

## CP1™ Polyimide

*Transparent polyimide with low moisture uptake and low dielectric constant*

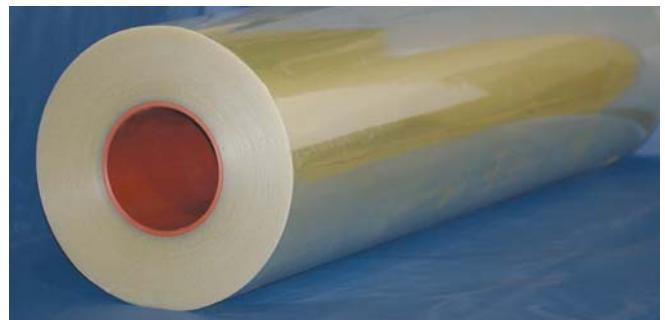
CP1™ Polyimide exhibits the lowest moisture uptake, lowest dielectric constant, and lowest color of all commercially available polyimides, making it an ideal choice for electronics, displays, and aerospace applications. Additionally, continuous rolls are available now in thicknesses as low as 2.5 microns (0.1 mil) and in widths up to 60 inches (152 cm).

### Characteristics

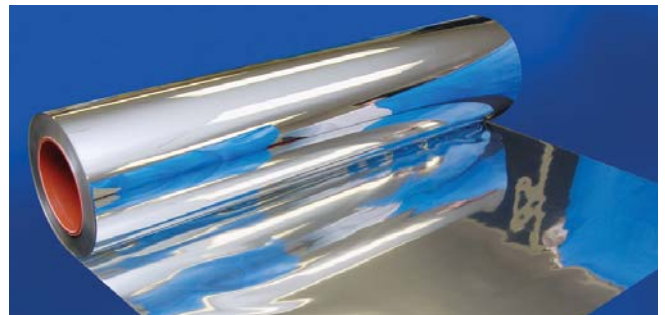
- Highly transparent
- Low dielectric constant
- Low moisture uptake
- UV resistant
- 10 year rated life in GEO
- Conductive/nonconductive offerings
- Vacuum coating compatible

### Applications

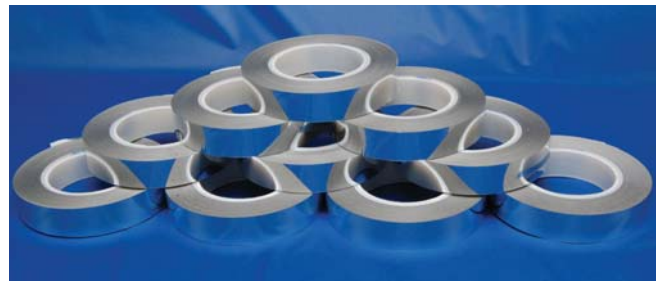
- Electronics
- Displays
- Composites
- Thermal control
- Optical filters/mirrors
- Electrical insulation
- Space structures
- Pressure sensitive tape
- Insulation blankets
- Insulation tubing



*Clear CP1™ Polyimide*



*CP1™ Polyimide with VDA coating*



*CP1™ Polyimide pressure sensitive tape with VDA coating*



## Typical Properties of CP1™ Polyimide

Physical and Mechanical Properties	ASTM Method	Value	Units
Tensile Strength (1 mil; 23°C)	D882-02	87 (13)	MPa (ksi)
Young's Modulus (23°C)	D882-02	2 (290)	GPa (ksi)
Tensile Elongation at break (1 mil; 23°C)	D882-02	16	%
Density	D792-08	1.54	g/cm <sup>3</sup>
Water Absorption (24 hr immersion)	D570-98	0.4	%

Electrical Properties	ASTM Method	Value	Units
Dielectric constant (10 GHz)	-	2.4-2.5	-
Dielectric Strength	D149-09	5000	V/mil
Surface Resistivity	D257-91	> 10 <sup>12</sup>	Ohm/□
Volume Resistivity	D257-91	> 10 <sup>9</sup>	Ohm*cm

Optical Properties	ASTM Method	Value	Units
Solar Absorptance (1 mil)	E903-96 <sup>(1)</sup>	0.08	-
Solar Transmittance (1 mil)	E903-96 <sup>(1)</sup>	0.83	-
Solar Reflectance (1 mil)	E903-96 <sup>(1)</sup>	0.09	-
50% Transmission UV Cutoff (1 mil)	-	409	nm
Refractive Index (Abbe, 549 nm)	D542-00	1.57	-
Haze (1 mil)	D1003-11	0.6	%
Average percent transmission 400-780 nm (1 mil)	-	88	%
Infrared Emissivity (hemispherical) (1 mil)	E408-71	0.45	-

<sup>(1)</sup> Data weighted to air mass zero solar irradiance values in ASTM E490-00a

Thermal Properties	ASTM Method	Value	Units
Glass Transition Temperature (DSC)	E1356-03	263(505)	°C(°F)
Linear CTE (1 mil; 125°C—175°C)	E831-06	51 (28)	ppm/°C (ppm/°F)

### Material Availability

- 2.5, 5, 12, 25 micron thicknesses. Other thicknesses available upon request
- Metal coatings: VDA or Silver. More complex coatings available upon request
- Continuous rolls of film up to 60 inches wide
- Dielectric coatings: SiO<sub>x</sub>, SiO<sub>2</sub>, Ta<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>. More complex coatings available upon request
- Conductive or non conductive grades available
- Material is available as tape with choice of pressure sensitive adhesive chemistries
- CP1™ Polyimide is a highly customizable material. Contact us with your specific needs today

### About NeXolve Corporation

NeXolve Corporation manufactures high-performance polymer materials for aerospace, electronics and display applications. These materials include colorless polyimides, continuous rolls of ultralightweight polyimides, low/zero CTE polyimides, photosensitive polyimides and other high-performance products.

### 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 Corporation and its parent company ManTech International Corporation warrants that its products will meet specifications, but not merchantability or fitness for use.

#### For more information contact

#### NeXolve Corporation

655 Discovery Drive, Building 3, Suite 200  
Huntsville, Alabama 35806  
Phone: 256-971-7000

[www.NexolveMaterials.com](http://www.NexolveMaterials.com)

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