

ONE STOP SERVICES FOR CLEANROOM & ESD CONTROL



FABRICS &
GARMENTS



GLOVES



MATS & TILES



ESD PRODUCTS

& CLEANROOM

Products and Solutions
Based on the 5 S Ideology

CONTENTS



Fabrics & Garments
4-6



Footwear
7-10



Mats & Tiles
11-21



Clean Products
22-28



Stationery
29-36



Wipers
37-38



Packaging Bags & Film
39-43



Walls & Partitions
44-52



Tapes
53-60



Equipment & Tools
61-67



Handling & Storages
68-73



Groundings
74-75



Disposable
76

1

ANTISTATIC ESD COTTON POLYESTER COVERALL

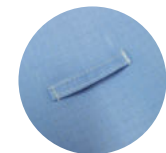


Ideal for the electronic, automotive, aerospace, food, pharmaceutical and medical industries.

Intended to reduce the build-up of static electricity by dissipating it from the body to the floor while maintaining a high enough resistance to offer the wearer limited protection against the potential risk of electrical shock.

Technical Specifications

Composition:	66% cotton, 32% polyester, and 2% carbon fiber.
Knitting:	flat taffeta, checkered dissipative mesh.
Resistance:	10^6 a 10^9 MΩ OHMS.
Construction with conductive thread or carbon thread.	
Neck:	Sport.
Length:	Short (Up to the pockets of the pants)
Bags:	3 to the front.
Adjustment:	Brooch.
Cuff adjustment:	Brooch.
Colors:	Black, White, Navy Blue, Royal Blue, Sky Blue, Grey, Orange, Green, Yellow, Khaki, Red, Pink
Sizes:	S - 5XL
Gender:	Unisex



Pen Holder



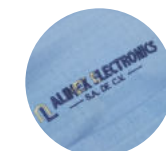
With 4 metal snap buttons and flap on the front



Wrist adjustment with metal press studs



3 Bags



Embroidered Logo

International Certificate: STM 2.1 -2018.
Meets the ANSI-2020 STANDARD

1 ANTISTATIC SCUBA

Composition: 98% Polyester and 2% Carbon Fiber.

Fabric: Twill, checkered dissipative mesh.

Resistance: 10^6 to 10^9 M Ω OHMS.

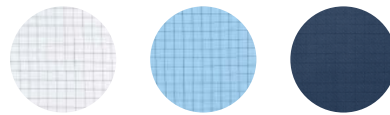
Manufacturing: Conductive string.

Cut: Long with side adjustment.

Sizes: Unisize.

Colors: Sky Blue, Marine Blue and White.

Complies with the standard ANSI-2020



ANTISTATIC CAP



Composition: 98% Polyester and 2% Carbon Fiber.

Fabric: Twill, checkered dissipative mesh and plastic visor.

Resistance: 10^5 M Ω OHMS.

Manufacturing: Conductive string.

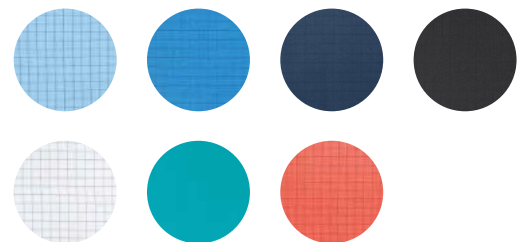
Cut: Round.

Adjustment: Velcro

Sizes: Unisize.

Colors: Sky Blue, Royal Blue, Marine Blue, White, Green, Orange and Black.

Gender: Unisex



1 ANTISTATIC CAP



Composition: 66% cotton, 32% polyester, y 2% carbon fiber.

Fabric: flat taffeta, checkered dissipative mesh.

Resistance: 10^6 a 10^9 MΩ OHMS.

Construction with conductive thread or carbon thread.

Round cut with external fit.

Colors: Black, white, marine blue, royal blue, sky blue, gray, orange, green, yellow, ivory, wine, pink.

Sizes: Unitalla.

Gender: UNISEX.

Life Time: approx. 6 months

ANTISTATIC HEEL PADS

Thickness: 2.0 - 2.7mm

Elongation: 330%

Hardness: 73° +- 10% black side, 66° +- 10% white side

Abrasion: 300mm³ black side

Conductive Tape: $9.0 \times 10^3 \Omega$ +- 15%

Complete circuit resistance: $1 \times 10^6 \Omega$ +- 15%

Ankle Adjustment: Velcro

Conductive Tape Tab: Carbon impregnated multi-strand nylon on woven polyester.



TA01AZ



TA01NE

ANTISTATIC WRISTBAND

Presentation: 1 Piece

Wristband: Adjustable with 9mm rotary clip

Tissue: Fortec, alligator kit with landing

Conductivity: $1 \times 10^6 \Omega$ +- 1%, cord $9 \times 10^6 \Omega$ +- 10%

Complete circuit resistance: $1 \times 10^6 \Omega$ +- 15%

Internal Surface: Conductive in 5/8" with a better contact area



P-1000



P-3000

2 ESD ANTISTATIC SHOE COVERS



Specifications:

Thickness 2.0 – 2.7mm

Elongation: 330%

Tension: 44. Kg/cm²

Hardness: 73o ±10% Dark Side, 66o ±10% Light Side.

Abrasion: 300 mm³ use on the dark side.

Breaking strength: 26.4Kg/cm²

Electrical Characteristics:

Decay Time: Less than 0.02 sec.

Conductivity: Dark side 50 X 10 e3 Ω ± 25%.

Resistance: 1.00X10e3 ± 10%

Conductive Tape: 9.0x10e3 Ω ± 10%.

Total resistivity of the grounded circuit: 1x10e6 Ω ± 15%

TALLA MEDIDA DE ZAPATO

S (Chica) 22cm – 23cm

M (Mediano) 24cm-26cm

L (Grande) 26cm-28cm

XL (Extra grande) 29cm-30cm

ANTISTATIC FOOTWEAR

Material: White or black nappa leather with gray oxford lining.

Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.

Sole: Mateo gray antistatic.

Construction and adjustment: Attached with velcro.

Last: 600.

Numeration: 22 to 30.

Certificate: NOM 113 - STPS - 2009.

Protective footwear: Type I and Type VII

Valor 1 mΩ a 25 mΩ



2

ANTISTATIC FOOTWEAR

Material: White or black nappa leather with gray oxford lining.

Protection: Polyamide.

Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.

Sole: Mateo gray antistatic.

Construction and adjustment: Attached with velcro.

Last: 600.

Numeration: 22 to 30.

Certificate: NOM 113 - STPS - 2009.

Protective footwear: Type I and Type VII



ANTISTATIC FOOTWEAR

Material: White or black nappa leather with gray oxford lining.

Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.

Sole: Mateo gray antistatic.

Construction and adjustment: Attached with velcro.

Last: 600.

Numeration: 22 to 30.

Certificate: NOM 113 - STPS - 2009.

Protective footwear: Type I and Type VII



ANTISTATIC FOOTWEAR

Material: White or black nappa leather with gray oxford lining.

Protection: Polyamide.

Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.

Sole: Mateo gray antistatic.

Construction and adjustment: Attached with velcro.

Last: 600.

Numeration: 22 to 30.

Certificate: NOM 113 - STPS - 2009.

Protective footwear: Type I and Type VII



2 ANTISTATIC FOOTWEAR

Material: White or black nappa leather with gray oxford lining.
Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.
Sole: Mateo gray antistatic.
Construction and adjustment: Attached with velcro.
Last: 600.
Numeration: 22 to 30.
Certificate: NOM 113 - STPS - 2009.
Protective footwear: Type I and Type VII

Valor 1 mΩ a 25 mΩ



ANTISTATIC FOOTWEAR

Material: White or black nappa leather with gray oxford lining.
Protection: Polyamide.
Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.
Sole: Mateo gray antistatic.
Construction and adjustment: Attached with velcro.
Last: 600.
Numeration: 22 to 30.
Certificate: NOM 113 - STPS - 2009.
Protective footwear: Type I and Type VII

Valor 1 mΩ a 25 mΩ



ANTISTATIC SANDAL

Material: White or black nappa leather with gray oxford lining.
Template: Celtec lined, anti-fatigue and conductive thread.
Sole: Cheyen gray antistatic.
Construction and adjustment: Glued.
Last: 500.
Numeration: 22 to 30.
Certificate: NOM 113 - STPS - 2009.
Protective footwear: Type I and Type VII

Valor 1 mΩ a 25 mΩ



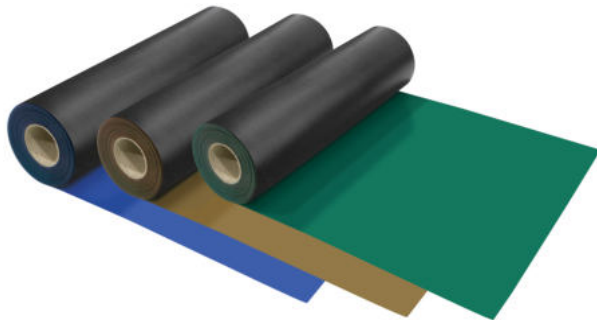
2 ANTISTATIC BOOT

Material: White or black nappa leather with gray oxford lining.
Protection: Polyamide.
Template: 5mm thick polyurethane, anti-fatigue and conductive thread and conductive sole.
Sole: Mateo gray antistatic.
Construction and adjustment: Glued with shoelaces.
Last: 600.
Numeration: 22 to 30.
Certificate: NOM 113 - STPS - 2009.
Protective footwear: Type I and Type VII

Valor 1 m0.a 25 m0.



3 ESD CONTROL TABLE MAT



Available Worksurface Colors:

Green/Black; Blue/Black;
Sky Blue/ Black; Gray/Black

Features:

The mat is resistant to most chemicals and solvents. It is heat-resistant to soldering iron temperature, solder fluxes, and solder flux splatters.

Item	Unit		Value	Method
Tensile Strength	Width	Kg/cm ²	105	KS M 6518-91
	Length		114	
Elongation	Width	%	380	
	Length		370	
Harness	Length	HS	64	
Tear Strength (B)	Width	Kg/cm	31	
	Length		37	
Temp. Resistance		°C	Max. 130	
Surface Resistivity (RTT)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁵	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁹	
Volume Resistivity (RTG)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁵	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁹	
Static Decay 5,000V 500V		Second	<0.01	FTS 101 C

Material	Conductive Rubber, Static Dissipative Rubber
Thickness	2 & 3 mm
Width	120 cm
Length	10m / Roll
Color (Upper)	Green, Gray Blue, Sky Blue
Tester	*ETS 406C Static Decay meter. *3M Model 701 Test Kit for Static Control Surfaces

Part Number	Description
M11-M-007- Blue	ESD Control Table Mat, Blue: 10m x 1.2m x 2mm Thickness
M11-M-007- Gray	ESD Control Table Mat, Gray: 10m x 1.2m x 2mm Thickness
M11-M-007- Green	ESD Control Table Mat, Green: 10m x 1.2m x 2mm Thickness

3 ESD BLACK TABLE MAT



Other Information

The mat is resistant to most chemicals such as solvents, it is heat - resistant to soldering iron temperature, solder fluxes, and solder flux splatters. This non-curling mat is the most economic solution for a static-safe work area.

Item	Unit		Value	Method
Tensile Strength	Width	Kg/cm ²	105	KS M 6518-91
	Length		114	
Elongation	Width	%	380	
	Length		370	
Hardness	Length	HS	64	
Tear Strength (B)	Width	Kg/cm	31	
	Length		37	
Temp. Resistance		°C	Max. 130	
Surface Resistivity (RTT)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁴	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁸	
Volume Resistivity (RTG)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁴	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁸	
Static Decay 5,000V 500V		Second	<0.01	FTS 101 C

Material	Conductive Rubber, Static Dissipative Rubber
Thickness	2 mm
Width	120 cm
Length	10m / Roll
Color (Upper)	Black
Tester	*ETS 406C Static Decay Meter *3M Model 701 Test Kit for Static Control Surfaces

Part Number	Description
M11-M-007	ESD Control Table Mat, Black: 10m x 1.2m x 2mm Thickness

3 ESD ANTIFATIGUE MAT



Part Number: M30-M-012
ESD Antifatigue Floor Mat, Roll 10m x 1m

Specifications			
Description	Unit	Value	Method
Tensile Strength	Mpa (psi)	7.4 (1067.9)	ASTM D 412-1998 A Method
Elongation	%	225.3	
Tear Strength (B)	kN/m (bf/inch)	27.00 (154.1)	ASTM D 624-2000
Hardness	HAD	64	ASTM D 2240-2003
Resistivity (RTT)	Ω	$10^7 \sim 10^8$	ASTM D 257-1999
Resistivity (RTG)	Ω	$10^7 \sim 10^8$	ASTM D 257-1999

Size and Packing Information				
Size	Thickness	$8 \pm 5\%$	mm	Embossed Surface
	Width	100	cm	
	Roll	10	m	
Color	Gray or Brown		-	
Material	Foamed PVC + ESD Agent		-	

3 ESD SILICON MAT



Item	Unit		Value	Method
Tensile Strength	Width	Kg/cm ²	105	KS M 6518-91
	Length		114	
Elongation	Width	%	380	
	Length		370	
Hardness	Length	HS	64	
Tear Strength (B)	Width	Kg/cm	31	
	Length		37	
Temp. Resistance		°C	Max. 130	
Surface Resistivity (RTT)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁴	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁸	
Volume Resistivity (RTG)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁴	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁸	
Static Decay 5,000V 500V		Second	<0.01	FTS 101 C

Material	Silicon
Thickness	2.3 mm
Width	300 mm
Length	420 mm
Color (Upper)	Black
Tester	*ETS 406C Static Decay meter. *3M Model 701 Test Kit for Static Control Surfaces

Part Number	Description
M36-M-001	ESD Silicon Mat, 2.3mm x 300mm x 420mm

3 ESD SILICON PIN MAT



Item	Unit		Value	Method
Tensile Strength	Width	Kg/cm ²	105	KS M 6518-91
	Length		114	
Elongation	Width	%	380	
	Length		370	
Hardness	Length	HS	64	
Tear Strength (B)	Width	Kg/cm	31	
	Length		37	
Temp. Resistance		°C	Max. 130	
Surface Resistivity (RTT)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁴	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁸	
Volume Resistivity (RTG)	Black (Under)	Ω/sqmt	10e ³ ~ 10e ⁴	ASTMD257
	Color (Upper)		10e ⁷ ~ 10e ⁸	
Static Decay 5,000V 500V		Second	<0.01	FTS 101 C

Material	Silicon
Thickness	11 mm
Width	300 mm
Length	400 mm
Color (Upper)	Black
Tester	*ETS 406C Static Decay meter. *3M Model 701 Test Kit for Static Control Surfaces

Part Number	Description
M34-M-002	ESD Silicon Pin Mat, 11mm x 300mm x 400mm

3 ESD MICROFIBER MAT

• ESD Microfiber EVA Mat



M23-M-001



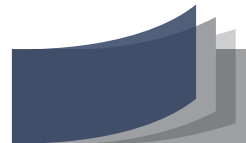
- ESD Microfiber fabric(4mm stripe)
- Conductive EVA foam

Thickness: 2.5mm
 Size: 0.96m x 9.5m
 SR: top-10e6 +/- 1 ohm, bottom - 10e5 +/- 1 ohm
 Color: Dark Navy Blue
 Packing: 4rolls/carton, 27.20kgs/carton
 (ctn size: 360mm x 360mm x 1118mm)

• ESD Microfiber EVA Mat with Adhesive



M23-M-002



- ESD Microfiber fabric(4mm stripe)
- Conductive EVA foam
- Acrylic adhesive
- Releasing paper

Thickness: 2.7mm
 Size: 0.96m x 9.5m
 SR: top-10e6 +/- 1 ohm, bottom - 10e5 +/- 1 ohm
 Color: Dark Navy Blue
 Packing: 4rolls/carton, 37.20kgs/carton
 (ctn size: 400mm x 400mm x 1118mm)

Application

- Tabletop of assembly lines for sensitive electronic parts.

