



CHEMFILM®

Engineered for Demanding Applications

CHEMFILM® Polyimide Film

Polyimide films provide excellent electrical, thermal, physical, and chemical properties over a wide temperature range in a lightweight package (28 m²/kg [136 sq ft/lb] for 1 mil) making them superior for a wide array of applications.

CHEMFILM® polyimide films meet exacting 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 These products meet all the requirements of ASTM D5213, which superseded MIL-P-46112B. CHEMFILM 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.

Availability

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

Advantages

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



CHEMFILM® Typical Physical Properties*

Typical Properties	Test Method	Test Conditions	TH-012	TH-025	TH-050	TH-075	Units
Thickness	–	–	0.5	1.0	2.0	3.0	mils
	–	–	0.012	0.025	0.050	0.075	mm
Tensile Strength	ASTM D-882	20°C(68°F)	25 (35,000)				Kgf/mm ² (lbs/in ²)
Elongation	ASTM D-882	20°C(68°F)	85	85	85	90	%
Young's Modulus	ASTM D-882	20°C(68°F)	455 (320)				Kgf/mm ² (lbs/in ²)
Dielectric Breakdown	ASTM D-149	60Hz, 20°C(68°F)	300	280	260	230	volts/ μm
			7,600	7,100	6,600	5,800	volts/mil
Dielectric Constant	–	–	3.3				–
Dissipation Factor	ASTM D-150	1MHz, 20°C(68°F)	0.005				–
Volume Resistance	ASTM D-150	1MHz, 20°C(68°F)	>10 ¹⁶				Ω-cm
Surface Resistance	ASTM D-257	500v, 20°C(68°F)	>10 ¹⁶				Ω
Coefficient of Thermal Expansion	ASTM D-696	200°C(392°F)	40 (22)				ppm/°C (ppm/°F)
Heat Shrinkage	ASTM D-5213-04	–	0.03	0.05	0.05	0.05	–
TG (Glass Transition)	DSC, TMA	–	>380 (>715)				°C (°F)
Electrical RTI	UL-746B	–	235 (455)				°C (°F)
Mechanical RTI	UL-746B	–	235 (455)				°C (°F)
Flammability	UL-94	–	V-0				–
Moisture Absorption	ASTM D-570	20°C(68°F)	2.5				%
Density	ASTM D-1505	20°C(68°F)	1.46				g/cm ²
Yield	–	20°C(68°F)	272	136	68	45	ft ² /lb
	–	20°C(68°F)	56	28	14	9	m ² /kg
Continuous Use Temperature	–	–	235				°C
	–	–	455				°F

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



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