Thermalbright® Polyimide

High performance white polyimide

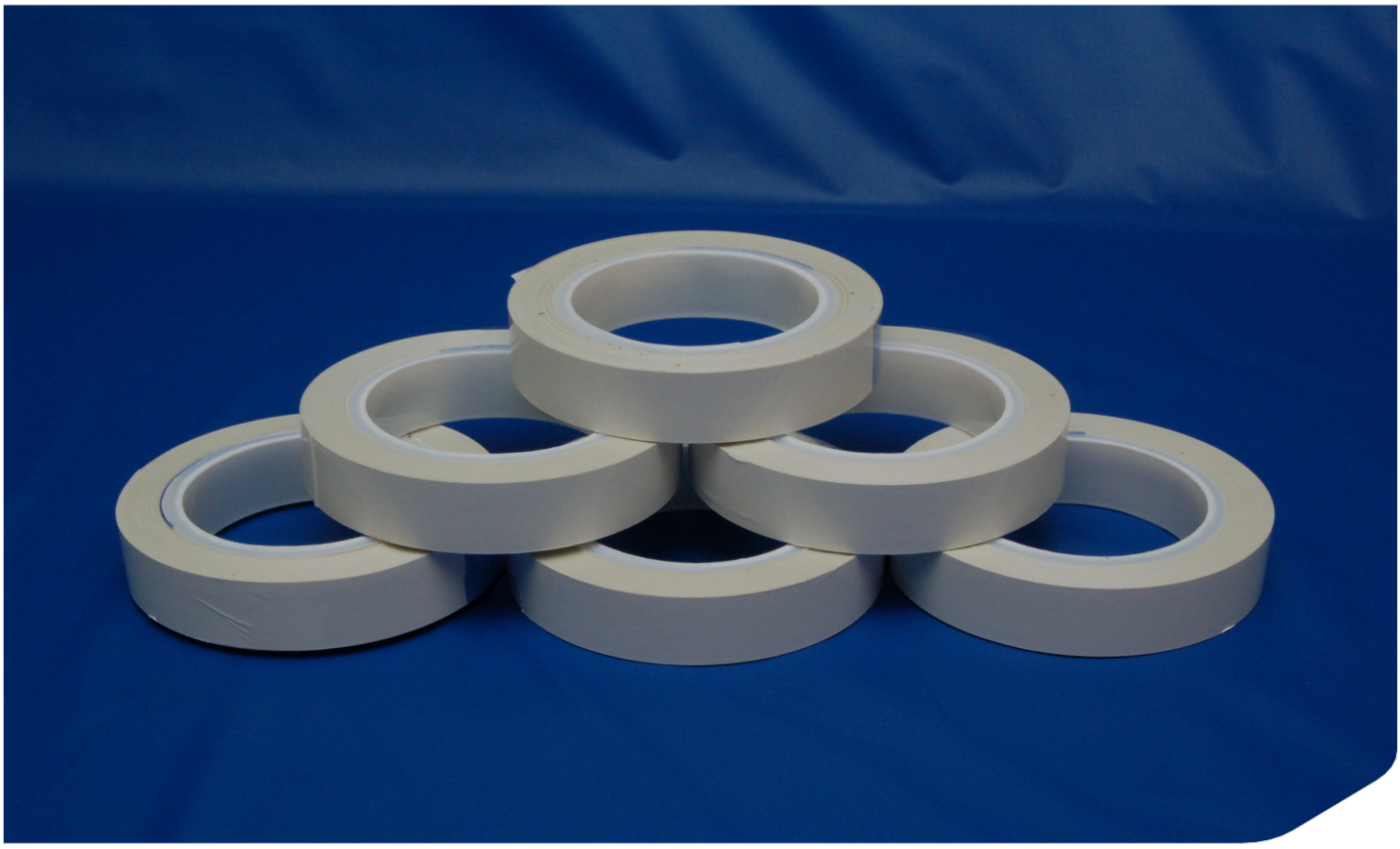
Thermalbright® Polyimide is a high-performance white polyimide designed for use in displays, electrical insulation, composites, industrial tapes, space structures, and more. It excels in thermal control applications requiring low absorptivity, high emissivity, UV stability, and colorfastness at elevated temperatures. With strong optical density and hiding power, it serves as an excellent high-temperature alternative to white paint. Thermalbright® is available in two grades: Thermalbright® C for ESD applications and Thermalbright® N for electrical insulation. Both are offered as liquid casting resin or film.

CHARACTERISTICS

- Bright white color
- High optical density
- High temperature color stability
- Printable surface
- Extremely low moisture uptake
- Low temperature cure
- Conductive/nonconductive grades
- Vacuum coating compatible

APPLICATIONS

- Paint replacement
- Electronics
- Displays
- Space structures
- Advanced composites
- Thermal control
- Insulation blankets
- Pressure sensitive tapes



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TYPICAL PROPERTIES OF THERMALBRIGHT®

PHYSICAL AND MECHANICAL PROPERTIES				
PROPERTY	**ASTM METHOD**	**THERMALBRIGHT® N**	**THERMALBRIGHT® C**	**UNITS**
Tensile Strength (1 mil; 23°C)	D882-02	58 (8.4)	79 (11.5)	MPa (ksi)
Young's Modulus (23°C)	D882-02	3.5 (513)	4.7 (684)	GPa (ksi)
Tensile Elongation at Break (1 mil; 23°C)	D882-02	2.0	1.9	%
Density	D792-08	2.08	1.95	g/cm^3
Water Absorption (24 hr immersion)	D570-98	0.2	0.4	%
Surface Resistivity	D257-91	$>10^{12}$	$<10^{12}$	Ohm/□
Volume Resistivity	D257-91	$>10^{9}$	$<10^{12}$	Ohm*cm
OPTICAL PROPERTIES				
Solar Absorptance (1 mil)	E903-96 [1]	0.11	0.29	-
Solar Transmittance (1 mil)	E903-96 [1]	0.18	0.12	-
Solar Reflectance (1 mil)	E903-96 [1]	0.71	0.59	-
Infrared Emissivity (hemispherical) (1 mil)	E408-71	0.64	0.77	-
L*a*b (1 mil) (C/2°)	E1164-09a	94.2/-2.6/1.2a	92.0/-2.8/1.1	-
[1] Data weighted to air mass zero solar irradiance values in ASTM E490-00a				
THERMAL PROPERTIES				
Glass Transition Temperature (DSC)	E1356-03	263 (505)	263	°C (°F)
Linear CTE (1 mil; -130°C - 110°C)	E831-06	40 (22)	27 (15)	ppm/°C (ppm/°F)

MATERIAL AVAILABILITY

- Thermalbright® Polymide is available as a liquid resin or film
- 12.5 – 25 micron film thicknesses; other thicknesses available upon request
- Continuous rolls of film up to 60 inches wide
- Thermalbright® Polyimide film can be supplied with many different metal and dielectric coatings
- Material is available as tape with choice of pressure sensitive adhesive chemistries
- Thermalbright® Polyimide is a highly customizable material. Contact us with your specific needs today

Warranty The information contained herein is believed to be accurate and reliable. However, the user is responsible for determining the suitability and use of the final formulations/products. NeXolve warrants that its products will meet specifications, but not merchantability or fitness for use.