



CP1TM Polyimide

Colorless, transparent polyimide with low moisture uptake and low dielectric constant

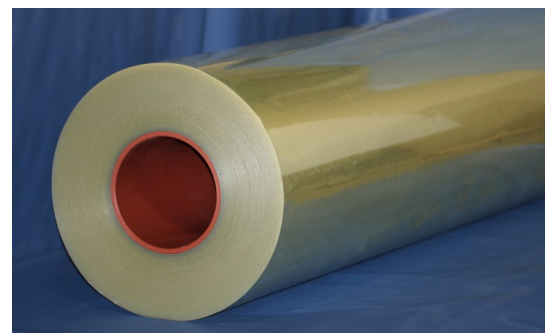
CP1TM Polyimide exhibits the lowest moisture uptake, lowest dielectric constant, and lowest color of all commercially available polyimides, making it an ideal choice for electronics, displays, and aerospace applications. Material is available as a raw powder, liquid resin or in continuous rolls in thicknesses as low as 2.5 microns (0.1 mil) and in widths up to 60 inches (152 cm).

Characteristics

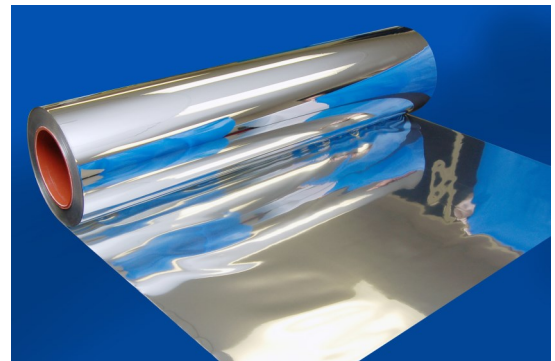
- Colorless
- Highly transparent
- Low dielectric constant
- Low moisture uptake
- UV resistant
- 10 year rated life in GEO
- Conductive/nonconductive offerings
- Vacuum coating compatible

Applications

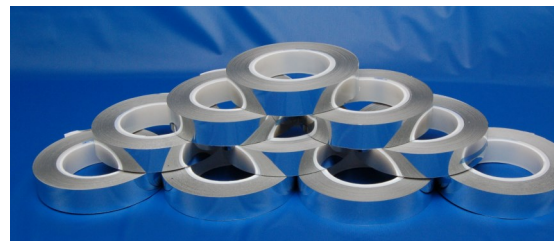
- Space structures
- Electronics
- Thermal control
- Electrical insulation
- Composites
- Displays
- Pressure sensitive tapes
- Optical filters/mirrors



Clear CP1TM Polyimide



CP1TM Polyimide with VDA coating



CP1TM Polyimide pressure sensitive tape with VDA coating

Typical Properties of CP1™ Polyimide

Physical and Mechanical Properties

| Property | 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 ³ |
| Water Absorption (24 hr immersion) | D570-98 | 0.4 | % |
| Dielectric constant (10 GHz) | - | 2.4-2.5 | - |
| Dielectric Strength | D149-09 | 5000 | V/mil |
| Surface Resistivity | D257-91 | > 10 ¹² | Ohm/□ |
| Volume Resistivity | D257-91 | > 10 ⁹ | Ohm*cm |

Optical Properties

| | | | |
|--|----------------------|------|----|
| Solar Absorptance (1 mil) | E903-96 ¹ | 0.08 | - |
| Solar Transmittance (1 mil) | E903-96 ¹ | 0.83 | - |
| Solar Reflectance (1 mil) | E903-96 ¹ | 0.09 | - |
| Average % transmission 400-780 nm (1 mil) | - | 88 | % |
| 50% Transmission UV Cutoff (1 mil) | - | 409 | nm |
| Haze (1 mil) | D1003-11 | 0.6 | % |
| Refractive Index (Abbe, 549 nm) | D542-00 | 1.57 | - |
| Infrared Emissivity (hemispherical, 1 mil) | E408-13 | 0.45 | - |

¹ Data weighted to air mass zero solar irradiance values in ASTM E490-00a

Thermal Properties

| | | | |
|---------------------------------|----------|-----------|-----------------|
| Glass Transition Temp. (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

- CP1™ Polyimide is available as a raw powder, liquid resin, or film
- 2.5—25 micron film thicknesses available. Other thicknesses available upon request
- Continuous rolls of film up to 60 inches wide
- CP1™ Polyimide film can be supplied with many different metal and dielectric coatings
- 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

For more information contact:

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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.