Frictional coefficient

- 0.754 (KS M ISO 8295: 2006) - Statical friction
- 0.684 (KS M ISO 8295: 2006) - Dynamic friction

Hardness : 41 (KS M 6518: 2006, Type A)

Features

- Smooth, soft and anti-scratch surface
- Cushion for easy grip
- Good ESD properties
- Light weight
- Easy installation with bottom adhesive treatment (M23-M-002)



• ESD Microfiber Mat with Adhesive



M23-M-003



- ESD Microfiber fabric(4mm stripe)
- Conductive Non-woven fabric
- Acrylic adhesive
- Releasing paper

Thickness: 0.9mm
 Size: 0.7m x 10m
 SR: top-10e6 +/- 1 ohm, bottom - 10e5 +/- 1 ohm
 Color: Dark Navy Blue
 Packing: 4rolls/carton, 18.3kgs/carton
 (ctn size: 317mm x 317mm x 715mm)

• ESD Microfiber Fabric with Adhesive



M32-M-000



- ESD Microfiber fabric(4mm stripe)
- Acrylic adhesive
- Releasing paper

Thickness: 0.7mm
 Size: 1.37m x 23~37m
 SR: top-10e6 +/- 1 ohm, bottom - 10e5 +/- 1 ohm
 Color: Dark Navy Blue
 Packing: 4rolls/carton, 18.3kgs/carton
 (ctn size: 317mm x 317mm x 1620mm)

3 MATS & TILES

• ESD Microfiber EVA Pad



M26-M-001 (320mm x 240mm)
M26-M-002 (220mm x 170mm)



- ESD Microfiber EVA Mat
- Foam board(5T)
- ESD Microfiber EVA Mat

Application

- Mini worktable for assembling small devices, which are sensitive for ESD.

Features

- Soft and smooth surfaces
- Anti-scratch and ESD safe surface
- Use both top and bottom surfaces
- Custom size available

Thickness: 10mm

Size: 320mm x 240mm / 220mm x 170mm

Material: ESD Microfiber EVA Mat on top and bottom,
Foam Board(5T), ESD Microfiber Tape

SR: 10e6 +/- 1 ohm

Color: Dark Navy Blue

Frictional coefficient

- 0.754 (KS M ISO 8295: 2006) - Statical friction
- 0.684 (KS M ISO 8295: 2006) - Dynamic friction

Hardness : 41 (KS M 6518: 2006, Type A)

• ESD Microfiber mat



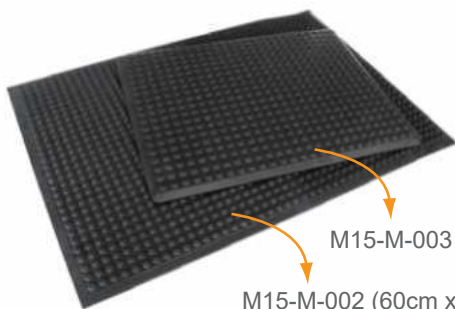
M23-M-005

Size: 1.4mm x 300mm x 400mm

SR: 10e6-10e7 ohm (top) / 10e4~10e5 ohm (bottom)

Material: Microfiber fabric + conductive rubber

Type A

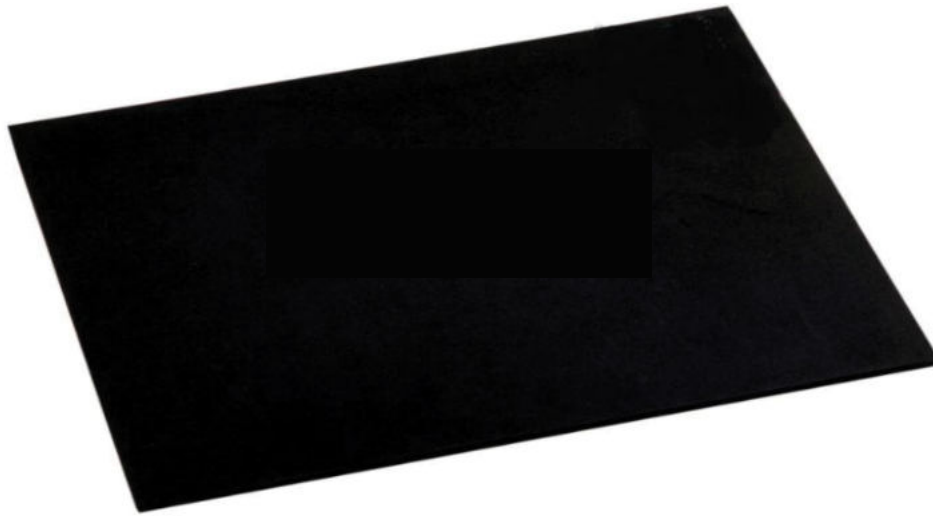


M15-M-003 (45cm x 60cm)

M15-M-002 (60cm x 90cm)

Material	Color	Weight/mat	Thickness	Size/mat	Electrical S/Resistance
Conductive NBR + High Elastic PU Foam	Black	3.4kgs	16mm	60cm x 90cm	10e5 ~ 10e6
		2.1kgs		45cm x 60cm	

3 ESD EVA MAT



Description: ESD EVA Mat with Adhesive, surface Resistivity $10^6 \sim 10^8$ ohm

Color: Black

Technical Specifications		
Item	Unit	Value
Density	kg/cm ³	0.0305
Tensile Strength	kg/cm ²	3.4
Elongation to Break	%	208
Tear Strength	kg/cm	2.1
Shrinkage	%	-1.7
Compression Strength	kg/cm ²	0.39
Available Thickness	mm	5mm; 10mm, 25mm
Surface Resistivity	Ω/SQ	$10e^6 - 10e^8$
Test Method		ASTM-D257

3 Mats & Tiles

• Conductive/Dissipative Tiles

Conductive & Static Dissipative Vinyl Flooring Tiles are the best solution for ESD protected floor, which will reduce static build up on people and materials. The Tiles are directly installed on the ground floor and they are also commonly used as the finishing material of Raised (Access) Floor System.

The electrical properties are permanent and they are not affected by ambient humidity. High contents of poly vinyl and high-pressure manufacturing process provide excellent indentation, wear and chemical resistances.



HK-1101



HK-1103



HK-1203



HK-1100



HK-1102



HK-1104



HK-1106



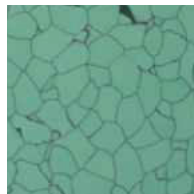
HK-1107



HK-1108




HK-1109



HK-2205



HK-2206

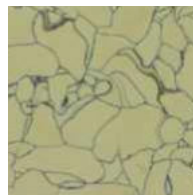


• Homogeneous Resilient Structure

Thickness: 2mm, 3mm
 Size: 600x600, 610x610, 900x900 in mm
 SR: 2.5x10e4~1 x 10e6 ohm (conductive)
 10e6~10e8 ohm (static dissipative)



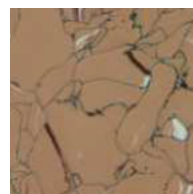
PLE-006



PLE-001



PLE-002



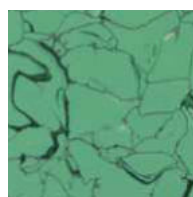
PLE-003



PLE-004



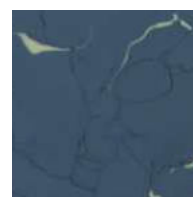
PLE-007



PLE-005



PLE-008



PLE-009



PLE-010

• Installation Accessories

Conductive Adhesive

- ① Carbon Fiber Type (M10-M-001)
- ② Carbon Powder Type (M10-M-002)
- ③ 2 Parts Epoxy (M10-M-003)
- ④ PU Epoxy (M10-M-004)

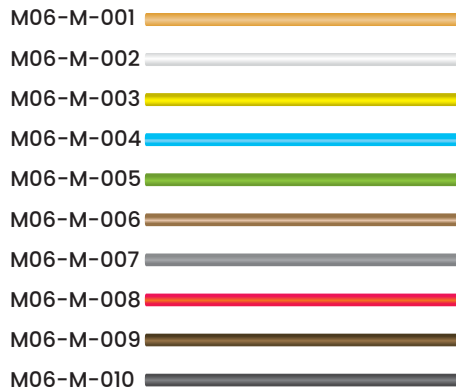
Copper Tape



M07-M-001

Size: 0.038mm(T) X 10mm (W)
Packing: 30m/roll

Welding Rod



Brief Installation Instructions

1. Preparation of Subfloor

1) Flatness

- Maximum variation of the subfloor allowable is 3.0mm in 3 meter square.

2) Humidity of concrete subfloor

- Under 5.0LBS per 1,000sqft in 24 hours by Calcium Chloride Moisture Test in accordance with ASTM E 1907/ASTM F 1869.
- Under 2.5% measured with CM Hygrometer(without floor heating)

3) PH Level

- Under 10

4) Smoothness and Surface

- Subfloor must be clean, dry and free from dust and dirt.
- Cracks and irregular surface must be patched and leveled, using a good grade of the floor finishing materials, like smoothing compound, etc.

5) Prior to installation, the flooring tiles should be acclimated for at least 48 hours.

6) Recommendable temperature will be at 20 °C.(At least from 18 °C to 30 °C) and constant temperature should be maintained during and after the installation for at least 48 hours.

2. Conductive Adhesive

Suitable adhesive should be consulted and selected by authorized personnel, who manage the job site conditions, from the following selections:

- Carbon Fiber Type: Water based fiber mixed Conductive acryl adhesive
- Carbon Powder Type: Water based carbon mixed Conductive acryl adhesive
- 2 Parts Epoxy: 2 component environment friendly conductive epoxy adhesive
- PU Epoxy: Solvent based Conductive Urethane Rubber Adhesive

The recommended quantity of adhesive is 0.25kg / sqmt.

3. Copper Tape

- Install the Copper Tape according to the interval standard of floor electric resistance requirements(ConductiveTile: 3m, Static Dissipative: 6~8m in cross section)
- Crossing points of Copper Tape lines should be punched in 3 mm diameter to secure the connection.
- Final grounding connection to the grounding points must be performed by authorized electrician or engineer.

4. Welding

- Seamless floor covering can be applied to prevent moisture troubles and to reduce dust and particles rising from the floors.
- Make the groove around 70~80% depth comparing to the original thickness of the tiles using electric grooving or hand grooving tools
- Trim off the excess parts of welding rod with the crescent -shape knife after the welding.

3 Mats & Tiles

• Composition Deluxe Tile



M20-M-002 (891)



M20-M-008 (890)



M20-M-001 (898)



M20-M-003 (886)



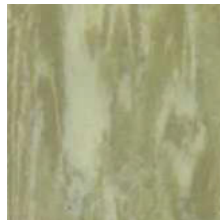
M20-M-004 (883)



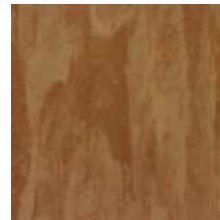
M20-M-005 (910)



M20-M-006 (895)



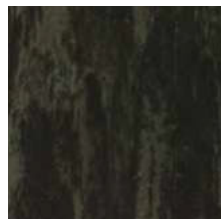
M20-M-007 (885)



M20-M-009 (887)



M20-M-011 (912)



M20-M-012 (897)



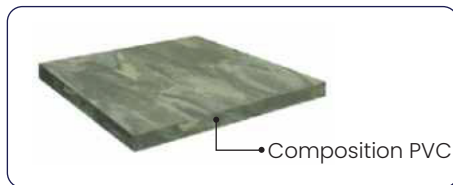
M20-M-013 (04)



M20-M-014 (07)



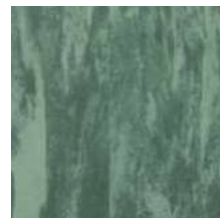
M20-M-015 (11)



Composition PVC



M20-M-016 (915)



M20-M-017 (916)



M20-M-018 (917)

* The color shade may vary slightly in each production LOT.

Features

- The most economical vinyl floor covering material
- Homogeneous structure provides constant color pattern to the bottom end
- Easy maintenance and high durability
- Excellent abrasion resistance
- Flame retardant

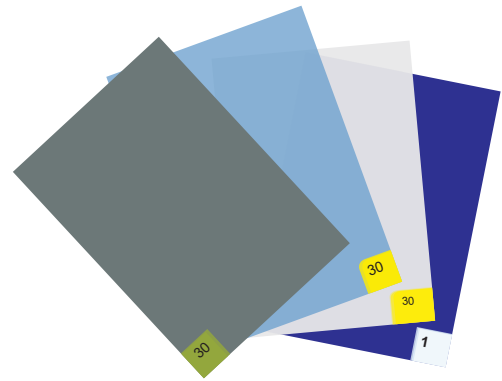
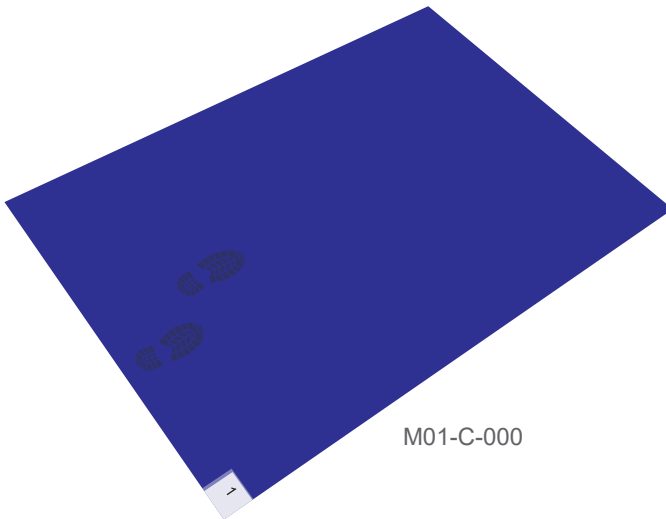
Main Applications

- Office Building (Hall, Lobby, Corridor, Lift, Office area, Stair, Warehouse, etc.)
- Hospital (Corridor, Office area, etc.)
- School (Hall, Lobby, Corridor, Lift, Class Room, Restaurant, etc.)
- Shopping mall (Hall, Lobby, Corridor, Lift, Warehouse, etc.)
- Hotel (Corridor, Lift, etc.)
- Apartment (Corridor, Entrance, etc.)

4 Clean Products

Clean Products consist of several types of products, such as Sticky Mat, Sticky Roller, Protection Film, DCR-Pad, Silicone Rubber Roller, Cleanroom Mop System, Swabs, etc. All these items are related with cleaning dust or particles and keeping sensitive parts, components and finished products clean by controlling all kinds of contaminations.

• Sticky Mat



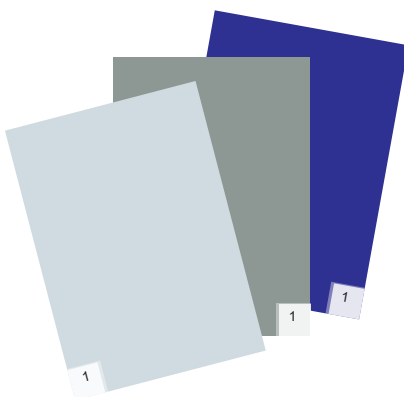
Size: 18" x 36", 18" x 45", 24" x 36", 26" x 45", etc.
Color: Blue, Grey, White, Light green, Clear
Packing: 30sheets or 60sheets/mat, 4mats, 8mats, 10mats/case, etc.

Features

- 99.80% of dust collection at several steps on the mats.
- Collected dust on the mats is not migrated.
- Comfortable walking and smooth passing of hand carts.
- Mat can be used with/without the frame.
- Adhesive level can be adjusted on request.
- Antimicrobial sticky mat is available for pharmaceutical, biological and medical areas.
- ESD sticky mat is available for static sensitive areas.
- Thin film sticky mat at economic price is another option.

