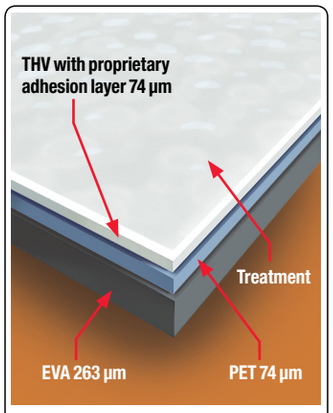
Technical Data

3M™ Scotchshield™ Film 17HTT

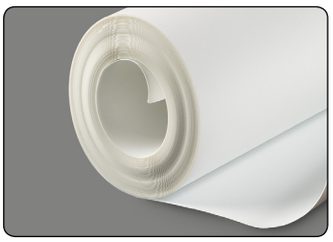
UL Recognized Component and Certified by TÜV

3M™ Scotchshield™ Film 17HTT is a new addition to our line of advanced backside barrier films for crystalline silicon photovoltaic solar modules. Featuring components with field proven performance, 3M™ Scotchshield™ Film 17HTT is engineered to provide high temperature lamination performance.

Made with a unique solvent-free manufacturing process, 3M™ Scotchshield™ Film 17HTT is constructed with a durable outer layer of THV fluoropolymer bonded to PET, with an added layer of EVA to provide excellent adhesion to typical module encapsulants. The outer surface is treated to facilitate the use of a broad range of adhesives, tapes and labels.



3M™ Scotchshield™ Film 17HTT
Total Thickness: 0.41 mm



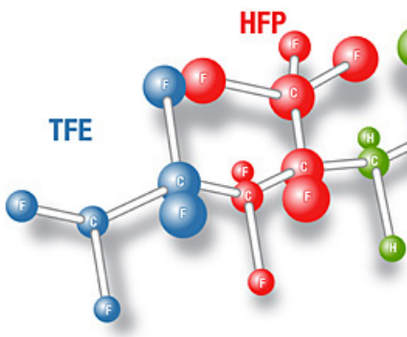
Performance Features

- Excellent retention of interlayer adhesion after environmental aging
- Outstanding UV stability
- Low moisture vapor transmission rate
- Excellent reflectivity
- Exceptional compatibility with encapsulants for strong, durable bonds

THV shows excellent thermal stability

3M fluoropolymers have been under continuous product development and improvement since the 1950s. This advanced material has an extensive record of long-term weathering, low MVTR and UV resistance.

	THV
UL-94 Burn Rating	V-0, VTM-0
UL-746B RTI (Relative Thermal Index Mechanical and Electrical @ 1 mil, 25 µm)	150°C
Radiant Panel Test ASTM E162 For Entire Backsheet	RP25



THV Fluoropolymer
73% Fluorine (**Typical PVF Fluoropolymer:** 41% Fluorine)

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Typical Properties (data not for specification purposes)

	Value	Test Method
Electrical Properties		
Breakdown Voltage	25kV	ASTM D149
Partial Discharge	>1100VDC	IEC60664-1
Mechanical/Physical Properties		
Tensile Strength		
Machine Direction	33 MPa (4.8 kpsi)	ASTM D882
Transverse Direction	39 MPa (5.6 kpsi)	ASTM D882
Elongation		
Machine Direction	116%	ASTM D882
Transverse Direction	83%	ASTM D882
Shrinkage		
Machine Direction	<1.2%	ASTM D2305 (150°C, 15 min)
Transverse Direction	<1.0%	ASTM D2305 (150°C, 15 min)
Adhesion		
Outer Layer to PET	7.0 N/cm (4.0 lbs/in)	3M Internal Method (Post Lamination)
Inner Layer to PET	Substrate Failure	3M Internal Method (Post Lamination)
Backsheet to EVA Encapsulant	Substrate Failure	3M Internal Method (Post Lamination)
Barrier Properties		
Moisture Vapor Transmission Rate	4.0 g/m²-day	ASTM F1249 (37.8°C/100%RH)

Indicated tensile and elongation values are for the PET layer. The outer THV layer remains intact beyond 500% elongation, helping to maintain a durable outer skin on the module.

Substrate Failure: The bond between film layers is stronger than the strength of the bonded films–one or more of the bonded films fail, rather than the adhesive bond.

Processing Features

- Conformable and flexible for ease of lamination
- High temperature lamination performance with robust processing window for wrinkle-free lamination
- Solvent-free manufacturing process, no residual solvents
- Surface treatment to facilitate bonding and sealing of frames and junction boxes
- No special packaging or storage required

Shelf Life

This product has a shelf life of two years from the date of manufacture when stored under normal conditions in the original, unopened package.

Normal storage conditions are defined as 4°C to 38°C (40°F to 100°F) and 0-95% relative humidity. The optimum storage conditions are 22°C (72°F) and 50% relative humidity.

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For more information on our solar manufacturing product line, contact 3M Renewable Energy at 800 755 2654 or visit us at www.3M.com/scotchshieldfilm.

3M

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