



# Matte ETFE Fluoropolymer Film

## ETHYLENE TETRAFLUOROETHYLENE FILM FOR USE IN HIGH-PERFORMANCE APPLICATIONS

TCI's Matte ETFE films are produced from ethylene/tetrafluoroethylene co-polymer resin by melt extrusion casting process. TCI's Matte ETFE film possesses all of the mechanical, chemical and temperature performance of standard ETFE film which makes this high-performance film an excellent material for a wide variety of applications and Industries.



### TCI's Matte ETFE Films Advantages:

- Superior solar light transmission
- Superior release properties
- Excellent chemical and mechanical properties
- Excellent weatherability
- Thermoformable/ Heat sealable
- Additive-free



#### Architectural & Greenhouses

TCI's Matte ETFE film provides highly diffused sunlight evenly while maintaining high light transmission, which makes it an ideal covering for greenhouses as it created the perfect indoor environment for plants to grow.



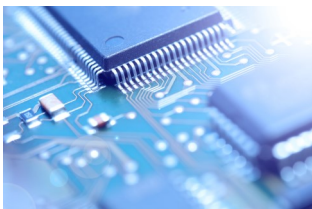
#### Photovoltaic/Solar

TCI's Matte ETFE film are the materials of choice for flexible and rigid photovoltaic front sheet. A low gloss, chemical and water resistant, and UV stable protective top layer that will provide significantly lower reflectivity compared to traditional glass or glossy film top sheets, while providing a durable and flexible outer surface.



#### Radome

TCI's Matte ETFE is a high strength ETFE film designed to protect high-performance antennas in the most challenging environments. Superior mechanical properties, a low dielectric constant and permanent hydrophobic surface provide excellent RF performance across multiple frequencies. TCI films are UV resistant and can be treated to accept adhesives for bonding to structural elements.



#### Release Films for Film Assisted Molding (FAM)

TCI's Matte ETFE films are materials of choice for cushioning/release function in Film Assisted Molding (FAM) processes of semiconductors and integrated circuits. They possess superior release properties and flexibility over a broad continuous use temperature range. ETFE films reduce release forces required to remove the molded integrated circuit from the mold, and provide wrinkle-free surfaces after molding. The mold doesn't need to be cleaned between molding cycles.

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TEXTILES COATED INTERNATIONAL | Manufacturer of High-Performance Fluoropolymer Films, Composites, and Laminates

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# ETFE Fluoropolymer Extruded Films

## ETHYLENE TETRAFLUOROETHYLENE FILM FOR USE IN HIGH-PERFORMANCE APPLICATIONS

			Matte ETFE
General Properties	Units	Test Method	
Specific Gravity		ASTM D792	1.74
Area Yield	ft <sup>2</sup> /lb/mil (m <sup>2</sup> /kg/25mμ)		110 (22.6)
Surface Roughness (RA)	μm	ISO 1997	2.0 +/- 1
Surface Roughness (RZ)	μm	ISO 1997	9.0 +/- 3
Flammability		UL-94	V-0
Water Absorption	%		<0.03
<b>Mechanical Properties</b>			
Tensile Strength	psi	ASTM D882	7,000 (48)
Elongation at Break	%	ASTM D882	300
Tensile Modulus	psi	ASTM D882	140,000 (965)
Initial Tear Strength (2 mil film)	g	ASTM D1004	500
Propagation Tear Strength (2 mil film)	g	ASTM D1922	75
Folding Endurance (MIT)	cycles, ave.	ASTM D2176	>50,000
<b>Thermal Properties</b>			
Continuous Use Temp	°F (°C)	UL-746 B	330 (165)
Melt Point	°F (°C)	ASTM D3418	500 (260)
Coeff. of Lin. Thermal Expansion	in/(in °F)	ASTM D696	4x10 <sup>-5</sup>
<b>Optical Properties</b>			
Refractive Index		ASTM D542	1.4
Solar Transmission (2mil = 50 μm)	%	ASTM E424	94
<b>Product Offering</b>			
Width	inches (mm)		Up to 60" (1,524)
Thickness	mils (μm)		1.5 - 10 (38 - 250)
<b>Surface Treatments Available</b>			
Chemical Etching			•
Plasma Treatment			•
<b>Applications, Markets</b>			
Electrical / Electronics			•
Medical			•
Optical /Photovoltaics			•
Protective/Decorative			•

The above table contains typical representative values and is not to be used for product specification. Contact TCI for a formal specification.

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