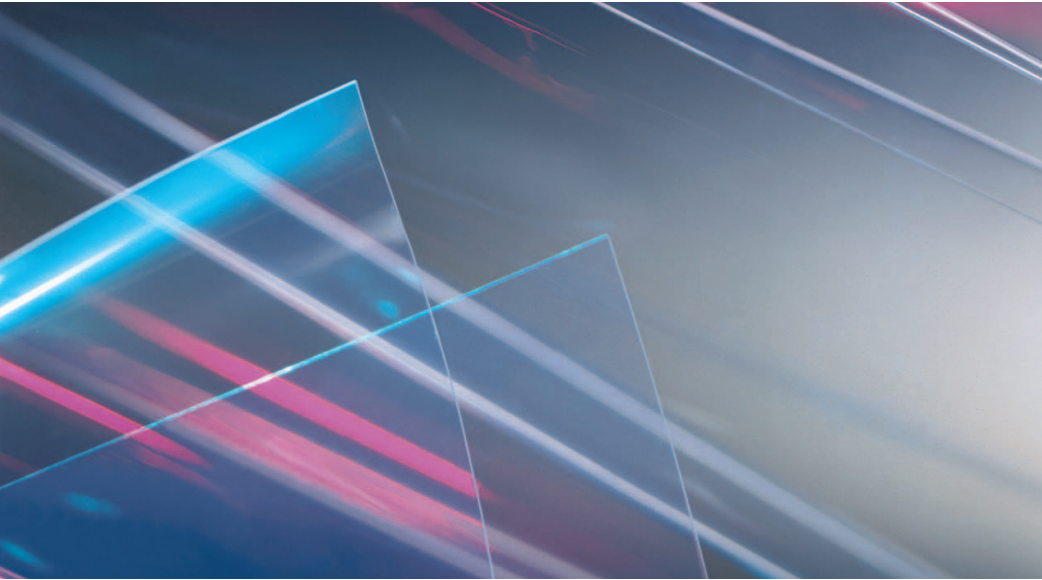


# Norton® MFA Fluoropolymer Film



Norton® MFA fluoropolymer film is manufactured from a new, semi-crystalline thermoplastic fluoropolymer\* designed specifically for high temperature applications in the chemical and electrical industries. This film's unique properties place its performance between that of Norton® FEP and Norton® PFA films. Norton MFA film is a clear, transparent product that can be heat sealed, thermoformed, welded, metallized, or laminated to a wide variety of materials.

Norton MFA film offers a combination of excellent dielectric properties across a wide temperature and frequency range, chemical and stress-crack resistance similar to PFA, a continuous service temperature of 230°C (446°F) and the highest clarity of any fluoropolymer film.

Chemical applications such as tank linings and roll covers benefit from this unique combination of properties.

The high clarity/low haze structure provides excellent performance in applications such as solar collectors, cell culture bags, UV sterilization applications, and protective films from UV sources.

The combination of chemical resistance and high temperature resistance over a wide frequency range make Norton MFA film an ideal component for circuit board fabricators. Flat cable and electrical insulation applications benefit from the low dielectric constant and dissipation factors. Films are available from 0.0005" thickness up to 62" wide and are produced in a Class 100,000 clean room.

The high temperature resistance and non-wetting surface of Norton MFA make an ideal material for use as a high temperature release or bagging film for composite manufacturers. Norton MFA with 350-400% elongation, continuous service temperature of 230°C (446°F), and a melt point of 290°C (554°F) meet the needs of BMI systems requiring a 230°C (446°F) cure temperature.

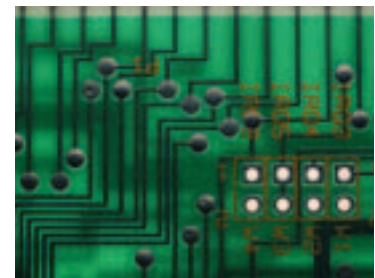
\*Hyflon® MFA, from Ausimont, is made by copolymerization of tetrafluoroethylene and perfluoromethyl vinyl ether.  
Norton® is a registered trademark.

## Features/Benefits

- Outstanding clarity
- Performance from -254°C (-425°F) to 230°C (446°F)
- Outstanding flex life and stress-crack resistance
- Outstanding anti-stick release properties
- Excellent electrical properties
- Excellent weatherability
- Minimum thicknesses of 0.0005" (0.0127 mm)
- Widths up to 62" (1575 mm)
- All films are manufactured and converted in class 100,000 clean room facility



High clarity/low haze for solar collectors



230°C continuous use temperature meets soldering requirements

## Norton® MFA Fluoropolymer Film — Typical Physical Properties\*

Property	ASTM Method	Metric Value	Metric Units	English Value	English Units
<b>General</b>					
Specific Gravity	D-792	2.15		2.15	
Yield (1 mil film)		18	m <sup>2</sup> /kg	90	ft <sup>2</sup> /lb
Flammability	UL-94	V-0		V-0	
Water Absorption		<0.03	%	<0.03	%
<b>Mechanical</b>					
Tensile Strength @ Break	D-882	24-30	MPa	3500-4375	psi
Elongation @ Break	D-882	300	%	300	%
Fold Endurance (M.I.T.)	D-2176	6000	cycles	6000	cycles
<b>Electrical</b>					
Dielectric Strength, 1 mil	D-149	196	kV/mm	5000	V/mil
Dielectric Constant, 1 kHz	D-150	2.00		2.00	
Dissipation Factor, 1 kHz	D-150	<0.0005		<0.0005	
<b>Thermal</b>					
Melt Point	D-3418	280-290	°C	536-554	°F
Continuous Service Temperature		230	°C	446	°F
Limiting Oxygen Index	D-2863	>95	%	>95	%
<b>Optical</b>					
Haze	D-1003	2.5-3.5	%	2.5-3.5	%

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

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



### PERFORMANCE PLASTICS

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