307 (EVA)
Backsheet	Solar Glass

For P-PERC Bifacial Glass-Glass Modules

Solar Glass	Solar Glass	Solar Glass
EPET306 (EPE)	ET306 (EVA)	ET306 (EVA)
P-PERC Bifacial cell	P-PERC Bifacial cell	P-PERC Bifacial cell
EPET306 (EPE)	PT306 (POE)	EPET306 (EPE)
Solar Glass	Solar Glass	Solar Glass

For P-PERC Bifacial Glass-Backsheet Modules

Solar Glass	Solar Glass	Solar Glass
ET306 (EVA)	ET306 (EVA)	ET306 (EVA)
P-PERC Bifacial cell	P-PERC Bifacial cell	P-PERC Bifacial cell
EU307 (EVA)	EPEU307 (EPE)	EU307 (EVA) or EPEU307 (EPE)
White Backsheet	Transparent Backsheet	Black Backsheet