

TR-Clad™ Metal Foil Clad Polyimide

Light weight copper clad polyimide



TR-Clad™ Flexible Laminates are ultra-light, low-dielectric copper/polyimide laminates made by directly coating CP1™ Polyimide onto metal foils with no adhesive needed. Available with polyimide layers down to 2 microns and copper or aluminum foils as thin as 9 and 4 microns, respectively. Enables finer circuit features and reduced cross talk. Also offered with conductive polyimide for ESD-level applications. Customizable to your specs.

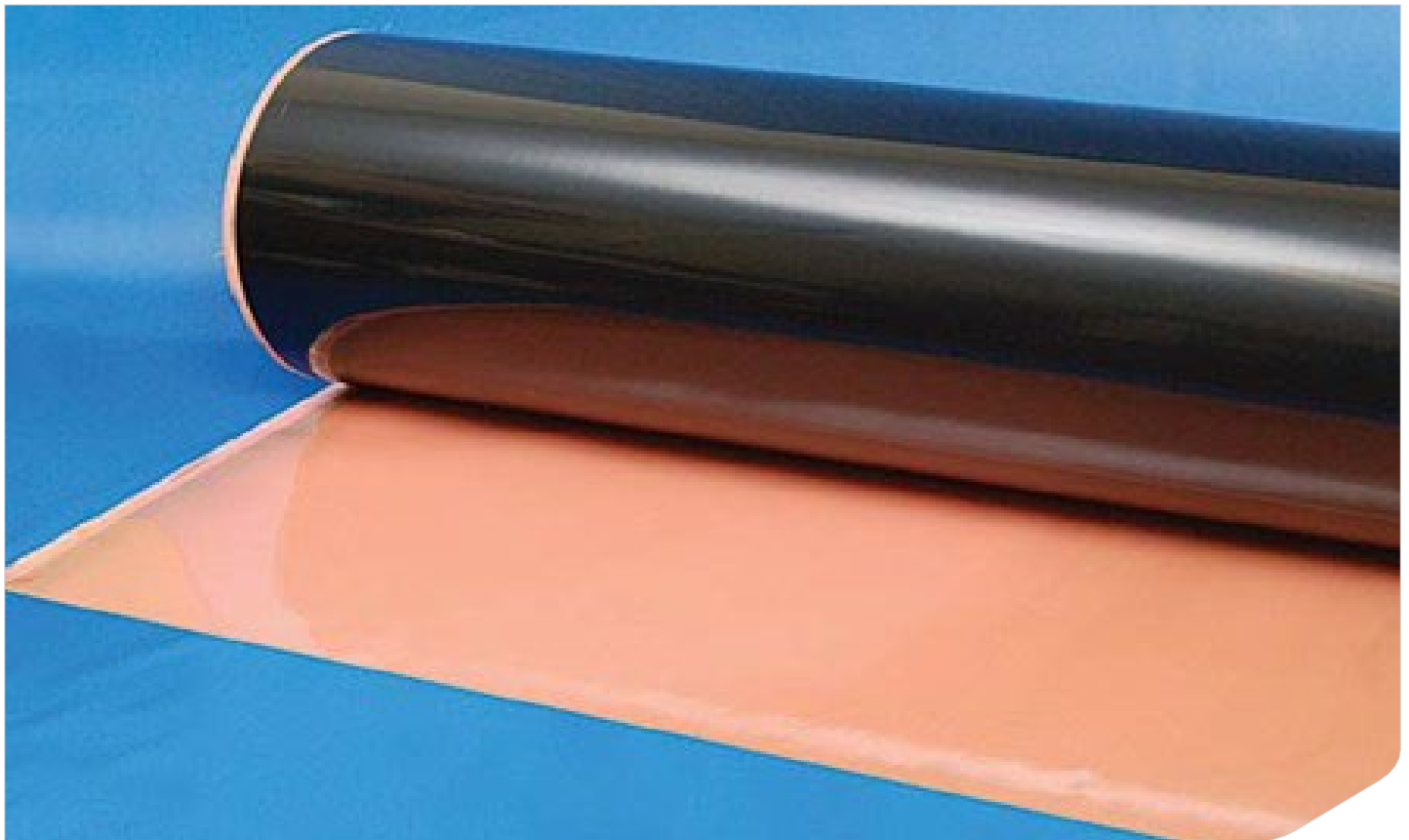
CHARACTERISTICS

- Low thickness and weight
- Low dielectric constant polyimide
- Low moisture uptake
- High heat stability
- Etchable copper



APPLICATIONS

- Antennas
- Flex circuits
- Advanced composites



TYPICAL PROPERTIES OF TR-CLAD™

PHYSICAL AND MECHANICAL PROPERTIES			
PROPERTY	ASTM METHOD	VALUE	UNITS
Tensile Strength (12 μm CP1/9, μm copper foil, 23°C)	D882-02	136 (19.7)	MPa (ksi)
Young's Modulus (12 μm CP1/9, μm copper foil, 23°C)	D882-02	108 (1566)	GPa (ksi)
Tensile Elongation at Break (12 μm CP1/9, μm copper foil, 23°C)	D882-02	1.5	%
OPTICAL PROPERTIES			
Solar Absorptance (12 μm CP1/9, μm copper foil)	E903-96 ¹	0.67	-
Solar Absorptance (ESD Grade, 12 μm CP1/9, μm copper foil)	E903-96 ¹	0.95	-
¹ Data weighted to air mass zero solar irradiance values in ASTM E490-00a			
THERMAL PROPERTIES			
Linear CTE (-80°C — +225°C, μm CP1/9, μm copper foil)	E831-06	20	ppm/°C
Linear CTE (-80°C — +225°C, ESD Grade μm CP1/9, μm copper foil)	E831-06	24	ppm/°C
MATERIAL AVAILABILITY			

- Material available in continuous rolls of film up to 50 inches wide
- 9-70 micron copper foil thickness available
- 4-100 micron aluminum foil thicknesses available
- 4-15 micron polyimide thickness available. Other thickness available upon request
- TR-Clad™ is available with nonconductive or ESD conductive polyimide available
- TR-Clad™ can be delivered on removable protective liner for easier handling
- TR-Clad™ 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.