

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 m²/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 These products meet all of the requirements of ASTM D5213 which superseded MIL-P-46112B.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).

Availability and Packaging

This product is currently available in 1/2, 3/4, 1, 2, 3, and 5 mil (12, 19, 25, 50, 75, and 125µm) at a maximum width of 61.8" (1570mm) with continuous lengths from 1000 to 10,000 feet (3000m).

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

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
- Thicknesses: 1/2, 3/4, 1, 2, 3 and 5 mils

TH Series Polyimide to produce high temperature tapes and labels



FEP - PI - FEP wire insulation for aircraft electrical systems



StablEdge® custom winding



Norton® High Performance Films: Polyimide

Properties	Item Thickness	Units mils (µm)	TH-012 .50 (12)	TH-019 .75 (19)	TH-025 1.0 (25)	TH-050 2.0 (50)	TH-075 3.0 (75)	TH-125 5.0 (125)	Test Condition	Test Method	
Mechanical	Tensile Strength	lbs/inch ²	35000	35000	35000	35000	30000	25000	68°F (20°C)	ASTM D882	
	Elongation	%	85	85	85	85	90	90	68°F (20°C)	ASTM D882	
	Young's Modulus	K/psi	455	455	455	455	455	455	68°F (20°C)	ASTM D882	
Electrical	Dielectric Breakdown	V/mil	7600	7400	7100	6600	5800	4000	60 Hz, 68°F (20°C)	ASTM D149	
	Dielectric Constant	–	3.3	3.3	3.3	3.3	3.3	3.3			
	Dissipation Factor	–	0.005	0.005	0.005	0.005	0.005	0.005	1 MHz, 68°F (20°C)	ASTM D150	
	Volume Resistivity	Ω – cm	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	1 MHz, 68°F (20°C)	ASTM D150
	Surface Resistance	Ω	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	500 V, 68°F (20°C)	ASTM D257
Thermal	Coeffiic. of Thermal Exp.	ppm/°F	22	22	22	22	22	22	212-392°F (100-200°C)	ASTM D696	
	Heat Shrinkage	%	0.03	0.05	0.05	0.05	0.05	0.05	392°F, 2hr (200°C)	ASTM D5213-04	
	Tg (Glass Transition)	°F	>715	>715	>715	>715	>715	>715	–	DSC,TMA	
	Electrical RTI	°F	455	455	455	455	455	455	–	UL 746B	
	Mechanical RTI	°F	455	455	455	455	455	455	–	UL 746B	
	Flammability	–	V-0	V-0	V-0	V-0	V-0	V-0	V-0	–	UL 94
Physical	Moisture Absorption	%	2.5	2.5	2.5	2.5	2.5	2.5	68°F (20°C), 24hr Immersion	ASTM D570	
	Density	g/cc	1.46	1.46	1.46	1.46	1.46	1.46	68°F (20°C)	ASTM D1505	
	Yield	ft ² /lb	272	204	136	68	45	27	68°F (20°C)	–	
Chemical	MEK	Tensile Strength MD Retained %	100	100	100	100	100	100	68°F (20°C), 10min Immersion then test after 24 hrs	ASTM D882	
	Benzene		100	100	100	100	100	100			
	Toulene		100	100	100	100	100	100			



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



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