Varieties

- SM-SSM - Sticky mat (Standard)
- SM-TNM - Thin film sticky mat
- SM-ABM - Antimicrobial sticky mat
- SM-EBM - ESD antimicrobial sticky mat
- SM-ESM - ESD sticky mat



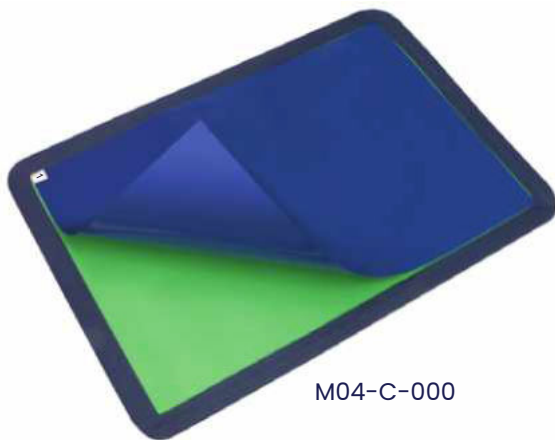
SM-SSM / SM-TNM / SM-ESM



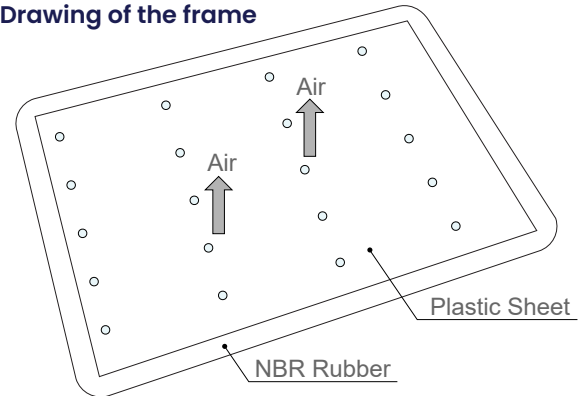
SM-ABM / SM-EBM

4 Clean Products

• Frame For Sticky Mat

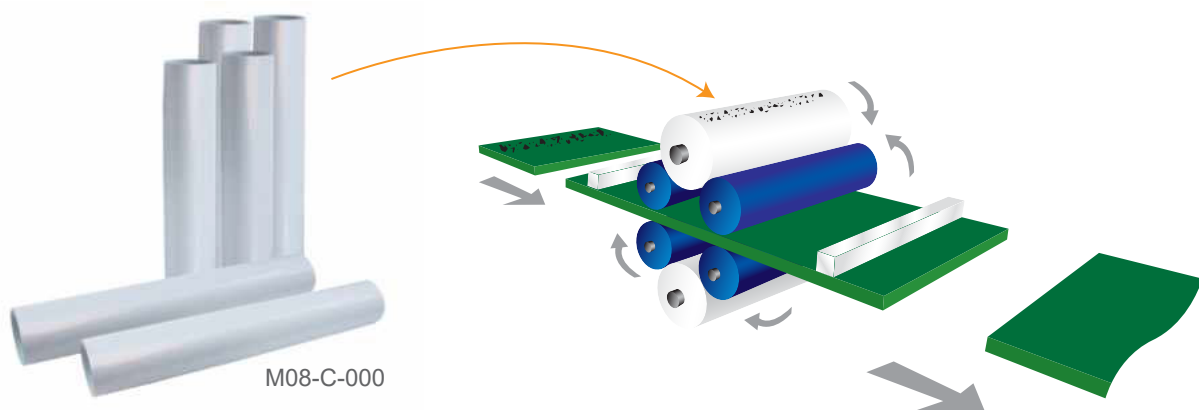


Drawing of the frame



Size	600 X 900	600 X 1200	18" X 36"	18" X 45"	26" X 45"	24" X 36"
Thickness (mm)	ID : 1T					
	ED : 5T					
Width (mm)	ID : 605	ID : 605	ID : 462	ID : 462	ID : 665	ID : 615
	ED : 705	ED : 705	ED : 562	ED : 562	ED : 765	ED : 715
Length (mm)	ID : 905	ID : 1205	ID : 919	ID : 1148	ID : 1148	ID : 919
	ED : 1005	ED : 1305	ED : 1019	ED : 1248	ED : 1248	ED : 1019
Hole Size (Φ)	0.5					
Interval of each hole in cross section (mm)	50					
Carton Size (mm)	720 X 1020 X 12(H)	720 X 1320 X 12(H)	600 X 1020 X 12(H)	600 X 1270 X 12(H)	790 X 1270 X 12(H)	720 X 1020 X 12(H)
Quantity / Carton	1EA					
Weight / Carton	2.2 KG	3.2 KG	1.8 KG	2.7 KG	3.4 KG	2.5 KG

• PCB Cleaning Roll



Material: PP
Color: White
Size: 3" x 600mm x 20m or 25m

Normally, PCB Cleaning Roll goes with machine, not with a handle, and this roll is mainly designed for cleaning PCB. To clean the surface of PCB effectively, perfect flat conditions of the roll are essential. Several different adhesive levels are available for different applications.

4 Clean Products

• PE Sticky Roller & Antistatic PE Sticky Roller



M05-C-000



Color: Blue, White, Transparent
Size: 100, 150, 160, 200, 250, 300, 450, 500 mm, etc.
Length: 20m/roll
Core: 38mm, 76mm (3")

• Non-Woven Sticky Roller



M07-C-000



Color: White
Size: 80, 160, 320 mm
Length: 10, 20m/roll
Core: 38mm, 76mm (3")

• Roller Handle



M09-C-004

M09-C-003

M09-C-002

M09-C-001

Part Number	Descriptions		Size		Handle	Material		Packing
	Core dia.	Head	Length	Head		Frame	Head	
M09-C-001	38mm	8cm	25cm	PE	Steel chrome (Cr) plating	PE	10 pcs/carton (1.4kgs/CTN) Size : 220 x 350x 220 mm(H)	
M09-C-002	38mm	16cm	29cm	PP	Steel chrome (Cr) plating	PE	10 pcs/carton (1.7kgs/CTN) Size : 220 x 350x 220 mm(H)	
M09-C-003	38mm	16cm	107cm	PP	Steel chrome (Cr) plating	PE	10 pcs/carton (4.5kgs/CTN) Size : 230 x 1100x 230 mm(H)	
M09-C-004	76.2mm	32cm	120cm	PP	Steel chrome (Cr) plating	PE	5 pcs/carton	

• ESD PET Adhesive Film



Polstar-EWF is a good choice to make ESD surface economically by simply attaching high quality ESD treated adhesive film on the surface, like glass, acrylic, PC, etc. This film can also be used as a protection film for protecting the surfaces or devices from scratches during handlings, transportation, etc.

Features

- Good ESD properties on backing side.
- Semi-permanent ESD properties.
- No migration.
- Very low removal adhesive.



- ESD hard coated PET Film(50, 75,100 μ m)
- Silicone Adhesive(20 μ m)
- Release Film (25 μ m)

Physical Properties

Properties	Unit	Value	Test Method
Film	-	ESD hard coated PET	
Adhesive	-	Silicone	
Thickness	Backing	μ m	
	Adhesive		
		50 \pm 2, 75 \pm 2, 100 \pm 2	
		20 \pm 3	
Color	-	Clear	
Adhesion	gf/25mm	20 \pm 3	ASTM D 1000
Resistance	Adhesive	-	ASTM D 257
	Backing	Max. 10 ⁵⁻⁸	
Electrostatic Discharge	sec	Max. 0.1	
Size	mm, m	1000 ~ 1200mm X 100m, 200m	

How to apply the film on the surface effectively

1. Keep the surface free of dust, dirt, moisture, etc.
2. Measure the area where the film is applied and cut the film with extra 1-3 cm.
3. Prepare spray bottle with purity water mixing water-soluble detergent, like shampoo(8-10 drops of detergent for 1 liter water).
4. Spray the prepared water on the surface to make the surface wet and slippery.
3. Remove the releasing sheet from the film and also spray the water on the adhesive area of the film.
4. Attach the film on the surface from the center of the area and press the film out from the center to edge sides smoothly several times by using of a flat and soft scoop until the moisture and the air bubbles are completely removed.
6. Cut the film fitting in the surface perfectly.

- * Please do not press or wipe edge side strongly until the margin of the film is cut-off
- * Please do not use any kinds of chemicals and solvents for cleaning.
- * Use very soft wiper with water soluble detergent for surface cleaning.

4

Clean Products

• ESD PET Film



Polstar ESD PET Film is suitable for PCB manufacturing assembly lines for PCB testing, and this film will also be used as a transparent copy film. Antistatic treatment on both surface gives semi-permanent ESD properties.

Thickness: 50/75/100µm
 Width: 1000mm ~ 1250mm
 Surface Resistance (both sides): 10e5~10e8 ohm



- Antistatic Treatment
- PET Film (50µm, 75µm, 100µm)
- Antistatic Treatment

• Protection Film



Protection Film are widely used in various objects that need surface protection from outer impact, contaminations, scratches etc. They are used on stainless steel, AL sheet, acrylic sheet, powder coated steel, wooden flooring, PVC sheet and many others.

There are a number of variations in Protection Film. So it is always recommended to contact mecind@mecind.co.kr or person you know for more information.

M10-C-000

Part Number	Material	Adhesive	Thickness(um)	Adhesive(g/25mm)	Width(mm)	Length(m)	Elongation(%)	Applications
Surface Protection Film	Polyethylene	Acrylic	40-150	30, 100, 200, 300 400, 500, 600, 700	100-1800	100-2000	over 250	PVC & Alumium & ABS Panel, Melanin board SUS Panel, Fabric Sheet
PE Protection Film	Polyethylene	Acrylic	0.050, 0.06, 0.070 0.080, 0.100, 0.150	10, 30, 50, 100, 300	100-1800	100-2000		Back Light, Touch Screen, LCD/PD Panel Optical, Film&Resin Plate
PE Protection Film (Silicone Adhesive)	Polyethylene	Silicone	50-250	1-3	100-1800	100-2000		Glass, Plastics, Touch Screen, Optical Film
PE Protection Film (Urethane Adhesive)	Polyethylene	Urethane	50, 60, 80, 150	10-30	100-1800	100-2000		Back Light Unit, LCD, PC, PMMA, Glass, Diffusion Film, Polarizing Film

Part Number	Material	Adhesive	Features	Thickness (um)	Peel Strength(mm)	Re-Adhesive Value(%)
PET Release Liner	Clear PET	Silicone	One-sided/Double-sided coating	22-188	1-180	80-97

Part Number	Thickness (um)	Tensile Strength (kg/cm ²)	Elongation(%)	Tear Strength (kg/cm)	Adhesive (g/25mm)	Application
EVA Protection Tape	50	300-350	450-600	110, 120, 130	30°C - 15, 20, 30, 40 80°C - 30, 40, 50 120°C - 35, 45, 60	PC, PMMA, PET, PVC, ABS, Glossy surface steel, Plastic themal forming

Available Width: 1,600mm
 Available Length: 200m ~ 3,000m

4 Clean Products

• Silicone Rubber Roller

Stick Type



Stick Type

Item code	Descriptions	Dia.(mm)	Width	Length
M15-C-001		5	-	120 mm

Handy Type



Handy Type

Item code	Descriptions	Dia.(mm)	Width	Length
M15-C-002		20	30 mm	90 mm
M15-C-003		25	50 mm	90 mm
M15-C-004		30	100 mm	150 mm
M15-C-005		30	150 mm	150 mm
M15-C-006		30	200 mm	150 mm
M15-C-007		30	250 mm	150 mm
M15-C-008		30	300 mm	150 mm

Floor Type



Floor Type

Item code	Descriptions	Dia.(mm)	Width	Length
M15-C-009		50	250 mm	1~2 m
M15-C-010		50	300 mm	1~2 m
M15-C-011		50	500 mm	1~2 m
M15-C-012		50	600 mm	1~2 m

Handy Type



• Glove Cleaner

Wearing on and off the gloves every time you clean them is not the most efficient way to work with them. The Glove Cleaner, however, will make it significantly easy and time-saving. The workers can put their hands on the cleaner while wearing the gloves, and simply push or pull their hands as the cleaner does its job. The cleaner serves numbers of purposes in various manufacturing process, and it does not matter where you put the cleaner as long as it is close enough to the workers.



Features

- Stainless Steel Body offers great durability
- The nature of compact design makes it very mobile
- Can be mounted on either table or wall
- The adhesive rolls have cutting lines to make them easy to peel off
- Non-woven, PE and PP rollers are available



M30-C-001

Part Number	Non-woven Sticky Roll	PE Sticky Roll	PCB Cleaning Roll
Material	Non-woven	Polyethylene	PP Synthetic Paper
Core	3" PE Core, 155mm x 15m	3" PE Core, 150mm x 20m	3" PE/ABS Core, 155mm x 20m
Thickness	180µm	47µm	80µm
Adhesion	250~350g/25mm	400~500g/25mm	600~800g/25mm

4 Clean Products

• DCR-Pad



Features

- Use with reusable Rubber Rollers.
- Excellent cleaning guaranteed.
- Cost-effective.
- Variations available;
 - 1) DCR-Pad with full adhesive area (standard)
 - 2) BCR-Pad with adhesive free area
 - 3) Black colored DCR-Pad for better dust visibility

Adhesion (gf/25mm): 1,250 ± 100
 Thickness: Adhesive paper - 80um/sheet
 Release paper - 117um/sheet
 Total Thickness: 13.00mm/pad (50 sheets)
 Packing: 50 sheets/pad, 20pads/box

Size

- 1) 330mm x 240mm (Adhesive area: 330 x 180mm)
- 2) 165mm x 240mm (Adhesive area: 165 x 180mm)



- Release paper
- Adhesive
- Base paper



Adhesive Free on one end
Easier to peel-off

Free Adhesive Area



Full Adhesive
Improved dust visibility

• Holder for DCR-Pad



M29-C-001

Packing

- 1) 50 sheets/pad, 5 pads/inner box, 5 inner boxes/outer carton
- 2) 50 sheets/pad, 10 pads/inner box, 5 inner boxes/outer carton

Total weight: 860g, 430g/pad, 24.5 kgs/carton

5 Stationery

• Polstar Clean Paper



Polstar Clean Paper is specially designed for writing, printing and photo-copying machine in Cleanroom environment. Through polymerization process, fiber lint and particulates are tightly bound each other. This will decrease electro-static buildup and will eventually minimize scrap rate of copier. Polstar Clean Paper provides the variety of colors, sizes and weights.

Features

- Low Talc
- Recyclable
- Double packing in cleanroom environment
- Ultra-low particle generation, extractable chemicals and metallic ion content
- High opacity and durability
- High tear and tensile strength
- Smooth feeding and superior toner adherence in laser printers and PPC copiers
- Clear writing
- Various colors, sizes and weights are available

• Polstar Clean Paper (EC Type)

Newly developed Clean Paper to meet the requirement of price-oriented customers



Features

- Low Talc
- Recyclable
- Single packing in cleanroom environment
- Ultra-low particle generation, extractable chemicals and metallic ion content
- High opacity and durability
- High tear and tensile strength
- Smooth feeding and superior toner adherence in laser printers and PPC copiers
- Clear writing
- Various colors and sizes are available

• TF Clean Paper



Features

- Talc Free
- Recyclable
- Double packing in cleanroom environment
- Ultra-low particle generation, extractable chemicals and metallic ion content
- High opacity and durability
- High tear and tensile strength
- Smooth feeding and superior toner adherence in laser printers and PPC copiers
- Clear writing
- Colors: White, Light blue

5 Stationery

• Clean Roll Paper



M01-S-000

Recyclable
Various colors and weights are available
Core dia.: 2", 3"(76mm)
Width: 30mm~1600mm
Length: 30m~10,000m

• Clean Notebook



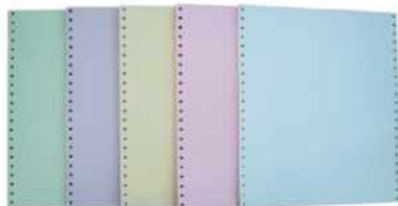
M05-S-000

Features

- Easy to write on
- Tear resistance
- High-density polyethylene cover, plastic spirals and durable clean paper
- Translucent cover allows the reader to easily identify the notebook's contents
- Spiral design allows the notebook to lie flat and stay opened

Line: Ruled, Checked
Custom sizes are also available

• Continuous Printing Paper



M04-S-000

- Made of polstar clean paper
- Strong and durable
- Suitable for Cleanroom environment

Part Number	Weight(gsm)	Size (mm)		Packing
Clean Paper	72, 80, 100, 250	A3	420 x 297	250 sheets/pk, 5 pks/ctn
		A4	210 x 297	250 sheets/pk, 10 pks/ctn
		A5	210 x 148	250 sheets/pk, 20 pks/ctn
		B4	257 x 364	250 sheets/pk, 5 pks/ctn
		B5	182 x 257	250 sheets/pk, 10 pks/ctn
Full Sized Clean Paper	72, 80, 100, 250	FULL SIZE	645 x 900	9 sheets of A4 size are available
			850 x 900	12 sheets of A4 size are available
Clean Paper in Roll	72, 80, 100, 250	2", 3" (core) X 30~1600mm(W) x 30~10,000m(L)		
Clean Paper (EC)	72	White, R. Blue, L. Blue, Green, Pink, Yellow, Orange		
TF Clean Paper	72	White, L. Blue		
Continuous Printing Paper	72, 80, 100	9.5" X 11"		2,000 sheets/ctn
		15" X 11"		2,000 sheets/ctn
Standard Color		White, S. blue, R. Blue, L. Blue, Green, Pink, Yellow, Orange		

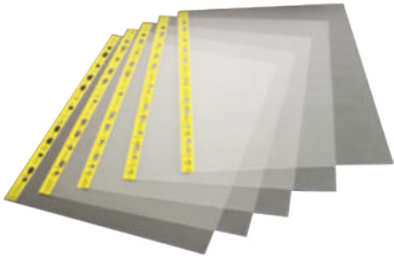
* Other weights, colors and sizes are also available under minimum production q'ty.

