

Saint-Gobain Norton® MFA Fluoropolymer Film

Category : Polymer , Film , Thermoplastic , Fluoropolymer

Material Notes:

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 Norton® MFA fluoropolymer film is manufactured from a new, semi-crystalline thermoplastic fluoropolymer (Hyflon® MFA, from Ausimont, is made by copolymerization of tetrafluoroethylene and perfluoromethyl vinyl ether) 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° (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°(446°F) cure temperature. 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 Applications Include: 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-MFA-Fluoropolymer-Film.php

| Physical Properties | Metric | English | Comments |
|---------------------|------------|------------|------------|
| Specific Gravity | 2.15 g/cc | 2.15 g/cc | ASTM D-792 |
| Water Absorption | <= 0.030 % | <= 0.030 % | |

| Mechanical Properties | Metric | English | Comments |
|-------------------------|------------------|-----------------|------------|
| Tensile Strength, Yield | 24.1 - 30.16 MPa | 3500 - 4375 psi | ASTM D-882 |
| Elongation at Break | 300 % | 300 % | ASTM D-882 |
| Tensile Modulus | 0.496 GPa | 72.0 ksi | ASTM D-882 |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| Thermal Properties | Metric $m/m-^{\circ}C$ | English $in-in-^{\circ}F$ | Comments |
|----------------------------------|------------------------|---------------------------|-------------|
| CTE, linear | @Temperature 20.0 °C | @Temperature 68.0 °F | ASTM D-896 |
| Melting Point | 280 - 290 °C | 536 - 554 °F | ASTM D-3418 |
| Maximum Service Temperature, Air | 230 °C | 446 °F | UL-746 B |
| Flammability, UL94 | V-0 | V-0 | |
| Oxygen Index | $\geq 95\%$ | $\geq 95\%$ | ASTM D2863 |

| Optical Properties | Metric | English | Comments |
|-----------------------|-------------|-------------|---------------------------------------|
| Refractive Index | 1.35 | 1.35 | ASTM D542 |
| Haze | 2.5 - 3.5 % | 2.5 - 3.5 % | ASTM D1003 |
| Transmission, Visible | 90 % | 90 % | transparent; thickness not quantified |

| Electrical Properties | Metric | English | Comments |
|--------------------------------|---------------------------|---------------------------|---------------------------------------|
| Surface Resistivity per Square | 1.00e+15 ohm | 1.00e+15 ohm | ASTM D-257 |
| Dielectric Constant | 2.0 @Frequency 1000 Hz | 2.0 @Frequency 1000 Hz | ASTM D-150 |
| Dielectric Strength | 197 kV/mm | 5000 kV/in | Value for a 1 mil sample.; ASTM D-149 |
| Dissipation Factor | ≤ 0.00050 | ≤ 0.00050 | ASTM D-150 |

| Descriptive Properties | Value | Comments |
|-------------------------------|-------|----------|
| Fold Endurance (MIT) (cycles) | 6000 | |

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