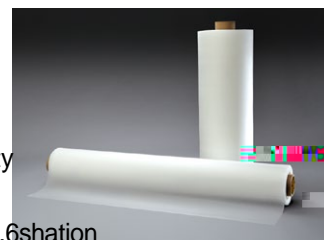


Introduction

3M™ Solar Encapsulant Film PO8100N is a fast cure thermosetting encapsulant designed for high efficiency solar cells in PV modules that enable higher transmission of ultraviolet and visible light to increase module power output (see graph below).

Features

- Conformable and flexible for ease of lamination
- Durable bonding strength with both glass and backsheets
- Excellent UV and damp-heat stability
- Very low shrinkage rate
- High efficiency (e.g. 61.9%)
- Low haze (0.4%)



Typical Physical Properties (Data not for specification purposes)

Items	Typical Value	Test Method
Type	Thermoset	
Thickness (Uncured), mil	18	ASTM F2251
Density (Uncured), g/cm ³	0.8683	ASTM D792
Shrinkage (unrestricted, 150°C for 15 min)	<5%	
Tensile (Cured), lbf	19.57	ASTM D882
Elongation (Cured), %	2000	ASTM D882
Adhesion to Glass, N/cm	>100	ASTM D903
Water Absorption (Cured), wt%	<0.01	ASTM D570
MVTR, g/m ² /day	5.7 (38°C, 100% RH)	
Hardness (Cured), Shore A	72	ASTM D2240
Dielectrical Strength (Cured), KV/mm	50	ASTM D149
Volume Resistivity (Cured) @ 25°C, 1	6E + 14	ASTM D257
Refractive Index (Cured)	1.49	ASTM D542
Haze%	<4%	
Yellowness Index	<0	
Transmittance (Cured), %	91	ASTM D1003
UV-Cut Off (Cured), nm	PO8100N 310	
Dimensional Stability (Uncured), %	MD	ASTM D1204
	TD	
Continuous Service Temperature, °C	>90	
Damp Heat Resistance (85% RH, 85°C 1000h)	Φ*	IEC 61215
	Φ%	

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

¹ Contact 3M for additional information on test methods.



Storage

Shelf life is 6 months under proper storage conditions. The product should be stored indoors with the temperature controlled between 5°C and 30°C and relative humidity below 60%, avoiding direct sunlight. The product should not be placed near any heating equipment or exposed in a dusty place. Check the package box of stored product before unfolding. The product should be used up as soon as possible after the package is unfolded. Any unused product should be properly sealed with original package or similar package.

Precautionary Information

Refer to the product label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

Suggested Laminating Conditions

Condition	Suggested Value
Lamination Temperature	302°F (160°C)
Evacuation Time	4 Minutes
Press Time	11 Minutes

Vacuum time and temperature in the laminator are very critical for final properties. Use of thermocouples is suggested to monitor the temperature to achieve the right gel percentage.

DSC and DMA can be used for designing the appropriate lamination cycle if temperature and time are other than the suggested conditions listed above.

For optimum performance, gel percentage is recommended to be ideally between 70% to 85%.

Contact 3M for additional information.

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Germany 49 2131 144450	United Kingdom 44 1344 858000	Korea 82 2 3771 4043	Mexico 52 55 52702250	Other Areas 800 755 2654
Denmark 45 43 480100	Italy 39 02 70351	India 91 80 22231414	Taiwan 886 933 896752	
Spain 34 91 3216000	Singapore 65 6450 8888	Canada 800 364 3577	Japan 81 3 3709 8283	

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Suggested Laminating Conditions

Condition	Suggested Value
Lamination Temperature	320°F (160°C)
Evacuation Time	4 Minutes
Press Time	11 Minutes

Vacuum time and temperature in the laminator are very critical for final properties. Use of thermocouples is suggested to monitor the temperature to achieve the right gel percentage.

DSC and DMA can be used for designing the appropriate lamination cycle if temperature and time are other than the suggested conditions listed above.

For optimum performance, gel percentage is recommended to be ideally between 70% to 85%.

Contact 3M for additional information.

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