Clean Notebook	72, 80	Spiral / A4	210 x 297	50 sheets/book
		Spiral / A5	210 x 148	50 sheets/book
		Spiral / A6	105 x 148	50 sheets/book
		Stapler/A4	210 x 297	30 sheets/book
		Stapler/A5	210 x 148	30 sheets/book

* Other weights, sizes and sheets are also available under minimum production q'ty.

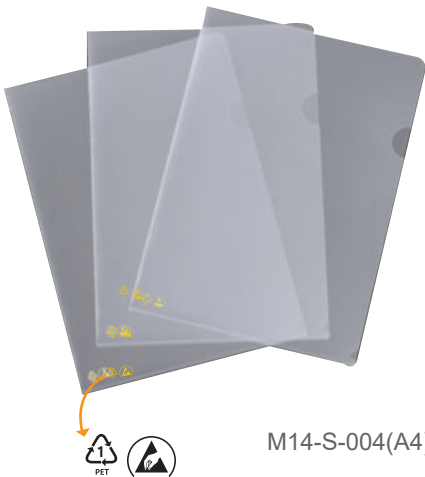
5 Stationery

• ESD Clear File



Material: PP
Size: A3, A4, B4, etc.
Thickness: 0.05mm
S/R: 10e9 ~ 10e11 ohm

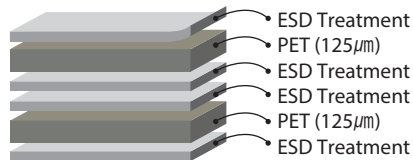
• ESD Document Holder



Features

- Protect documents, especially thinner files
- Cleanroom compatible
- Open 2 ways (top & side)

Material: PET
Size: A4
Thickness: 0.2mm
S/R: 10e5~10e7 ohm (both side)



M14-S-007

Material: ABS
Color: Black
Surface Resistance: 10E5~10E8 ohm



M14-S-008
M14-S-009

Material: PETG
Size: A4
Back width: 20mm/30mm
Color: Black
Surface Resistance: 10E5~10E8 ohm



M14-S-010

Material: ABS
Size: A4 (3 Layers)
Color: Black
Surface Resistance: 10E5~10E8 ohm



M14-S-011

Material: ABS
Size: A4
Color: Black
Surface Resistance: 10E5~10E8 ohm

5 Stationery

• ESD Ring Binder



- M15-S-001
- M15-S-002
- M15-S-003
- M15-S-004
- M15-S-005
- M15-S-006

Material: PU, Leather Surface
 Size: 45mm, 75mm
 Color: Black
 Surface Resistance: 10E5~10E8 ohm

- A4, 45mm, 2rings, PVC
- A4, 45mm, 3rings, PVC
- A4, 75mm, 2rings, PVC
- A4, 75mm, 3rings, PVC
- A4, 45mm, 3rings, PU
- A4, 45mm, 3rings, Paper, Blue

• ESD Laminating Film



M13-S-004



M13-S-006

Features

- Good Transparency
- 2 Colors
- Good performance in Laminating
- Semi-permanent surface resistivity
- Film in roll type is also available on request



- ESD treatment PET film (50µm)
- PP Hotmelt (50µm)
- PP Hotmelt (50µm)
- ESD treatment PET film (50µm)

Applications

- Protect documents with ESD laminating.

Physical properties

Properties		Unit	M13-S-004	M13-S-006	Test Method
Thickness	Base Film	µm	Value		ASTM D257
	PP Hotmelt	µm	50±2	50±3	
Total Thickness		µm	200±10		
Size			A4 / A3 / Roll (1m x 500m)		
Color			Clear	Light grey	
Surface Resistance (Out)		Ω	Max.10e6	Max.10e6	
Surface Resistance (In)			Max.10e6	Max.10e6	
Triboelectricity		V	Max300	Max.500	

5 Stationery

• ESD Mouse Pad



- embossed bottom
- Features
- Excellent ESD properties
 - Dual layer structure
 - Easy Mouse operating
 - Smooth surface

Color: Dark Blue / Black
Materials: Microfiber ESD fabric (top) / Conductive rubber (bottom)
Top surface: $10e6 \sim 10e7$ ohm / Bottom surface: $10e4 \sim 10e5$ ohm

Size
1.4mm(T) x 170mm x 210mm (M20-S-001)
1.4mm(T) x 200mm x 250mm (M20-S-002)



M20-S-003

Material: Black Lycra Fabric + PU Gel
Color: Black
Surface Resistance: $10E5 \sim 10E8$ ohm

• ESD Mouse



M25-S-002

Wireless
Material: ABS
Color: Black
Specification: USB Port
Surface Resistance: $10E5 \sim 10E8$ ohm



M25-S-001

Material: ABS
Color: Black
Specification: USB Port
Surface Resistance: $10E5 \sim 10E8$ ohm

• ESD Keyboard



M24-S-001

Wireless
Material: ABS
Color: Black
Specification: USB Port
Surface Resistance: $10E5 \sim 10E8$ ohm



M24-S-002

Material: ABS
Color: Black
Specification: USB Port
Surface Resistance: $10E5 \sim 10E8$ ohm

5 Stationery

• ESD Cleanroom Pen



M39-S-001(Black)
M39-S-002(Blue)
M39-S-003(Red)

Colors: Black, Blue, Red
Packing: 2pcs/bag, 100bags/case

Features

- Barrel is made of HDPP(high-density polypropylene)
- Low Sodium, Chloride and Heavy Metal used Ink
- Non-smearing permanent Ink
- Double poly packed with cleanroom bags in Class 100(ISO 5)
- Low outgassing and particulate generation material is used
- Rectangular clip design

• ESD Pen



M30-S-001

Material: ABS
Color: Black
Surface Resistance: 10E5~10E8 ohm

• ESD Pen Stand



M31-S-001

Material: ABS (Plastic Part)
Color: Black (Plastic Part)
Surface Resistance: 10E5~10E8 ohm

• ESD Cutter



M32-S-001

Material: ABS (Plastic Part)
Color: Black
Surface Resistance: 10E5~10E8 ohm

• ESD Puncher



M28-S-001

Material: ABS (Plastic Part)
Color: Black (Plastic Part)
Surface Resistance: 10E5~10E8 ohm

• ESD Stapler



M29-S-001

Material: ABS
Color: Black
Surface Resistance: 10E5~10E8 ohm

• ESD Tape Cutter



M36-S-001

Material: ABS
Diameter: 25mm, 75mm
Color: Black
Specification: Tape inner
Surface Resistance: 10E5~10E8 ohm



M36-S-002

Handheld type
Material : ABS
Size : 2"/2.5"
Color: Black
Surface Resistance: 10E5~10E8 ohm

5 Stationery

• ESD Telephone



M35-S-001

Material: ABS
Color: Black
Surface Resistance: 10E5~10E8 ohm

• ESD Scanner



M37-S-001

Material: ABS (Plastic Part)
Color: Black
Surface Resistance: 10E5~10E8 ohm

• ESD Clip



M33-S-001

Material: Plastic
Size: L, M
Color: Opaque
Surface Resistance: 10E5~10E9 ohm

• ESD Calculator



M23-S-001

Material: ABS
Surface Resistance: 10E5~10E8 ohm

• ESD Ruler



M26-S-001

Material: Plastic
Color: invisible
Surfaceication: 30cm
Surface Resistance: 10E5~10E8 ohm

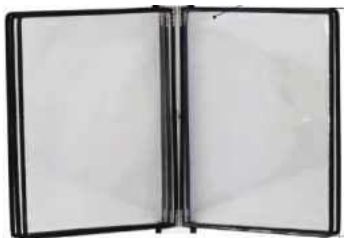
• ESD Scissors



M27-S-001

Material: ABS(Plastic Part)
Color: Black(Plastic Part)
Surface Resistance: 10E5~10E8 ohm

• ESD Display Rack



M34-S-001

Wall Mounting type
Material: ABS base+pp
Paper Size: 210*297mm
Color: Black, Black leaflets
Surface Resistance : 10E7 ~ 10E9 ohm
Leaf: 10 pockets



M34-S-002

Desktop type
Material: ABS base+pp+metal
Paper size: 210*297mm
Color: black stand, black leaflets
Surface Resistance : 10E7 ~ 10E9 ohm
Leaf: 20 pockets /40 sheets
Half moon handle
Can be rotate 360° by hand

5 Stationery

• ESD Cleanroom Bags

Features

- TPU material
- Surface Resistance: $10e4 \sim 10e6$ ohm
- Good durability and elasticity
- Wear, cold and oil resistance
- ECO friendly and no harmful to human body
- Expandable (backpack, cross bag)
- Adjustable shoulder straps
- Suitable for cleanroom and ESD environment



Backpack



M38-S-001 (Clear)



M38-S-002 (Hazy)

300 x 410 x 150
300 x 410 x 220
(expanded)

Cross bag



M38-S-004 (Hazy)



M38-S-003 (Clear)

390 x 290 x 140
390 x 290 x 210
(expanded)



M38-S-006 (Hazy)



M38-S-005 (Clear)

230 x 260 x 115

Pouch



M38-S-007 (S)
M38-S-008 (M)
M38-S-009 (L)
M38-S-010 (Set)

S - 215 x 155
M - 315 x 215
L - 330 x 245

6 Wipers

• Polyester Knit Wiper



9" x 9"

M01-W-004 (Polstar-970LD)



9" x 9"

M01-W-015 (Polstar-955)

100% Polyester continuous yarn used wiper
4" x 4" 600 sheets/pk, 6 pks/ctn
6" x 6" 300 sheets/pk, 10 pks/ctn
9" x 9" 150 sheets/pk, 8 pks/ctn

Features

- Cost-effective solution
- Good absorbing capacity
- Low particle generation
- Double packed in Class 100~1000 environment

Applications

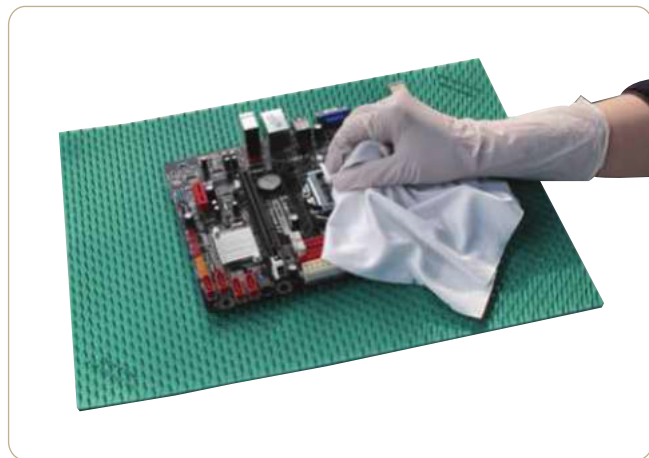
- Semiconductor
- TFT-LCD
- Cell phone module line
- PCB Industry
- Cleaning equipment



M01-W-025 (Inox-3140)

M01-W-026 (Inox-3070)

9" x 9", 100 pcs/bag, 10 bags/ctn



• Micro-Denier Fiber Wiper



9" x 9"

M02-W-001 (Polstar-935N)



9" x 9"

M02-W-012 (Polstar-930)

M02-W-015 (Polstar-937)



9" x 9"

M06-W-001 (Polstar-937E)

4" x 4" 600 sheets/pk, 6 pks/ctn
6" x 6" 150 sheets/pk, 10 pks/ctn
9" x 9" 150 sheets/pk, 8 pks/ctn

4" x 4" 600 sheets/pk, 6 pks/ctn
6" x 6" 150 sheets/pk, 10 pks/ctn
9" x 9" 150 sheets/pk, 8 pks/ctn

4" x 4" 600 sheets/pk, 6 pks/ctn
6" x 6" 150 sheets/pk, 10 pks/ctn
9" x 9" 150 sheets/pk, 8 pks/ctn

6 Wipers



9" x 9"

M02-W-004 (Inox-1003)

- 4" x 4", 400 sheets/pk, 6 pks/ctn
- 6" x 6", 50 sheets/bag, 2 bags/pk, 10 pks/ctn
- 9" x 9", 50 sheets/bag, 2 bags/pk, 10 pks/ctn



9" x 9"

M02-W-007 (Inox-1006)

- 4" x 4", 300 sheets/pk, 6 pks/ctn
- 6" x 6", 50 sheets/bag, 2 bags/pk, 10 pks/ctn
- 9" x 9", 10 sheets/bag, 10 bags/pk, 10 pks/ctn



9" x 9"

M02-W-027 (Inox-1050)
M02-W-028 (Inox-1080)

- 9" x 9", 100 pcs/bag, 10 bags/ctn

Features

- Excellent wiping without scratches
- Extremely low non-volatile residues and ions
- Excellent absorbing capacity
- Suitable for sensitive surface by its soft texture
- Double packed in Class 10~100 Cleanroom

Applications

- Sophisticated products
- Digital camera lens
- Printer drum
- Optical product
- TFT-LCD, PDA

Differences between microfiber wipers and typical polyester wipers

Materials

Microfiber wipers: microscopic polyester(70~80%) and polyamide(20~30%) fibers
Polyester wipers: 100% polyester

Touch

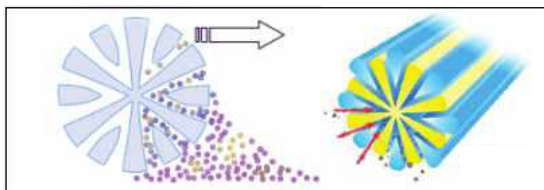
The touch of microfiber wipers compare to normal polyester wiper is much soft

Absorbency

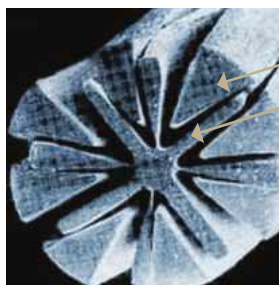
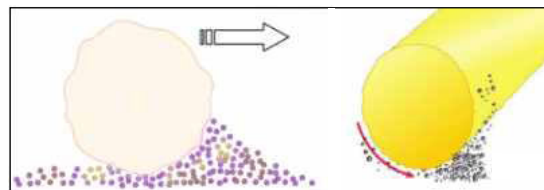
Microfiber wiper has better absorbency thanks to its unique fiber structure

- Enlarged cross section of single fiber

① Well-split microfiber



② Normal polyester fiber



Polyamide
Polyester

7 Packaging Bags and Film

Electro Static Discharge(ESD) is nothing new, but its effect on electronic components and devices is serious if it is not properly controlled. Uncontrolled ESD causes not only partial damage, but also sometimes destroys electronic components and devices totally. Together with controlling of ESD, moisture is also essential to be controlled for sensitive devices or components.

Apart from personal grounding, sensitive goods should also be well protected from ESD and moisture during transportation and storage.

