

## TH POLYIMIDE

# POLYIMIDE FILMS

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

VERSIV™ polyimide films meet exact tolerances and are produced employing a world-class process that makes them dimensionally stable, inherently isotropic, physically strong, and electrically sound. These products meet all the requirements of ASTM D5213, which superseded MIL-P-46112B. VERSIV™ polyimide films exceed UL 94 V-0 flammability, as well as a 235 °C (455 °F) Relative Thermal Index (RTI) for both electrical and mechanical properties.

*\*Previously known as **CHEMFILM® POLYIMIDE FILMS***



### FEATURES AND BENEFITS

- High dielectric strength
- Temperature resistance from -265 °C to over 400 °C (-445 °F to over 752 °F)
- Isotropic properties
- Dimensionally stable
- Retains 100% tensile strength (MD) when exposed to MEK, benzene and toluene (ASTM D882)
- Scratch and abrasion resistant

### AVAILABILITY

- Available in 0.012, 0.025, 0.05, and 0.076mm (0.5, 1, 2, and 3 mil) gauges
- Rolls are available at a maximum width of 1,570mm (61.8") with continuous lengths up to 5,000 feet.

\*Pictures shown are for illustration purpose only.



### APPLICATIONS

- Wire and cable requiring light weight and high dielectric strength
- Electrical insulation with fire resistance and chemical barrier properties
- Flexible electronics

## TYPICAL PROPERTIES

Property	TH-012	TH-025	TH-050	TH-075	Units	Test Method	Test Conditions
Thickness	0.5	1.0	2.0	3.0	mils	-	-
	0.012	0.025	0.050	0.075	mm		
Tensile Strength	25				Kgf/mm <sup>2</sup>	ASTM D-882	20°C (68°F)
	35,000				lbs/in <sup>2</sup>		
Elongation	85	85	85	90	%	ASTM D-882	20°C (68°F)
Young's Modulus	450				Kgf/mm <sup>2</sup>	ASTM D-882	20°C (68°F)
	320				lbs/in <sup>2</sup>		
Dielectric Breakdown	300	280	260	230	volts/μm	ASTM D-149	60Hz, 20°C (68°F)
	7,600	7,100	6,600	5,800	volts/mil		
Dielectric Constant	3.3				-	-	-
Dissipation Factor	0.005				-	ASTM D-150	1MHz, 20°C (68°F)
Volume Resistance	>10 <sup>16</sup>				Ω-cm	ASTM D-150	1MHz, 20°C (68°F)
Surface Resistance	>10 <sup>16</sup>				Ω	ASTM D-257	500v, 20°C (68°F)
Coefficient of Thermal Expansion	40				ppm/°C	ASTM D-696	200°C (392°F)
	22				ppm/°F		
Heat Shrinkage	0.03	0.05	0.05	0.05	-	ASTM D-696	-
TG (Glass Transition)	>380				°C	DSC, TMA	-
	>715				°F		
Electrical RTI	235				°C	UL-746B	-
	455				°F		
Mechanical RTI	235				°C	UL-746B	-
	455				°F		
Flammability	V-0				-	UL-94	-
Moisture Absorption	2.5				%	ASTM D-570	20°C (68°F)
Density	1.46				g/cm <sup>2</sup>	-	20°C (68°F)
Yield	272	136	68	45	ft <sup>2</sup> /lb	-	20°C (68°F)
	56	28	14	9	m <sup>2</sup> /kg		
Continuous Use Temperature	235				°C	-	-
	455				°F		

The values presented are typical values and should not be used for specification purposes. Contact your Saint-Gobain Composite Solutions representative for more information.

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WARRANTY: We warranty specifications at delivery and honor claims for such breach of warranty for six (6) months after delivery. The only obligation under any applicable product warranty will be to replace 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 COMPOSITE SOLUTIONS DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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