

# Norton® Polyimide Film



## Saint-Gobain Performance Plastics Introduces Polyimide Film

Polyimide films provide excellent electrical, thermal, physical and chemical properties over a wide temperature range in a lightweight package (136 sq ft/lb [28 m<sup>2</sup>/kg] for 1 mil) making them superior for electrical insulation applications.

**Taimide® polyimide films** are produced employing a world-class process that makes them dimensionally stable and inherently isotropic, meeting exacting tolerances, physically strong and electrical sound in widths up to 61.8" (1570mm). These products meet all of the requirements of ASTM D5213 which superseded MIL-P-46112B. **TH Series** polyimide films exceed UL 94 V-0 flammability, as well as a 455°F (235°C) Relative Thermal Index (RTI) for both electrical and mechanical properties (UL file E231847). These high performance films are exclusively manufactured to Saint-Gobain's exacting specifications for the electrical insulation market by Taimide Technology, Inc. (Taiwan).

## Packaging

Roll cores will be of sufficient strength to prevent collapsing from handling. The standard will be 3" (76.2mm) nominal on cardboard.

Roll lengths can be customized, but the standard is 5000 feet (1524m) for TH-025 1.0 mil film and 2500 feet (762m) for TH-050 2.0 mil film. Rolls can be StablEdge® wound as well as flat pads or universal packages. Consult customer service for details.

Width tolerances on slit materials will be held to 1/64" (0.4mm) up to the max width of 61.8" (1570mm).

Splices are possible with slit width orders. They will be held to a minimum, if they occur. Minimum length between splices will be 300 feet (91m).

## TH Series PI Films

### Features / Benefits

- Technically advanced for superior performance
- Temperature resistant from -445°F to over 752°F (-265°C to over 400°C)
- Dimensionally Stable (<0.08% Shrink)
- Isotropic (MD/TD Elongation 85%)
- Available adhesive coated
- Available in slit widths rolls
- Available in StablEdge put-ups
- Available coated with FEP on one or both sides



*TH Series Polyimide to produce high temperature tapes and labels*



*FEP - PI - FEP wire insulation for aircraft electrical systems (B13-60)*



*StablEdge® custom winding*

## Norton® High Performance Films: Polyimide

Properties	Item Thickness	Units mils (µm)	Taimide®		Test Condition	Test Method
			TH-025 1.0 (25)	TH-050 2.0 (50)		
Mechanical	Tensile Strength	lbs/inch (kgf/mm)	34 (0.55)	70 (1.1)	68°F (20°C)	ASTM D882
	Elongation	%	85	85	68°F 20°C	ASTM D882
	Young's Modulus	kgf/mm <sup>2</sup>	300	300	68°F 20°C	ASTM D882
Electrical	Dielectric Breakdown	V/mil	7000	6500	60 Hz, 68°F (20°C)	ASTM D149
	Dielectric Constant	–	3.3	3.3	1MHz, 68°F (20°C)	ASTM D150
	Dissipation Factor	–	0.004	0.004	1MHz, 68°F (20°C)	ASTM D150
	Volume Resistivity	Ω – cm	>10 <sup>16</sup>	>10 <sup>16</sup>	500V, 68°F (20°C)	ASTM D257
	Surface Resistance	Ω	>10 <sup>16</sup>	>10 <sup>16</sup>	500V, 68°F (20°C)	ASTM D257
Thermal	Coefficient of Thermal Expansion	ppm/°F (ppm/°C)	25 (45)	25 (45)	212-392°F (100-200°C)	ASTM D696
	Heat Shrinkage	%	0.08	0.08	392°F, 2hr (200°C)	ASTM D5213-04
	Tg (Glass Transition)	°F (°C)	716-770 (380-410)	716-770 (380-410)	–	DSC,TMA
Physical	Moisture Absorption	%	2.8	2.8	68°F (20°C), 24hr Immersion	ASTM D570
	Density	g/cc	1.46	1.46	68°F (20°C)	ASTM D1505
Chemical	MEK	Tensile Strength MD Retained %	100	100	68°F (20°C), 10min Immersion, then test after 24hrs	ASTM D882

 Underwriters Laboratories Inc. UL Certification E231847: Flame Class UL94 V-O and Electrical/Mechanical RTI 235°C



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