

ETFE Film

High Yield Fluoropolymer Film

Norton® ETFE fluoropolymer film is manufactured from a copolymer of ethylene and tetrafluoroethylene resin. This material offers the outstanding performance of fluoropolymer film over a temperature range from cryogenic to 165°C (330°F). The resistance to chemicals and weathering, low flammability, and stress crack resistance make the film an excellent candidate for a wide variety of applications.

Weatherable Applications

Norton® ETFE film offers excellent mechanical properties and tear resistance. The high light transmission (>95%) of ETFE film, when combined with its excellent mechanical and chemical properties, provides excellent performance in architectural roofing designs and greenhouses. ETFE is also an excellent choice in solar collector applications due to its outstanding physical properties and high coverage factor resulting from its low density.

Low Surface-energy Applications

Norton® ETFE film offers a low surface energy, making it an excellent choice for release applications up to 350°F process temperature. The low density of this material, compared to FEP film, provides greater coverage per pound for composite molding release film applications. The low surface energy of ETFE can also be utilized in applications such as wall coverings and anti-graffiti protection for high traffic areas.

Fabrication Capabilities

Norton® ETFE film offers processors excellent dimensional stability for secondary processing such as thermoforming and welding. Products utilizing Saint Gobain's surface treatment technologies such as C-treatment, improve bondability characteristics for metalizing processes and adhesive coating.

Features/Benefits:

- Superior release properties
- Excellent weatherability
- Performance from -200°C (-328°F) to 165°C (330°F)
- Excellent chemical and mechanical properties

Andrew Roberts Inc. is a leading converter and fabricator of high performance coated fabrics tapes & belts. Our converting capabilities include:

Die Cutting - Slitting - Sheeting - Heat Sealing - Sewing

ETFE Film

(continued)

Norton® ETFE Film — Typical Physical Properties*

Property	ASTM Method	Metric Value	Metric Units	English Value	English Units
General					
Specific Gravity	D-792	1.70-1.76		1.70-1.76	
Yield (1 mil film)		22.5	m ² /kg	110	ft ² /lb
Flammability	UL-94	V-0		V-0	
Water Absorption, 24 hrs		<0.03	%	<0.03	%
Mechanical					
Tensile Strength @ Break	D-882	48	MPa	7000	psi
Elongation @ Break	D-882	300	%	300	%
Tensile Modulus	D-882	965	MPa	140000	psi
Propagating Tear Strength, 1 mil	D-1922	>2.9	N	0.65	lb _f
Electrical					
Dielectric Strength, 1 mil	D-149	215	kV/mm	5500	V/mil
Dielectric Constant, 1 kHz	D-150	2.6		2.6	
Dissipation Factor, 1 kHz	D-150	<0.0008		<0.0008	
Thermal					
Melt Point	D-3418	250-270	°C	482-518	°F
Continuous Service Temperature		165	°C	330	°F
Specific Heat		2000	J/(kg•°K)	0.46	BTU/(lb•°F)
Coefficient of Thermal Conductivity		0.238	W/(m•°K)	1.65	BTU•in/(hr•ft ² •°F)
Limiting Oxygen Index	D-2863	30	%	30	%
Optical					
Refractive Index	D-542	1.40		1.40	

*Represent typical performance properties and should not be used for specification purposes.

Contact your Saint-Gobain Performance Plastics representative for appropriate values.

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