



enlight[™]
Photovoltaic Materials

Polyolefin Encapsulant Film

ENLIGHT[™] Polyolefin Encapsulant Film is an innovative material produced by The Dow Chemical Company specifically for encapsulation of c-Si and thin film photovoltaic modules.

Product Overview:

This durable, high performance film offers module manufacturers the potential for shorter lamination cycle times without sacrificing adhesion performance or material stability during lamination. A low Water Vapor Transmission Rate combined with High Resistivity, excellent UV stability and no acetic acid generation insures modules will experience minimum output efficiency losses as a result of long term exposure to heat, moisture and UV light.

Features and Benefits

- Exceptional resistance to PID
- Low WVTR of 3.3 g/(m² - 24 hrs), 38C, 100%RH
- High volume resistivity
- Excellent UV and weathering performance
- Testing demonstrates 90% output efficiency at 10,000 HRS DHC
- No refrigeration or gel content testing required
- No need for cross-linking during lamination
- No acetic acid generation during lamination
- Good adhesion to glass and module materials
- Potential for shorter lamination cycles

Optical Properties

Optical Transmission	%	>90 ⁽¹⁾
Refractive Index		1.48
UV Cutoff	nm	360

⁽¹⁾ From 450 nm. to 1,200 nm., total hemispherical light transmission, 15 mil specimen

Typical properties; not to be construed as specifications.

Electrical Properties

Volume Resistivity	Ω -cm	10^{18}
Thermal Conductivity	W/m-K	0.291
Dielectric Strength	kV/cm	601

Typical properties; not to be construed as specifications.

Physical Properties

WVTR (Water Vapor Transmission Rate)	g/m ² /24 hrs, 100%RH, 38°C	3.4
Ultimate Tensile Strength	MPa	10
Shore A Hardness		73
Ultimate Elongation	%	>500 ⁽²⁾
Glass Transition Temp (T _g)	Celsius	-40°

All WVTR units are in g/m²/24 hrs measured at 100% RH, average of two specimens.

⁽²⁾ At 24°C, 2 inch/min

Water absorption (RT, 24 hours, in water): EVA: 0.04%, ENLIGHT: < 0.01%

Typical properties; not to be construed as specifications.

Adhesion Data

Adhesion to Glass	N/mm	>10 ⁽³⁾
TPE Adhesion	N/mm	7.9

⁽³⁾ 180° peel test; glass thickness = 3 mm., strain rate = 2 inch/min

Typical properties; not to be construed as specifications.



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