There are several types of packaging bags in the market. The most important thing is to select a suitable bag for each application.

• Static Shielding Bag(SSB)

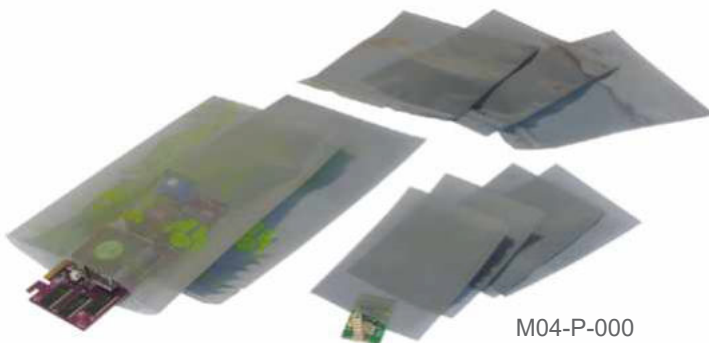
SSB is manufactured by depositing a thin metal coating, like aluminum over an antistatic polyester film substrate. This metalized layer protects the devices or the components in the bag from electrostatic fields.

According to the position of the metalized layer, there are two types of static shielding bags, "Metal-In" and "Metal-Out", in the market.

The metal-in bag or buried metal shielding bag is the most commonly used and recommended for packaging of static-sensitive components. It also tends to be superior to the metal-out bag in durability and cost.

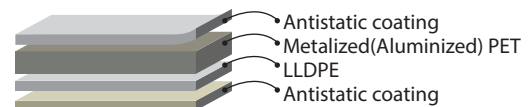
The metal-out shielding bag also protects the devices in the bag against static-induced damage. As the metal layer is closer to the outside surface, this bag has lower ESD reading than the metal-in bag, which can be important in some applications.

Our SSB is the metal-in type, which has the metalized layer inside.



M04-P-000

Thickness: 55~200 μ m(Common: 75 μ m)
Maximum width: 1,250mm
S/R: 10e9~10e11 ohm



• Conductive Black PE Bag(CBPB)



M06-P-000

- Cost-effective bag
- Low surface resistance

Thickness: 40~200 μ m(Common: 80 μ m, 100 μ m)
Maximum width: 700mm
S/R: 10e3-10e6 ohm



7 Packaging Bags and Film

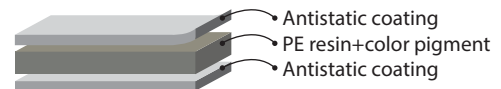
• Antistatic PE Bag (APB)



M07-P-000

- Cost-effective bag
- Suitable for less sensitive components for ESD
- Color: Pink, Blue, etc.

Thickness: 40~200 μ m (Common: 50 μ m, 80 μ m)
Maximum width: 1000mm
S/R: 10e9-10e11 ohm



• Moisture Barrier Bag (MBB)

It is essential to keep Surface-Mount Devices (SMDs) dry from manufacturing point to the time of reflow soldering. Moisture Barrier Bag, also known as Vapor Barrier Bag, is made by multiple layers of plastic and aluminum that control moisture vapor leakage.

Basically, there are 3 kinds of Moisture Barrier Bags (MBBs), Tyvek MBB, AMBB and ANMBB, in the the market. The key factor of moisture barrier function of the bag is a metal layer, like thickness of the foil layer, foil or metalized, etc., but thickness or material of other layers will partially affect the quality of MBB as well.

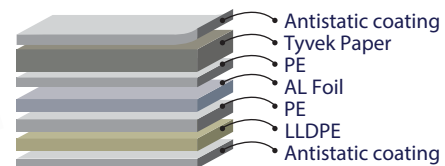
Tyvek Moisture Barrier Bag (Tyvek MBB)

Tyvek MBB is ideal for moisture sensitive devices or components, and especially is suitable for sharp-shape components thanks to its excellent puncture resistance.



M01-P-000

Thickness: 307 μ m, 247 μ m
MVTR*: < 0.02 g/100 sqinch/24h



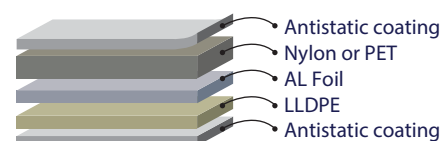
Aluminum Moisture Barrier Bag (AMBB)

AMBB is a good choice for moisture sensitive devices and components. Depending on the products stored in the bag and the periods of storage, you have several selections on AMBB by adjusting the total thickness of the bag, the thickness of AL foil layer, etc.



M02-P-000

Thickness: 62~200 μ m (Common: 100 μ m, 150 μ m)
Maximum width: 1,250mm
MVTR*: < 0.02 g/100 sqinch/24h



7 Packaging Bags and Film

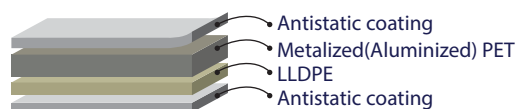
Aluminized Moisture Barrier Bag (ANMBB)

ANMBB is a new technology for barrier materials, which reduces material cost. Aluminum is vapor-deposited onto polyester film or nylon film. This cost effective bag comparing to AMBB is suitable for medium to short term dry-packaging users.



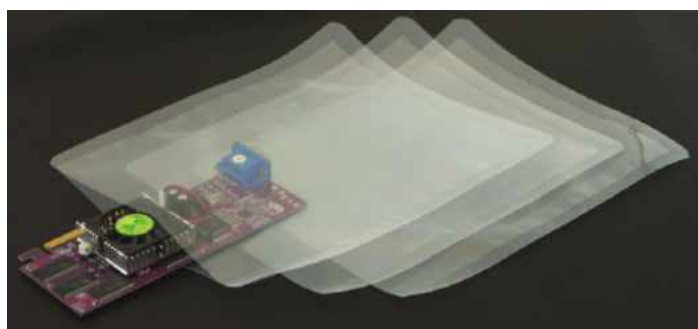
M03-P-000

Thickness: 62~200µm (Common: 90µm, 100µm)
Maximum width: 1,250mm



Transparent Moisture Barrier Bag (TMBB)

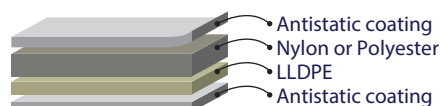
TMBB has no metal layer, but it can be used for less moisture sensitive devices and this bag can be a good choice for foods packing too, which requires clean and vacuum properties.



M05-P-000

- Suitable for less moisture sensitive devices
- Suitable for food industries
- Visible bag inside
- No metal layer, but good moisture resistance and vacuum properties.

Thickness: 62~200µm
Maximum width: 1,250mm



• Packaging Film

All types of pre-laminated packaging films, thicknesses and sizes are available.



Part Number	Product	Width(mm)	Length/roll(m)	Thickness(µm)
M08-P-000	Film for TyvekMBB	200~900	1000	247-307
M09-P-000	Film for AMBB	200~1200	1000	62-200
M10-P-000	Film for ANMBB	200~1200	1000	62-200
M11-P-000	Film for SSB	200~1500	1000	55-200
M17-P-000	Film for TMBB	200~1200	1000	62-200
M12-P-000	Film for CBPB	50~700	1000	40-200
M13-P-000	Film for APB	50~1000	1000	40-200

*Thickness units

Mil - 0.001 inch, ex) 3 mils = 0.003 x 25.4mm = 0.0762mm = 76.2 microns
Micron - 1/1,000,000m (1/1,000mm = 0.001mm), ex.) 100 microns = 100/25.4 = 3.93mils
MM - 0.15mm = 150 microns

*MVTR

The Moisture Vapor Transmission Rate (MVTR) is the rate that water vapor passes through a specific area of barrier material. MVTR is measured in grams of water vapor per 100 square inches of barrier per 24 hours (g/100 in.2/24 h).

EIA 583 Packaging Material Standards for Moisture-Sensitive Items defines a Class 1 barrier as having an MVTR of <0.02 g/100 in.2/24 h. A Class 2 barrier is set at <0.08 g/100 in.2/24 h.

• Humidity Indicator Card(HIC)

HIC allows fast visual inspection of the Relative Humidity(RH) in sealed packaging and containers. As the humidity increases, the chemically impregnated spots will be changed traditionally from blue through lavender to pink(Cobalt-HIC), blue to pink(CDF-HIC), brown to green(CB-HIC), yellow to green(CF-HIC) and green to violet(MF1-HIC). Our HICs have 3 spots or 6spots, but we also have a one spot type. It contains 3 spots, but only one spot is chemically impregnated and other two spots are just printed with reference colors for "OK" and "NG"(not good) so that user can easily check if it is failed or passed according to acceptable preset limit(ex. Semiconductor -10% RH, PCB/LED – 30% RH, etc.) in each industry.

We also have a plug type in round shape different from most other square designs in the market. Especially, if we use it with a specially designed plug case, it will be easy and effective to check the humidity conditions inside of the bags without opening if we use it with a specially designed plug case.

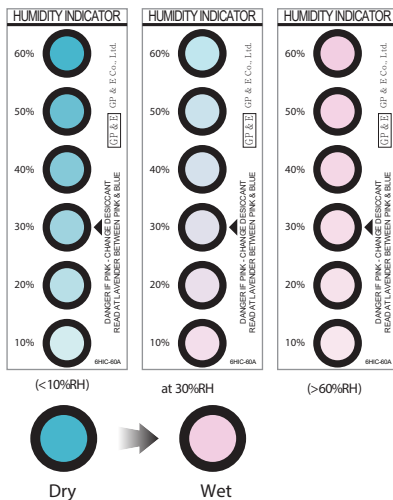
Most recently, we have developed a twin type, which is another innovative and unique concept, to absorb price-oriented customers. As you can cut each HIC into two by simply folding the card a couple of times and tearing it along pre-cut dot lines.

Features

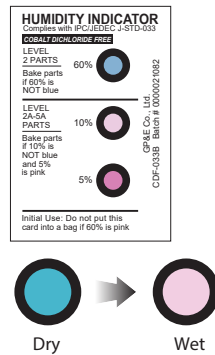
- Eco-friendly products
- Various types and designs(custom sizes and designs are also available on request)
- Meet MIL-I-8835A&IPC/JEDEC J-STD-033B.1
- Indication of warning point(option)

Standard type(3 spots, 6 spots)

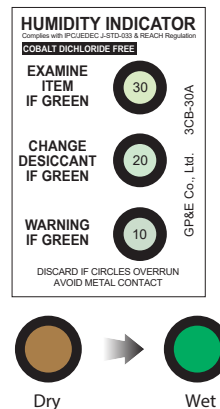
Cobalt HIC



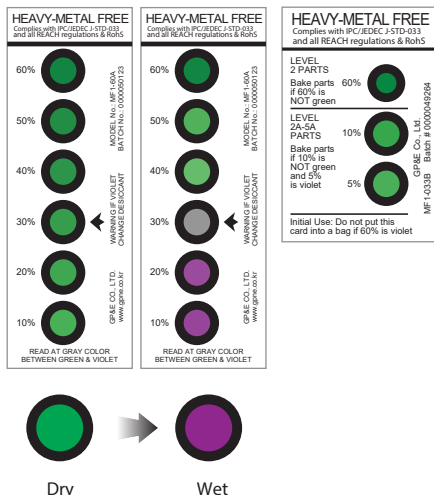
CDF(Cobalt Dichloride Free)-HIC



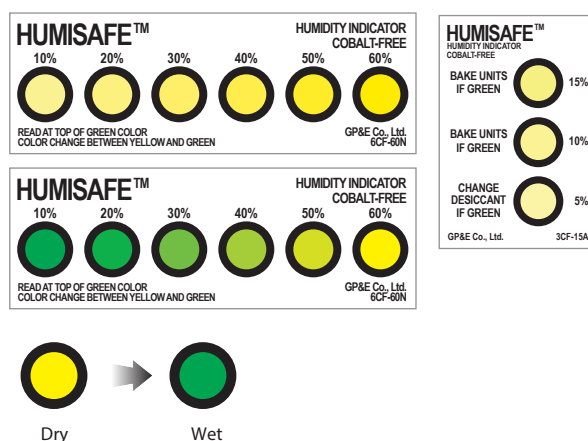
CB-HIC



Metal Free(MF) HIC



Cobalt Free(CF) HIC



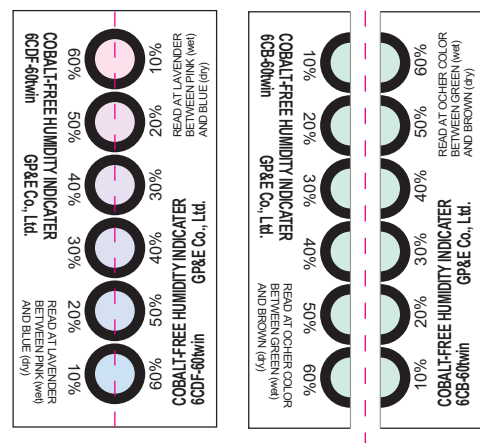
7 Packaging Bags and Film

	Color Change	Cobalt Dichloride Free (CDF)	Cobalt Free (CF)	Heavy Metal Free (HMF)	Size		Indications		Packing	
					3spots	6spots	3spots	6spots	3spots	6spots
Cobalt-HIC	Blue-Pink				50x75mm 17 x 51mm 33 x 59mm	40 x 119mm 40 x 116mm 34 x 116mm	5-10-15%	10~60%	125pc/tin or AMBB, 40tins or AMBBs / carton	200pc/tin or AMBB, 20tins or AMBBs / carton
CDF-HIC	Blue-Pink	0								
CB-HIC	Brown-Green	0	0							
CF-HIC	Yellow-Green	0	0	0						
MF1-HIC	Green-Violet	0	0	0						

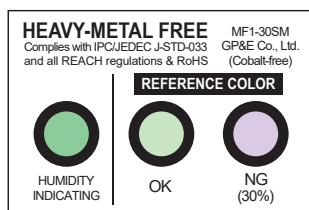
Round type



Twin type



One spot type



- ① Moisture Barrier Bag
- ② Humidity Indicator Card (HIC)
- ③ Desiccant

• Desiccant

	Dry-PAK	Ultra Dry-PAK	Silica-Gel
Material	Diatomite	Bentonite(Clay)	Silica-gel
Packing	Non-woven+ Paper	Non-woven + Paper	OPP, Paper, Tyvek, Non-woven
Unit	5, 10, 20, 25, 30, 100, 200, 500, 1000g	50g	5, 10, 20, 30, 50, 100g

8 ESD Acrylic Plate



Part Number: M01-Y-003 ~ 20

Specifications				
Division	Testing Items	Unit	PMMA Acrylic	Test Method
Physical Properties	Specific Gravity	g/cm ²	1.19	ASTM D-792
	Water Absorption	%	0.3	ASTM D-570
	Pencil Hardness	-	3H ~ 5H	JIS K-5400
	Piece Close Adhesion Strength	-	100/100	JIS K-5400
Mechanical Properties	Tensile Strength	Mpa (kgf/cm ²)	560 ~ 670	ASTM D-638
	Elongation	%	2.0 ~ 7.0	ASTM D-638
	Flexural Strength	kgf/cm ²	840 ~ 1200	ASTM D-790
	Flexural Modulus of Elasticity	kgf/cm ²	2.6 10 ⁴ ~ 3.2 x 10 ⁴	ASTM D-256
	Compressive Strength	kgf/cm ²	-	ASTM D-256
	Compressive Strength	J/N (kgf cm/cm ²)	2	ASTM D-256
Thermal Properties	Burning Resistance	-	Incombustibility HB	UL-94
	Coefficient of Linear Thermal Expansion	x10-5 in/ in °F	-	ASTM D-696
	Heat Deflection Temp	°F/ °C at 264 psi	-	ASTM D-648
	Vicat Softening Temp	°F/ °C	-	ASTM D-3418
	Max Operation Temp	°F/ °C	-	-
	Thermal Conductivity	BTU-in/ft2-hr-°F x10-4cal/in/cm-sec-°C	-	-
Electronical Properties	Surface Resistivity	500	10 ⁶ ~ 10 ⁸	ASTM D-257
	Anti-Static Decay Time	Sec	Below 0.1	MIL B-81705
Size	1,200 mm x 2,400 mm			
Thickness	3.0/ 4.0/ 6.0/ 8.0/ 10.0			
Color	Clear Transparent			
Remark	Other Size, Thickness and Colors are also Available Upon Request			

