

Norton® PFA Fluoropolymer Film



Norton® PFA fluoropolymer film is manufactured by Saint-Gobain Advanced Films and Fabrics from perfluoroalkoxy (PFA) polymer resin. This film offers the highest continuous use temperature 260°C (500°F) of any melt-processable fluoropolymer film. Norton PFA film offers many of the performance properties of PTFE in a clear, transparent form and can be heat sealed, thermoformed, welded, metallized, or laminated to a wide variety of materials.

Norton® PFA film offers a combination of excellent dielectric properties across a wide temperature and frequency range, the highest level of chemical and stress crack resistance, excellent clarity and weatherability. The chemical resistance of PFA provides excellent tank-lining performance.

Norton® **PFA Type WF** (mechanical grade) is an ideal economical solution for applications that don't require high aesthetic standards, such as hot melt adhesive (welding tape) application. PFA WF grade possesses all physical, mechanical, and thermal properties of PFA film while offering up to 25% savings.

Applications

The combination of chemical resistance and high temperature resistance over a wide frequency range make Norton PFA film an ideal component for circuit board fabricators, flat cable, and electrical insulation applications. Product thickness availability from 0.0005" through 0.030" at widths up to 62" offers circuit board designers flexibility in structure design.

The high temperature resistance and non-wetting surface of Norton PFA make it an ideal material for use as a high temperature release film or bagging film for composite manufacturers. The continuous use temperature of 260°C (500°F) and a melt point 310°C (590°F) meet the needs of new resin systems requiring a 230°C (446°F) cure temperature.

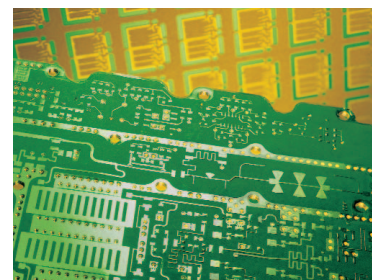
Norton® is a registered trademark.

Features/Benefits

- Outstanding flex life and stress crack resistance
- Performance from -254°C (-425°F) to 260°C (500°F)
- Outstanding anti-stick release properties
- Excellent electrical properties
- Excellent weatherability
- Product thicknesses from 0.0005" (0.0127 mm) to 0.030" (0.76 mm)
- Width up to 62" (1575 mm) for 0.0005" to 0.010" and up to 48" for over 0.010"
- All films are manufactured and converted in class 100,000 clean room facility
- Available in cementable (surface treated) form



High temperature resistance and non-wetting surface for bagging film



High chemical and temperature resistance

Norton® PFA Fluoropolymer Film — Typical Physical Properties*

| Property | ASTM Method | Metric Value | Metric Units | English Value | English Units |
|---|-------------|------------------------|--------------------|------------------------|---------------------------------|
| General | | | | | |
| Specific Gravity | D-792 | 2.12-2.18 | | 2.12-2.18 | |
| Yield (1 mil film) | | 18 | m ² /kg | 90 | ft ² /lb |
| Water Absorption | | <0.01 | % | <0.01 | % |
| Mechanical | | | | | |
| Tensile Strength @ Break | D-882 | 21 | MPa | 2250 | psi |
| Elongation @ Break | D-882 | 300 | % | 300 | % |
| Elastic Modulus | D-882 | 480 | MPa | 70000 | psi |
| Initial Tear Strength, 2 mil | D-1004 | 4.9-5.3 | N | 1.1-1.2 | lb _f |
| Propagating Tear Strength, 2 mil | D-1922 | 2.4-2.7 | N | 0.55-0.60 | lb _f |
| Fold Endurance (M.I.T.) | D-2176 | >600000 | cycles | >600000 | cycles |
| Electrical | | | | | |
| Dielectric Strength, 1 mil | D-149 | 185 | kV/mm | 4700 | V/mil |
| Dielectric Constant, 1 kHz | D-150 | 2.1 | | 2.1 | |
| Dissipation Factor, 1 kHz | D-150 | 0.0005 | | 0.0005 | |
| Thermal | | | | | |
| Melt Point | D-3418 | 302-310 | °C | 575-590 | °F |
| Continuous Service Temperature | | 260 | °C | 500 | °F |
| Specific Heat | | 1172 | J/(kg•°K) | 0.28 | Btu/(lb•°F) |
| Coefficient of Thermal Conductivity | D-2863 | 0.195 | W/(m•°K) | 1.35 | Btu•in/(hr•ft ² •°F) |
| Coefficient of Linear Thermal Expansion | D-696 | 9.9 x 10 ⁻⁵ | mm/(mm•°C) | 5.5 x 10 ⁻⁵ | in/(in•°F) |
| Flammability | UL-94 | V-0 | | V-0 | |
| Limiting Oxygen Index | D-2863 | 95 | % | 95 | % |
| Optical | | | | | |
| Refractive Index | D-542 | 1.35 | | 1.35 | |
| Solar Transmission | E-424 | 96 | % | 96 | % |

*Represent typical performance properties and should not be used for specification purposes. Contact your Saint-Gobain Performance Plastics representative for appropriate values.



Saint-Gobain Performance Plastics
Advanced Films and Fabrics—The Americas
150 Dey Road
Wayne, NJ 07470-4699
Phone: (800) 526-7844
Fax: (973) 696-4056

Saint-Gobain Performance Plastics
Advanced Films and Fabrics—Asia
Suite 1203, No. 147
Chienkwo North Road Section 2
Taipei Taiwan, 104
Taiwan
Tel: 886 (2) 25034201
Fax: 886 (2) 25034202

Saint-Gobain Performance Plastics
Advanced Films and Fabrics—Europe
Clonroad
Ennis
County Clare
Ireland
Tel: 353 65 68 20988
Fax: 353 65 68 20993

Limited Warranty: For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product(s) to be free from defects in manufacturing. Our only obligation will be to provide replacement product for any portion proving defective, or at our option, to refund the purchase price thereof. User assumes all other risks, if any, including the risk of injury, loss or damage, whether direct or consequential, arising out of the use, misuse, or inability to use this product(s). SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



NOTE: Saint-Gobain Performance Plastics Corporation does not assume any responsibility or liability for any advice furnished by it, or for the performance or results of any installation or use of the product(s) or of any final product into which the product(s) may be incorporated by the purchaser and/or user. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product(s) for the particular purpose desired in any given situation.