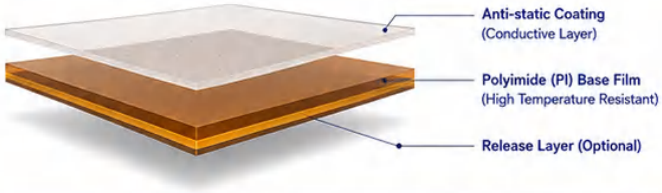
ANTI-STATIC ESD PI FILM

ENGINEERING SPECIFICATIONS

Anti-static ESD PI Film is a high-performance polyimide film coated with a uniform anti-static (conductive) layer on one or both sides. It provides stable surface resistance to prevent electrostatic accumulation and discharge, while maintaining excellent electrical insulation, high temperature resistance and mechanical strength.

1. STRUCTURE DIAGRAM



2. MATERIAL SPECIFICATIONS

PROPERTY	UNIT	TEST METHOD	TYPICAL VALUE
Base Material	—	—	Polyimide (PI)
Color	—	Visual	Amber (Transparent)
Total Thickness	μm	ASTM D374	25 / 50 / 75 / 100 / 125
PI Film Thickness	μm	ASTM D374	12.5 / 25 / 50 / 75 / 100
Anti-static Coating Thickness	μm	ASTM D374	0.2 ~ 2.0
Surface Resistance (1 side)	Ω/sq	ANSI/ESD STM11.11	10^6 ~ 10^9 (Customizable)
Surface Resistance (2 sides)	Ω/sq	ANSI/ESD STM11.11	10^6 ~ 10^9 (Customizable)
Volume Resistivity	Ω·cm	ASTM D257	≥ 10^{13}
Dielectric Strength	kV/μm	ASTM D149	≥ 180
Tensile Strength	MPa	ASTM D882	≥ 220
Elongation at Break	%	ASTM D882	≥ 40
Dimensional Stability	%	150°C / 30min	≤ 0.3
Continuous Use Temp.	°C	—	-269 ~ 260
Short-term Use Temp.	°C	—	Up to 300
Flammability	—	UL94	V-0
Moisture Absorption	%	ASTM D570	≤ 1.5
Chemical Resistance	—	—	Excellent
Cleanliness (Particles)	pcs/m²	IEST-RP-CC004	≤ 1000

3. SURFACE RESISTANCE RANGE (TYPICAL)

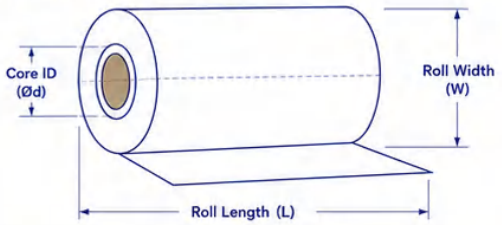
GRADE	SURFACE RESISTANCE (Ω/sq)	APPLICATION
Conductive Grade	10^3 ~ 10^6	Static eliminating, conductive protection
Anti-static Grade	10^6 ~ 10^9	General ESD protection
Static Dissipative Grade	10^9 ~ 10^{11}	High resistance ESD protection
Custom Range	10^3 ~ 10^{11}	Available upon request

4. STANDARD SIZES

ROLL WIDTH (W)		ROLL LENGTH (L)	
Width (mm)	Width (inch)	Length (m)	Length (ft)
100	3.94	33	108
300	11.81	50	164
500	19.69	100	328
1000	39.37	200	656
1200	47.24	300	984
Custom	Custom	Custom	Custom

Note: Other thickness, width and length can be customized according to requirements.

5. DIMENSIONAL DRAWING (Roll Form)



6. COATING OPTIONS

COATING TYPE	DESCRIPTION
Single-sided Coating	Anti-static layer on one side
Double-sided Coating	Anti-static layer on both sides
Coating Color	Transparent / Slight Blue
Coating Method	PVD / Carbon / Conductive Polymer
Custom Coating Thickness	Available

7. PERFORMANCE ADVANTAGES

- **Stable ESD Protection**
  Prevent electrostatic accumulation and discharge.
- **High Temperature Resistance**
  Continuous use up to 260°C, short-term up to 300°C.
- **Excellent Electrical Insulation**
  High dielectric strength and volume resistivity.
- **Chemical & Solvent Resistance**
  Resistant to most chemicals and solvents.
- **High Mechanical Strength**
  Outstanding tensile strength and dimensional stability.

8. TYPICAL APPLICATIONS

SEMICONDUCTOR MANUFACTURING | PCB / FPC PRODUCTION | ESD TRAYS & CARRIERS | ELECTRONIC COMPONENT PROTECTION | CLEANROOM WORK SURFACE & EQUIPMENT PROTECTION