8 Static Dissipative PC (Polycarbonate) Plate



Part Number: M03-Y-003 ~ 010

Specifications				
Division	Testing Items	Unit	PC Polycarbonate	Test Method
Physical Properties	Specific Gravity	g/cm ²	1.2	ASTM D-792
	Water Absorption	%	0.01	ASTM D-570
	Pencil Hardness	-	HB	JIS K-5400
	Piece Close Adhesion Strength	-	100/100	JIS K-5400
Mechanical Properties	Tensile Strength	Mpa (kgf/cm ²)	58.8~68.6/(560~670)	ASTM D-638
	Elongation	%	90~140	ASTM D-638
	Flexural Strength	kgf/cm ²	920~980	ASTM D-790
	Flexural Modulus of Elasticity	kgf/cm ²	2500	ASTM D-256
	Compressive Strength	kgf/cm ²	-	ASTM D-256
	Compressive Strength	J/N (kgf cm/cm ²)	6	ASTM D-256
Thermal Properties	Burning Resistance	-	Incombustibility V-0~v2	UL-94
	Coefficient of Linear Thermal Expansion	x10-5 in/ in °F	3.8	ASTM D-696
	Heat Deflection Temp	°F/ °C at 264 psi	270/132	ASTM D-648
	Vicat Softening Temp	°F/ °C	310/154	ASTM D-3418
	Max Operation Temp	°F/ °C	170/77	-
	Thermal Conductivity	BTU-in/ft2-hr-°F x10-4cal/in/cm-sec-°C	1.3/4.5	ASTM C-177
Electronical Properties	Surface Resistivity	500	10 ⁶ ~ 10 ⁸	ASTM D-257
	Anti-Static Decay Time	Sec	Below 0.1	MIL B-81705
Size	1,200 mm x 2,400 mm			
Thickness	3.0/ 4.0/ 6.0/ 8.0/ 10.0			
Color	Clear Transparent			
Remark	Other Size, Thickness and Colors are also Available Upon Request			

8 Walls & Partitions

Polstar Static Dissipative Plate (PSDP) series are widely used in the following applications

- Cleanroom manufacturing area
- Semiconductor and Electronics / TFT / LCD manufacturing area and equipment
- Pharmaceutical and Biomedical processing areas
- Food processing area
- Explosive manufacturing areas
- Aerospace / Automobile related area
- Equipment viewing windows and doors
- Equipment enclosures and covers
- IC chip conveyor systems
- Dot placement machine
- Stencil printing machine
- Wafer handling equipment
- Desiccator cabinets
- Transport boxes
- Perimeter glazing
- Transparent room partitions
- Glazing panels for mini-environment and pass-thru units
- Laminar flow applications
- Portable cleanroom panels
- Ceiling panels
- Mini-environment panels
- Microbiology filling table covers
- Sterile filling station panels
- Barrier system panels
- Insulator unit covers
- Machinery guards
- Separator panels
- Templates



8 ESD Grid Black Curtain Film

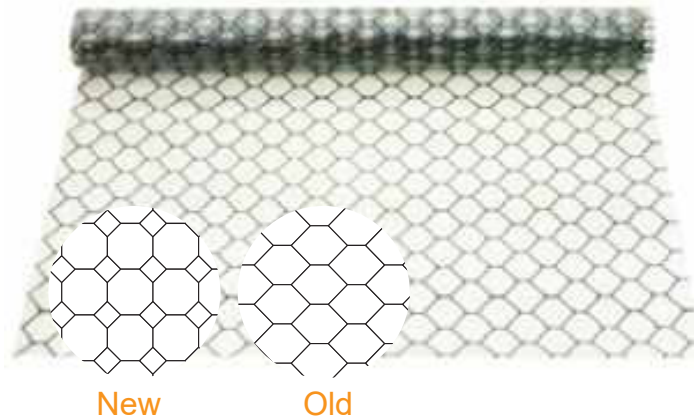


Part Number: M09-Y-003

Specifications					
Descriptions		Front Side	Back	Unit	Test Method
Surface Resistivity		10e ⁵ ~ 10e ⁸	Over 10e ¹¹	ohm/ Sq.m	ASTM D-257
Electro Static Voltage		Less than 700	Less than 1,200	Voltage	Electrostatic Field Meter
Decay Time	5000V->500V	Less than 0.5	Less than 0.5	Sec.	MIL-B-81705C
Tensile Strength	Length/MD	1.9		kg/mm ²	ASTM D-882
	Width/TD	1.9			
100% Modulus	Length/MD	1.1		kg/mm ²	
	Width/TD	1.8			
Elongation	Length/MD	170		%	
	Width/TD	210			
Heat Shrinkage	60°C x 30min in H2O	Less than 5		%	Internal Method

Size and Packing Information				
Size	Thickness	0.5	mm	
	Width	137	cm	
	Roll	20	m	
Color	Grid on Opaque Black		-	
Material of the Film	PVC		-	
Material of the Core	Paper		-	
Core Diameter	3		inch	

8 ESD Grid Curtain Film



Part Number: M05-Y-009

Specifications					
Descriptions		Front (Grid) Side	Back	Unit	Test Method
Surface Resistivity		10e ⁵ ~ 10e ⁸	Over 10e ¹¹	ohm/ Sq.m	ASTM D-257
Electro Static Voltage		Less than 700	Less than 1,200	Voltage	Electrostatic Field Meter
Decay Time	5000V->500V	Less than 0.5	Less than 0.5	Sec.	MIL-B-81705C
Tensile Strength	Length/MD	1.9		kg/mm ²	ASTM D-882
	Width/TD	1.9			
100% Modulus	Length/MD	1.1		kg/mm ²	
	Width/TD	1.8			
Elongation	Length/MD	170		%	
	Width/TD	210			
Heat Shrinkage	60°C x 30min in H2O	Less than 5		%	Internal Method

Size and Packing Information				
Size	Thickness	0.5	mm	
	Width	137	cm	
	Roll	20	m	
Color	Grid on Opaque Black		-	
Material of the Film	PVC		-	
Material of the Core	Paper		-	
Core Diameter	3		inch	

Part Number: M06-Y-006T

Specifications					
Descriptions		Front Side	Back	Unit	Test Method
Surface Resistivity		10e ⁸ ~ 10e ¹⁰	10e ⁸ ~ 10e ¹⁰	ohm	ASTM D-257
Volume resistivity		10e ⁷ ~ 10e ⁸	10e ⁷ ~ 10e ⁸	ohm/cm	
Friction Electrocharge		Less than 300	Less than 300	Voltage	Electrostatic Field Meter
Decay Time	5000V->500V	Less than 0.5	Less than 0.5	Sec.	MIL-B-81705C
Tensile Strength	MD	1.9		kg/mm ²	ASTM D-882
	TD	1.9			
100% Modulus	MD	1.1		kg/mm ²	
	TD	1.8			
Elongation	MD	170		%	
	TD	210			
Heat Shrinkage		Less than 5		%	Internal Method (60°C x 30min in H2O)

Resistance to Chemicals			
Chemicals	Front Side	Back	Test Method
Hydrochloric Acid (10%)	○	○	JIS K-7114 5cm x 5cm Size of Specimen: Dipped for 168 hrs
Sulfuric Acid (10%)	○	○	
Acetic Acid (5%)	○	○	
Sodium Hydroxide (10%)	○	○	
Aqueous Ammonia (10%)	○	○	
Ethyl Alcohol (50%)	△	△	
Acetone (95%)	△	△	
Benzene (95%)	✖	✖	
Formalin (95%)	○	○	

** ○ Good △ Average ✖ N/G

Size and Packing Information				
Size	Thickness	0.5	mm	
	Width	137	cm	
	Roll	20	m	
Color	Clear Transparency		-	
Material of the Film	PVC		-	
Material of the Core	Paper		-	
Core Diameter	3	inch		

Part Number: M11-Y-001

Specifications					
Descriptions		Front Side	Back (Adhe)	Unit	Test Method
Surface Resistivity		10e ⁸ ~ 10e ¹⁰	10e ⁸ ~ 10e ¹⁰	ohm	ASTM D-257
Volume resistivity		10e ⁷ ~ 10e ⁸	10e ⁷ ~ 10e ⁸	ohm/cm	
Friction Electrocharge		Less than 50	Less than 50	Voltage	Electrostatic Field Meter
Decay Time	5000V->500V	Less than 0.5	Less than 0.5	Sec.	MIL-B-81705C
Tensile Strength	MD	1.9		kg/mm ²	ASTM D-882
	TD	1.9			
100% Modulus	MD	1.1		kg/mm ²	
	TD	1.8			
Elongation	MD	170		%	
	TD	210			
Heat Shrinkage		Less than 5		%	Internal Method (60°C x 30min in H2O)

Resistance to Chemicals			
Chemicals	Front Side	Back	Test Method
Hydrochloric Acid (10%)	○	○	JIS K-7114 5cm x 5cm Size of Specimen: Dipped for 168 hrs
Sulfuric Acid (10%)	○	○	
Acetic Acid (5%)	○	○	
Sodium Hydroxide (10%)	○	○	
Aqueous Ammonia (10%)	○	○	
Ethyl Alcohol (50%)	△	△	
Acetone (95%)	△	△	
Benzene (95%)	✖	✖	
Formalin (95%)	○	○	

** ○ Good △ Average ✖ N/G

Size and Packing Information			
Size	Thickness	0.2	mm
	Width	120	cm
	Roll	10	m
Color	Clear Transparency		-
Material of the Film	PVC		-
Material of the Core	Paper		-
Core Diameter	3		inch



Part Number: M11-Y-002t

Specifications					
Descriptions		Front Side	Back	Unit	Test Method
Surface Resistivity		10e ⁸ ~ 10e ¹⁰	10e ⁸ ~ 10e ¹⁰	ohm	ASTM D-257
Volume resistivity		10e ⁷ ~ 10e ⁸	10e ⁷ ~ 10e ⁸	ohm/cm	
Friction Electrocharge		Less than 50	Less than 50	Voltage	Electrostatic Field Meter
Decay Time	5000V->500V	Less than 0.5	Less than 0.5	Sec.	MIL-B-81705C
Tensile Strength	MD	1.9		kg/mm ²	ASTM D-882
	TD	1.9			
100% Modulus	MD	1.1		kg/mm ²	
	TD	1.8			
Elongation	MD	170		%	
	TD	210			
Heat Shrinkage		Less than 5		%	Internal Method (60°C x 30min in H2O)

Resistance to Chemicals			
Chemicals	Front Side	Back	Test Method
Hydrochloric Acid (10%)	○	○	JIS K-7114 5cm x 5cm Size of Specimen: Dipped for 168 hrs
Sulfuric Acid (10%)	○	○	
Acetic Acid (5%)	○	○	
Sodium Hydroxide (10%)	○	○	
Aqueous Ammonia (10%)	○	○	
Ethyl Alcohol (50%)	△	△	
Acetone (95%)	△	△	
Benzene (95%)	✖	✖	
Formalin (95%)	○	○	

** ○ Good △ Average ✖ N/G

Size and Packing Information			
Size	Thickness	0.2	mm
	Width	120	cm
	Roll	10	m
Color	Clear Transparency		-
Material of the Film	PVC		-
Material of the Core	Paper		-
Core Diameter	3		inch



P-PSF (Polstar-Strip Door Curtain Film)

Polstar Strip Door Curtain Film is recommendable to be installed at the gates or the entrances of factories that are frequently opened and closed. It saves energy by keeping the temperature of the factories. It also prevents wind, insects and any foreign materials from coming inside of the factories. General purpose of strip door curtain film, cold resistant strip door curtain film, anti-insect strip door curtain film and anti-static strip door curtain film are available.



M16-Y-000 (P-PSF)

• Conductive Rope



M14-Y-000

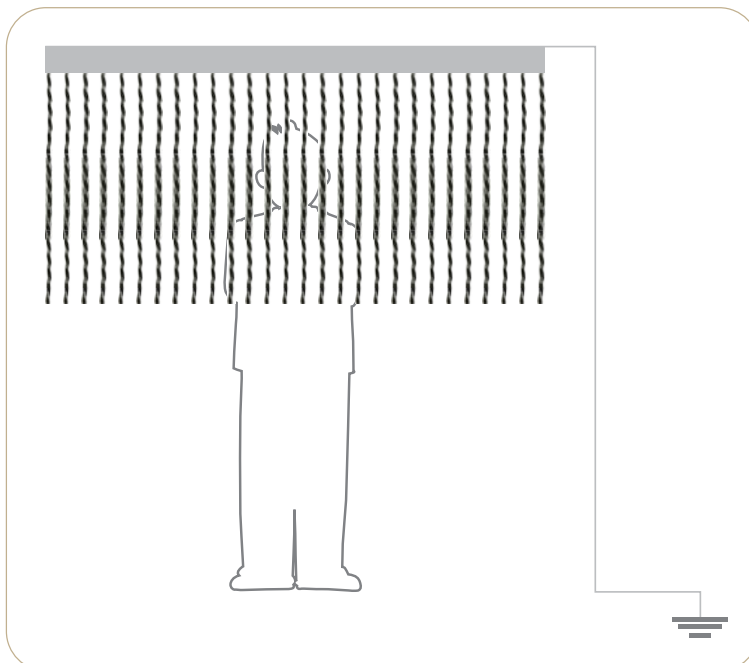


Color: Black & White mixed
Composition: Polypropylene - 93%
Stainless fiber - 7%
Weight: 9 grams/meter
Dia: 7mm
Surface Resistivance: $10e3 \sim 5$ ohm
Packing: 100 yards/hank

This item is designed to make a blind curtain for grounding path of static charges built up on human body and transport equipment. It is quick and easy way to remove the static charges by simple touch of the ropes.

Applications

- Storage of ESD sensitive products.
- Entrance of assembly lines
- EPA area



● Marking Tapes

Marking Tapes have mainly 3 different kinds, which are ESD Marking Tape, ESD Marking Tape with Printings and ESD Floor Marking Tape. All of them have ESD properties on both adhesive and back sides. They barely generate very low particles by adopting plastic core and lint free film.

Applications

- Indication of "ESD Protected Area", "ESD Controlled Area", "ESD Safe Area"
- Color coding
- Safety Markings

ESD Marking Tape

PVC tape with antistatic treatment on both sides



M03-T-000 (PT-CMT)

Color: Green, Blue, Red, Yellow, White
Surface Resistance: $10e7 \sim 10e9$ ohm
Thickness: $140\mu m$
Size: 1/2", 1", 3/4", 2", 4" x 33m/roll, 1,000mm x 33m(Jumbo roll)
Packing: 25mm x 33m / 60rls, 50mm x 33m / 30rls



- Antistatic treatment
- PVC($110\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($30\mu m$)

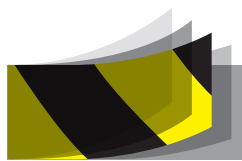
ESD Marking Tape with Printings

PET laminated PVC tape with printings and antistatic treatment on both sides



M04-T-000 (PT-CMP)

Color: Green, Blue, Red, Yellow, White, Black&Yellow
Surface Resistance: $10e7 \sim 10e9$ ohm
Thickness: $145\mu m$
Size: 1/2", 1", 3/4", 2", 4" x 33m/roll, 1,000mm x 33m(Jumbo roll)
Packing: 25mm x 33m / 60rls, 50mm x 33m / 30rls



- Antistatic treatment
- PET($15\mu m$)
- ESD logo printed PVC ($100\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($30\mu m$)

ESD Floor Marking Tape

PET laminated PVC printed tape with ESD Symbol and "ESD Protected Area"



M05-T-000 (PT-EMT)

Color: Black printing on yellow
Surface Resistance: $10e7 \sim 10e9$ ohm
Thickness: $145\mu m$
Size: 50mm x 33m/roll
Packing: 50mm x 33m / 30rls



- Antistatic treatment
- PET Film($15\mu m$)
- Printed PVC Film (ESD symbol and "ESD Protected Area") ($100\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($30\mu m$)

• ESD Packing Tapes

ESD Packing Tapes were developed to protect static sensitive products from static electricity generated by triboelectricity when they are unrolled or removed from various objects our ESD packing tapes relatively generate very low static voltage while normal tapes generate about over 1KV to 9.5KV to 14KV under the same conditions.

