

## Saint-Gobain Norton® ETFE Fluoropolymer Film

Category : Polymer , Film , Thermoplastic , Fluoropolymer , ETFE/ECTFE

### Material Notes:

**Features/Benefits:** Superior release properties  
Excellent weatherability  
Performance from -200°C (-328°F) to 165°C (330°F)  
Excellent chemical and mechanical properties  
Thermoformable  
Product thicknesses from 0.0005" (0.0127 mm) to 0.020 (0.5 mm)  
Width up to 62" (1575 mm) for 0.0005" to 0.010" and up to 48" for 0.010" - 0.020"  
Blue, red and custom colors available  
Available in cementable (surface treated) form  
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 this 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 Norton® ETFE film, when combined with its excellent mechanical and chemical properties, provides excellent performance in architectural roofing designs and greenhouses. Norton® ETFE film 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 Norton® FEP film, provides greater coverage per pound for composite molding release film applications. The low surface energy of Norton® 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.

**Surface Treatments Available:** C-Treatable (cementable, 1 or 2 sides); Corona Treatment (1 or 2 sides); Chemical Etching (1 or 2 sides)  
Flammability (UL-94) = V-0  
Used for Aerospace/Release Films, Chemical Process, Electrical/Electronics, Medical, Protective/Decorative.

**Specification Notes:** All values represent typical performance properties and should not be used for specification purposes. Information provided by Saint Gobain Performance Products.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Saint-Gobain-Norton-ETFE-Fluoropolymer-Film.php](http://www.lookpolymers.com/polymer_Saint-Gobain-Norton-ETFE-Fluoropolymer-Film.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.70 - 1.76 g/cc	1.70 - 1.76 g/cc	ASTM D-792
Water Absorption	<= 0.030 %	<= 0.030 %	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	48.3 MPa	7000 psi	ASTM D-882
Elongation at Break	300 %	300 %	ASTM D-882
Tensile Modulus	0.965 GPa	140 ksi	ASTM D-882
Elmendorf Tear Strength, MD	11.6 g/micron	295 g/mil	(direction not reported), Propagation Tear Strength; ASTM D-1922

Thermal Properties	Metric	English	Comments
CTE, linear	72.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	40.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM D-696
	@Temperature 20.0 $\text{Å}^\circ\text{C}$	@Temperature 68.0 $\text{Å}^\circ\text{F}$	
Specific Heat Capacity	1.92 J/g- $\text{Å}^\circ\text{C}$	0.460 BTU/lb- $\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.238 W/m-K	1.65 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ASTM D-2863
Melting Point	250 - 270 $\text{Å}^\circ\text{C}$	482 - 518 $\text{Å}^\circ\text{F}$	ASTM D-3418
Maximum Service Temperature, Air	166 $\text{Å}^\circ\text{C}$	330 $\text{Å}^\circ\text{F}$	UL-746 B
Flammability, UL94	V-0	V-0	
Oxygen Index	$\geq 30\%$	$\geq 30\%$	ASTM D2863

Optical Properties	Metric	English	Comments
Refractive Index	1.40	1.40	ASTM D542
Transmission, Visible	90 %	90 %	ASTM E424

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	1.00e+14 ohm	1.00e+14 ohm	ASTM D-257
Dielectric Constant	2.6	2.6	ASTM D-150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	217 kV/mm	5500 kV/in	ASTM D-149
Dissipation Factor	$\leq 0.00080$	$\leq 0.00080$	ASTM D-150

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China