Applications

- Bundle of DIP IC Tube
- Seal Static Shielding Bag
- Pack Conductive IC Tray
- Pack Wafer Carrier
- Attach a Note in Cleanroom
- EMI Shielding
- Holes or Connector Pins
- Covers for External Plugs

Antistatic Utility Tape(Standard)

Metallized PET film with antistatic acrylic adhesive



M01-T-000 (NAT-801)

Surface Resistance: $10e7 \sim 10e9$, Back- $10e11 \sim 10e12$ ohm
 Thickness: $50\mu m$
 Size: 1/2", 1", 3/4", 2" x 50m/roll, 1200mm x 50m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Metallized PET($25\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($25\mu m$)

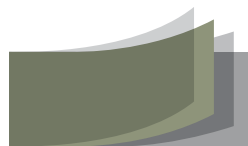
Antistatic Utility Tape(ESD on both Sides)

Metallized PET film with antistatic acrylic adhesive



M35-T-000 (NAT-801)

Surface Resistance: $10e7 \sim 10e9$, Back- $10e7 \sim 10e9$ ohm
 Thickness: $50\mu m$
 Size: 1/2", 1", 3/4", 2" x 50m/roll, 1200mm x 50m, 100m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Antistatic treatment
- Metallized PET($25\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($25\mu m$)

Antistatic Utility Tape(Standard/Halogen free)

Metallized PET film with antistatic acrylic adhesive



M38-T-000 (NAT-801)

Surface Resistance: $10e7 \sim 10e9$, Back- $10e11 \sim 10e12$ ohm
 Thickness: $50\mu m$
 Size: 1/2", 1", 3/4", 2" x 50m/roll, 1200mm x 50m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Metallized PET($25\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($25\mu m$)

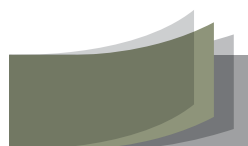
Antistatic Utility Tape(ESD on both Sides/Halogen free)

Metallized PET film with antistatic acrylic adhesive



M39-T-000 (NAT-801)

Surface Resistance: $10e7 \sim 10e9$, Back- $10e7 \sim 10e9$ ohm
 Thickness: $50\mu m$
 Size: 1/2", 1", 3/4", 2" x 50m/roll, 1200mm x 50m, 100m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls

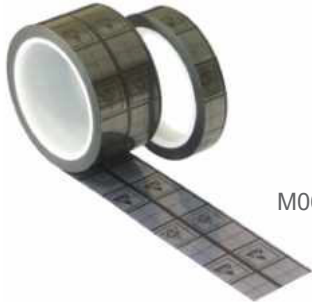


- Antistatic treatment
- Metallized PET($25\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($25\mu m$)

9 Tapes

Antistatic Grid Tape

Metallized PET film with ESD symbol and carbon grid printing



M06-T-000 (PT-CGT)

Surface Resistance: $10e7 \sim 10e9$, Back- $10e8 \sim 10e9$ ohm
 Thickness: $50\mu m$
 Size: 1/2", 1", 3/4", 2", x 50m/roll, 1000mm x 50m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Carbon Printing
- Metalized PET($25\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($25\mu m$)

ESD Control Tape

Cellulose based synthetic film with antistatic acrylic adhesive



M02-T-000 (NAT-803)

Surface Resistance: $10e8 \sim 10e9$, Back- $10e10 \sim 10e11$ ohm
 Thickness: $55\mu m$
 Size: 1", 2", x 50m/roll, 600mm x 50m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Cellulose film ($30\mu m$)
- Antistatic acrylic adhesive($25\mu m$)

ESD Control Tape with Printings

Cellulose based synthetic film with antistatic acrylic adhesive & ESD logo printings



M26-T-000

Surface Resistance: $10e8 \sim 10e9$, Back- $10e10 \sim 10e11$ ohm
 Thickness: $55\mu m$
 Size: 1", 2", x 50m/roll, 600mm x 50m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rolls



- Cellulose film ($30\mu m$)
- Antistatic acrylic adhesive($25\mu m$)

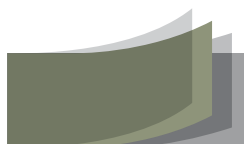
Antistatic Clear Tape

Antistatic transparent PET film with antistatic acrylic adhesive



M07-T-000 (PT-EPT)

Surface Resistance: $10e8 \sim 10e9$, Back- $10e7 \sim 10e8$ ohm
 Thickness: $55\mu m \pm 5$
 Size: 1/2", 1", 3/4", 2", x 50m/roll, 1000mm x 50m(Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Antistatic treatment
- PET film ($25\mu m$)
- Antistatic treatment
- Antistatic acrylic adhesive($30\mu m$)

9 Tapes

Antistatic OPP Tape

Antistatic treated OPP film tape with rubber adhesive



M20-T-000

Features

- Keep semi-permanent antistatic properties
- Strong adhesive power
- Environment friendly material

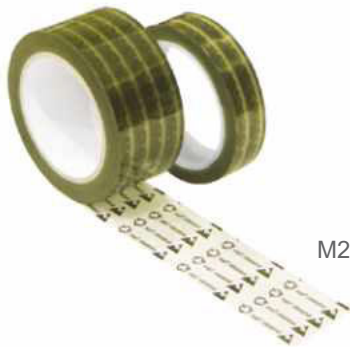
Surface Resistance: $10e11 \sim 10e12$, Back- $10e7 \sim 10e10$ ohm
 Thickness: 67 ± 5 (Film: $40 \mu m$)
 Size: 1", 2", x 50m/roll, 1000mm x 50m (Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Antistatic treatment
- OPP ($40 \mu m$)
- Antistatic rubber adhesive ($20 \mu m$)

Antistatic OPP Tape with Printings

Antistatic treated ESD logo printed OPP tape with rubber adhesive



M21-T-000

Features

- Keep semi-permanent antistatic properties
- Strong adhesive power
- Environment friendly material

Surface Resistance: $10e9 \sim 10e11$, Back- $10e9 \sim 10e11$ ohm
 Thickness: 67 ± 5 (Film: $40 \mu m$)
 Size: 1", 2", x 50m/roll, 1000mm x 50m (Jumbo roll)
 Packing: 25mm x 50m / 100rls, 50mm x 50m / 50rls



- Antistatic treatment
- ESD Logo printed OPP ($40 \mu m$)
- Antistatic rubber adhesive ($27 \mu m$)

● Peeling Tape



Features

- Special purpose tape for peeling back grinding tapes for wafer
- Suitable for peeling of back grinding tape without damaging wafer
- Excellent peeling ability
- Two kinds of peeling tapes: rubber adhesive and hot melt adhesive types

Properties	Unit	PT-SHH	PT-ELH	PT-PRU
Film material	-	PET	PET	PET
Adhesive	-	Hot melt type	Hot melt type	Rubber adhesive
Film Thickness	μm	25	50	50
Adhesive Thickness	μm	50	50	30
Total Thickness	μm	75	100	80
Adhesion	gf/25mm	2000	2200	2200
Applications	-	PE, PP B/G tape	EVA B/G tape	PE, PP B/G tape
Construction		PET film	PET film	PET film
		Primer	Primer	Rubber adhesive
		Hot melt Adhesive	Hot melt Adhesive	
Heat seal temperature	$^{\circ}C$	180~200	235	-
Heat seal pressure	kg/cm ²	1~3	1~3	-
Heat seal time	sec	1~3	1~3	-
Size		25, 50, 75mm x 200m(or 300m)	25, 50, 75mm x 200m	25, 50, 75mm x 100m

9 Tapes

• Masking Tapes

HT PET Masking Tape

High temperature PET film with silicone adhesive



M12-T-000 (PT-PMT)

Features

- Heat resistance: 200°C

Applications

- Suitable for using as flash breaker tape in the Aerospace Industry
- Photo splicing tape for attaching film to Leader Card on all automatic photo developing and printing machine.

Color: Green
Thickness: 90µm
Size: 10mm, 20mm, 25mm, 50mm x 33, 50m/roll,
750(710)mm x 33m / 1080(1040)mm(Jumbo roll)
Packing: 25mm x 33m / 60rls, 50mm x 33m / 30rls



- High temperature PET film (50µm)
- Silicone adhesive(40µm)

PET Masking Tape

PET film with silicone adhesive coating



M18-T-000 (PT-PST)

Features

- Heat resistance: 180°C

Applications

- JIG, PCB fixation
- Protect components or devices from foreign substances during SMT process.

Thickness: 65µm
Color: Red, Green
Size: 10mm, 20mm, 25mm, 50mm X 50m/roll,
1080(1040)mm / 750(710)mm x 50m(Jumbo roll)
Packing: 25mm x 50m / 60rls, 50mm x 50m / 30rls



- PET film (25µm)
- Silicone adhesive(40µm)

Polyimide Tape



M17-T-000 (PT-PIT)

Features

- Heat resistance: 250°C
- High Temperature Range
- No Migration /High Tack adhesive

Thickness: 65µm
Size: 10mm, 20mm, 25mm, 50mm x 33m/roll, 1000mm x 33m(Jumbo roll)
Packing: 25mm x 33m / 100rls, 50mm x 33m / 50rls



- Polyimide film(25µm)
- Silicone adhesive(40µm)

Antistatic Polyimide Tape

Polyimide film with thermal resistant silicone adhesive



M13-T-000 (PT-APT)

Features

- Heat resistance: 250°C
- Flame retardant
- Excellent heat, solvent and chemical resistance

Applications

- Masking PCB during wave soldering or solder dip process

Surface Resistance(Back side): 10e5~10e8 ohm
Thickness: 65µm
Size: 10mm, 20mm, 25mm, 50mm x 33m/roll, 1000mm x 33m(Jumbo roll)
Packing: 25mm x 33m / 60rls, 50mm x 33m / 30rls



- Antistatic treatment
- Polyimide film(25µm)
- Silicone adhesive(40µm)

• Double Side Tapes

Double Side PI Tape

Polyimide film with double side coating with thermal resistant silicone adhesive



M19-T-000 (PT-SDP)

Features

- Heat resistance: 250°C
- Excellent heat, solvent and chemical resistance

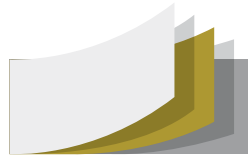
Applications

- Fixing electric parts and components

Thickness: 100µm

Size: 10mm, 20mm, 25mm x 5 or 10m/roll, 520(490)mm x 5 or 10m (Jumbo roll)

Packing: 25mm x 5 or 10m / 60rls, 50mm x 5 or 10m / 30rls



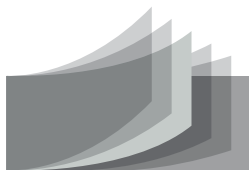
- PET liner
- Silicone adhesive(40µm)
- Polyimide film(25µm)
- Silicone adhesive(35µm)
- PET liner

Antistatic Double Side Tape

Antistatic treated PET film with double side acrylic adhesive coating



M16-T-000 (PT-ADT)



- Antistatic acrylic adhesive(35µm)
- Antistatic treatment
- PET film(25µm)
- Antistatic treatment
- Antistatic acrylic adhesive(35µm)
- Paper liner(120µm)
- Size 25, 50mm x 50mm

Double Side Non-Woven Tape

Non-woven fabric with double side acrylic adhesive coating



M15-T-000 (PT-DNW)



- Acrylic adhesive(30µm)
- Non-woven fabric(40µm)
- Acrylic adhesive(30µm)
- Paper Liner(120µm)
- Size 25, 50mm x 50mm

Double Side PET Tape

PET film with double side acrylic adhesive coating



M14-T-000 (PT-DPT)



- Acrylic adhesive(20µm)
- PET film(15µm)
- Acrylic adhesive(20µm)
- Paper Liner(120µm)
- Size 25, 50mm x 50mm

Features

- Bonding jobs in wide range of temperatures and with various foam materials including embossed plastic surface.
- Stable adhesive strength to various materials, like metal, plastics, etc.

9 Tapes

• Aluminum Tape

Aluminum Foil, one face coated with acrylic based adhesive



M25-T-000

Features

- Temperature range: 5~125 degree C.

Applications

- Radiation of heat for home appliances

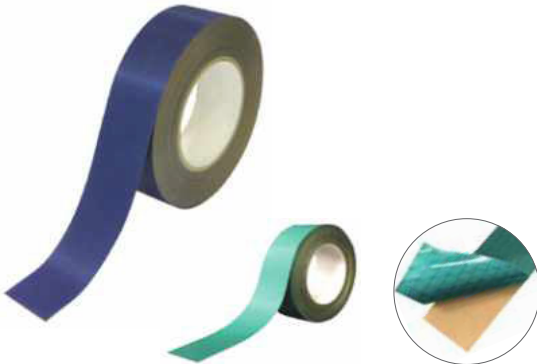
Color: Silver
 Thickness: 60μm(AL foil, adhesive) + 130um(releasing paper)
 Size: 25mm x 50m / 50mm x 50m / 1080mm x 50m (Jumbo roll)
 Packing: 25mm x 50m / 40rolls, 50mm x 50m / 20rolls



- Aluminum foil(40μm)
- Acrylic adhesive(20μm)
- Paper liner(130μm)

• ESD Fabric Tape

Conductive 5mm grid fabric with acrylic adhesive



M24-T-000

Features

- ESD properties on both sides
- Soft and flexible
- No lint generation
- No residue
- Homogenous structures

Applications

- Cover for the edges of the ESD EVA Mats, Pad and other Mats

Surface Resistance: 10e6~10e8, Back-10e5~10e7 ohm
 Thickness: 200μm
 Adhesive level(gf/25mm): 900(SUS), 1000(PC)
 Size: 40mm x 30m, 1000mm x 20, 50, 100m(Jumbo roll)
 Packing: 40rolls/carton



- ESD Fabric(5mm grid)
- Acrylic adhesive
- Releasing paper

• Removal Tape

Transparent PET film with low silicone based adhesive tape



M27-T-000

Features

- Very low removal adhesive
- Excellent wetting property
- Easy to remove and residue free after removal

Applications

- Protect the outer frame of LCD TV, Monitor, etc.

Color: Transparent
 Thickness: 50um +/- 4um
 Adhesive level(gf/25mm): 30 +/- 10
 Holding power(mm/hr): MAX. 0.5
 Size: 10mm, 20mm, 25mm, 50mm, etc. x 50m, 960mm x 50m(Jumbo roll)



- PET film(38um)
- Silicone adhesive(12um)

• Protection Tape

PET film with as acrylic adhesive and liner



M30-T-000

Applications

- Protect TSP(front face) in process

Color: Transparent
 Surface resistance: $10e9 \sim 10e11$ ohm
 Thickness: 45um
 Adhesive level: 5gf/in
 Size: 1080(1040)mm x 100 or 200m



- PET(38um)
- AS Acrylic Adhesive(7um)
- White PET Liner(50um)



M31-T-000

Applications

- Protect TSPs(front face) in process

Color: Transparent
 Surface resistance: $10e9 \sim 10e11$ ohm
 Thickness: 55um
 Adhesive level: 25gf/in
 Size: 1080(1040)mm x 100 or 200m



- PET(36um) + Antistatic treatment
- Silicone Adhesive(19um)
- White Fluorosilicone Liner(50um)



M32-T-000

Applications

- Protect TSPs(front face) in process

Color: Transparent
 Surface resistance: $10e9 \sim 10e11$ ohm
 Thickness: 70um
 Adhesive level: 5gf/in
 Size: 1080(1040)mm x 100 or 200m



- PET(50um)
- AS Acrylic Adhesive(20um)
- Transparent PET Liner(50um)



M34-T-000

Applications

- Protect finished Injection products

Color: White
 Surface resistance: $10e9 \sim 10e11$ ohm
 Thickness: 45um
 Adhesive level: 5gf/in
 Size: 1080(1040)mm x 100 or 200m



- PET(38um)
- AS Acrylic Adhesive(7um)
- Transparent PET Liner(75um)



M33-T-000

Applications

- Protect finished TSPs

Color: Transparent
 Surface resistance: $10e9 \sim 10e11$ ohm
 Thickness: 165 m
 Adhesive level: 3gf/in
 Size: 1080(1040)mm x 100 or 200m



- PET(128um)
- Antistatic treatment
- Silicone Adhesive(37um)
- Black PET Liner(75um)

• Powerless Eco Ionizer

Can you imagine to neutralize the charged insulator with the ionizer without electric power supply?



M39-E-002

All ESD programs should include relative methods for grounding in each work area. Even though all personnel, worktables and floors are properly grounded, there are still some insulators in the manufacturing sites. So, relevant neutralization for the insulators is essential to maintain the low percentage of errors because insulators are easily charged when they contact other materials even if the other materials are grounded. The charged insulators retain the charges for long periods of time as they can not provide a good pathway for the static charges.

Ionizer is one of the most common and effective equipment to eliminate the charges on insulators in manufacturing areas.

All corona typed Ionizers are required electric power and airflow sources to have their own functions. Our Powerless ECO Ionizer, however, is an exception.

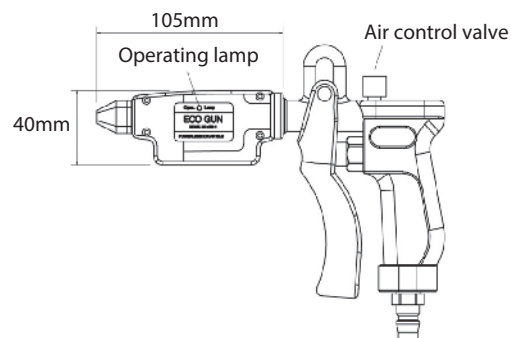
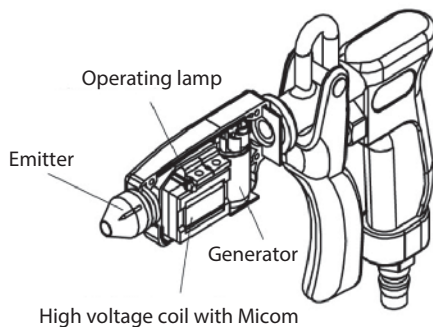
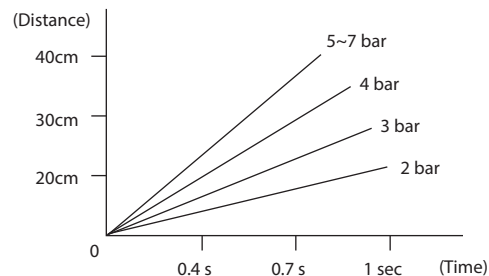
Our high technology based on long experience in this field enables us to develop an innovative Powerless ECO Ionizer, which can be operated without any electric power source.

Operating is just simple. Grip the handy Ionizer and trigger the handle, then the air will be distributed in the Ionizer, and a special generator mounted in the Ionizer will automatically be operated by high pressed air, and it will, then, generate positive and negative ions. When you release the handle, the Ionizer will be stopped immediately.

Features

- No need electric power source
- Easy operation
- Easy maintenance
- Excellent performance on neutralization

Category	Descriptions	Remark
Item Code	M39-E-002	
Ion Balance	Within $\pm 10V$	
Ion Mode	AC 14Khz	
Air Pressure	4~7 Bar	
Decay time	0.6 sec.	(+/- 1,000v to 100v)
Effective Distance	10cm~50cm	
Life time	3000~5000 hrs	
Weight	200g	



10 Equipment & Tools



M02-E-029



M02-E-030



M02-E-008

Category	Descriptions		
Part Number	M02-E-029	M02-E-030	M02-E-008
Model No.	SBL-12A	SBL-12B	SBL-15S
Input Power	DC 24V, Adaptor (AC110~220V, 50/60Hz)		
Power Consumptions	7.7W	7.3W	35W
Ion-Generation Method	Steady-State DC		
Air Blow volume	4.25m ³ /min		4.84m ³ /min
Noise Level(dB)	62dB(1000m)		
Ion Balance, 600mm, max air flow	Within ± 5V (600mm)		
Ozone(O3) Concentration	≤ 0.05ppm		≤ 0.005ppm
Operation Circumstance	0°C ~ +50°C(32°F ~ 122°F), 35% ~ 85% RH		
Weight	1.42kg		2.8kg
Material	EGI		Aluminum/Stainless Steel
Electrode Material	Tungsten(standard) / Titanium(option)		
Mounting Method	Desk Top		
Function	Tip Cleaning, Auto Tip Cleaning		Tip Cleaning, 2 Steps Fan Speed, Ion Balance Display
Alarm Function	Ion Unbalance Alarm, Fan Alarm		Ion Unbalance Alarm
Interface	Remote On/Off, Run State, Alarm, RS485		Remote On/Off, Run State, RS485, Alarm
Option	RMS(Real Monitoring System)		RMS(Real Monitoring System)
Warranty	1 year		



M02-E-021 (IPI-310A)



M02-E-020 (IPI-310S)



M02-E-027 (IPI-310B)

Category	Descriptions				
Part Number	M02-E-021	M02-E-026	M02-E-020	M02-E-027	M02-E-028
Model No.	IPI-310A	IPI-310A(Brush)	IPI-310S	IPI-310B	IPI-322S
Input voltage	DC24V (Adaptor Input voltage AC 75-275V)max., 6Watts			AC75~230V max., 8Watts	AC75~275V, 50/60Hz, 40Watts maximum
Method of ion generation	Steady-State DC				
Ion Generation	adjustable	adjustable	Automatic control	Automatic control	adjustable
Wind velocity	High: 105cfm, Low: 58cfm		High: 48cfm, Low: 30cfm	High: 105cfm, Low: 58cfm	
Ion balance	±5V (in 500mm)	±5V (in 500mm)	±5V (in 300mm)	±5V (in 500mm)	±3V (in 600mm)
Decay time	5 sec.(in 600mm)	3 sec.(in 300mm)	3 sec.(in 300mm)	3 sec.(in 300mm)	5 sec.(in 600mm)
Material(Electrode)	Titanium		Titanium	Titanium	Tungsten(99.99%)
Material(Body)	ABS	ABS	SUS	ABS	Aluminum
Size(mm)	157(W) × 54(D) × 210(H)		157(W) × 88(D) × 210(H)	98(W) × 45(D) × 142(H)	430(W) × 169(D) × 70(H)
Weight	1.05kg	1.1kg	1.5kg	570g	2.54kg
Warranty	18 months				

10 Equipment & Tools

CE



M02-E-003 (SBL-20W)

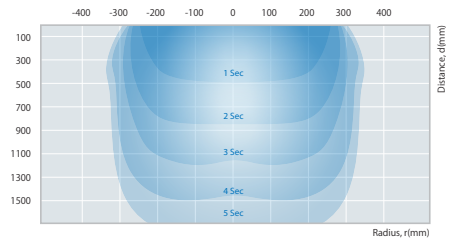
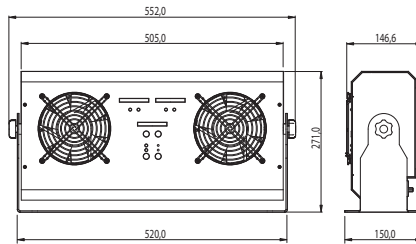
SBL-20W, SBL-30W

- Ion Balance within $\pm 2V$ (at 60cm distance, max. air flow)
- EMI(Electro-Magnetic Interference) and EMS(Electro-Magnetic Susceptibility)
- Automatic tip cleaning function
- Various Interfaces with automated factories(PLC, Computer)
- Ion unbalance alarm
- RMS(Real Monitoring System)
- Remote control
- Ion bar graph
- Wide range and long distance

CE



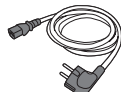
M02-E-023 (SBL-30W)



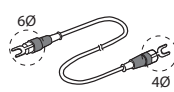
Basic Component



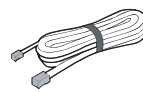
Body
SBL-30W
1ea



Power Cable
SPC-MT-1-001
AC 100~240V, 50/60Hz
1.8m / 1ea



Ground Cable
SGC-XN-1-001
1m / 6Ø, 4Ø / 1ea



UTP Cable (Option)
SUC-MT-1-001
10m / 1ea



Remote Controller
SBL-RC2
1ea

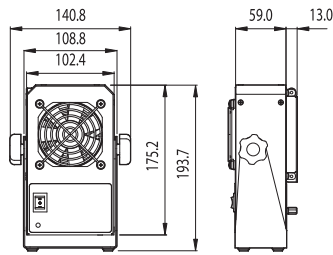
RMS Controller
Single Cable
Power Extension

Category	Descriptions	
Part Number	M02-E-003	M02-E-023
Model	SBL-20W	SBL-30W
Input Power	AC100~220V, 50/60Hz	AC100~220V, 50/60Hz
Power Consumption	37W	50W
Ion-Generation Method	Steady-State DC	Steady-State DC
Air Blow volume	8.5m ³ / min	12.44m ³ / min
Noise Level(dB)	63dB	68dB (4Step)
Ion Balance, 600mm, max air flow	Within $\pm 5V$ (600mm)	Within $\pm 5V$
Ozone(O3) Concentration	≤ 0.005 ppm	≤ 0.05 ppm
Operation Circumstance	0°C ~ +50°C(32°F ~ 122°F), 35% ~ 85% RH	
Weight	3.4kg	6.2kg
Material	Aluminum	Aluminum
Electrode Material	Tungsten	Tungsten / Titanium
Mounting Method	Desk Top	Desk Top
Function	Remote Control, 4 Step Fan Speed, Auto Tip Cleaning, Ion Balance Display	Remote Control, 4 Step Fan Speed, Auto Tip Cleaning, Ion Balance Display
Alarm Function	Ion Unbalance Alarm, Fan alarm	Ion Unbalance Alarm, AlarmBuzzer
Interface	Remote On/Off, Run State, Tip Cleaning, Alarm(Ion Unbalance), RS485	
Option	RMS(Real Monitoring System)	
Warranty	1 year	

• Miniature Ion Blower



M02-E-004 (SBL-18)



SBL-18/SBL-108



M02-E-005 (SBL-108)



M02-E-009 (SMB-60)

SBL-18, SBL-108

- Ion balance within $\pm 10V$ (SBL-108), $30V$ (SBL-18) (at 60cm distance)
- EMI(Electro-Magnetic Interference) and EMS(Electro-Magnetic Susceptibility)
- Various interfaces with automated factories(PLC, Computer)
- RMS(SBL-108, Option)
- Various input voltages(AC110/220, 50/60Hz, DC24V)
- One touch front fan cover off for tip cleaning

SMB-60

- Ion Balance: within $\pm 20V$
- Ultra slim and light weight
- High Frequency AC type
- Easy maintenance

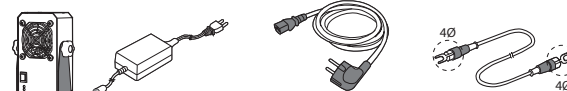
SBL-18

SBL-108

Basic Component



Basic Component



Additional Component



Body
SBL-108
1ea

Adapter
SAD-MT-3-001
INPUT:100~240VAC / 50~60Hz
OTPUUT:DC24V
3m / 1ea

Power Cable
SPC-MT-1-001
AC 100~240V, 50/60Hz
1.8m / 1ea

Ground Cable
SGC-XN-1-001
1m / 40, 40 / 1ea

UTP Cable (Option)
SUC-MT-2-001
10m / 1ea

RMS Controller

Single Cable

Category	Descriptions		
Part Number	M02-E-004	M02-E-005	M02-E-009
Model	SBL-18	SBL-108	SMB-60
Input Power	AC110/220V, 50/60Hz	Adapter(AC110~240V, 50/60Hz, DC24V)	DC24V (Adaptor AC100~220V, 50/60Hz)
Power Consumptions	18W	22W	18W
Ion-Generation Method	DC Type	Steady-State DC	High Frequency AC
Air Blow Volume	1.9m ³ /min	1.9m ³ /min	1.1 m ³ /min
Noise Level(dB)	54dB	54dB	51dB
Ion Balance	Within $\pm 30V$ (600mm)	Within $\pm 10V$ (600mm)	Within $\pm 20V$ (in 200mm)
Ozone(O3) Concentration	≤ 0.005 ppm	≤ 0.005 ppm	≤ 0.005 ppm
Operation Circumstance	0°C ~ +50°C(32°F ~ 122°F), 35% ~ 85% RH		
Weight	0.8kg	0.8kg	1.42kg
Material	EGI	EGI	EGI
Electrode Material	Tungsten / Titanium	Tungsten / Titanium	Tungsten / Titanium
Mounting Method	Desk Top	Desk Top	Desk Top
Function	2Steps Fan Speed	2Steps Fan Speed	Volume Fan Speed
Alarm Function		Ion Unbalance Alarm	H/V abnormal Alarm
Interface		Remote On/Off, Run State, RS485, Alarm(Ion Unbalance), Power Input	Alarm(H/V abnormal)
Option		RMS(Real Monitoring System)	-
Warranty	1 year	1 year	1 year

10 Equipment & Tools

• Automatic Tape Cutter



M14-E-007 (RT-3700)

- Semiautomatic type
(Press button after using all tapes put on disk)
- Only adhesive product can be used
- Long life time
- Automatic cutting and movable sensor



M14-E-005 (RT-7000)

- Fast tape feed and cutting speed.
- Quantity-count function
- Self-diagnosis display
- Emergency alarm
- Build-in Tweezers, Oil, and Separator
- One touch exchangeable knife set
- Automatically apply lubricant to the knife edge.
- Enable to use 2 Rolls at the same time
- Both non-adhesive and adhesive products can be used.
- Preset function (Max 6 different tape lengths)



M14-E-011

Features

- Easy to exchange the knife set
- Enable to use 2 rolls at the same time
- Enable to choose full automatic mode or semi-automatic mode
- Enable to use various adhesive and non-adhesive tapes
- The allowed width is up to 150 mm



M14-E-008 (RT-7700)

- The same function of RT-7000
- Easy to disassemble and maintain
- Programming function



M14-E-010 (RT-9000)

- The same function of RT-7000
- Easy to tear off the tape as the tape end is folded automatically. (option)



M14-E-006 (RT-8000)

- The same function of RT-7000
- Preset function (Max 12 different tape lengths)
- Programming function

Model	M14-E-007 (RT-3700)	M14-E-005 (RT-7000) M14-E-008 (RT-7700) M14-E-006 (RT-8000)	M14-E-010 (RT-9000)	M14-E-009	M14-E-011
Tape Width	3~25mm	6~60mm	6~60mm	10mm ~ 80mm	50mm ~ 150mm
Cut Length	15~70mm	5~999mm	General: 5~999mm Fold: 15~999mm	10mm ~ 999mm	10mm ~ 999mm
Power	AC 110/220V, 50/60Hz, 40W	AC 110~230V, 50/60Hz, 25W	AC 110~230V, 50/60Hz, 25W	AC 220V, 50/60Hz	
Size	126(W) x 258(D) x 150(H)	115(W) x 215(D) x 130(H)	116(W) x 221(D) x 148(H)	190 (W) x 230 (L) x 140 (H)	265(W) x 230 (L) x 150 (H)
Weight	2.2 KG	2.5 KG	2.5 KG	3.5 KG	6.5 KG

• ESD CR Chair



M22-E-001



M22-E-002



M22-E-003



M22-E-004

Descriptions	Part Number	M22-E-001	M22-E-002	M22-E-003	M22-E-004
Material	Seat	PVC + PU Film	PVC + PU Film	PVC + PU Film	PVC + PU Film
	Back	PVC + PU Film	Conductive PP	-	PVC + PU Film
	Body	Aluminum + Metal with hard chrome coating			
	Caster	Metal	Metal	Metal	Metal
Color		Blue	Body: Conductive Black Pad: Blue or Black	Blue or Black	Blue or Black
Surface Resistance (ohm)		10e6-10e8	10e6-10e8	10e6-10e8	10e6-10e8
Resistance to Ground (ohm)		10e6-10e8	10e6-10e8	10e6-10e8	10e6-10e8
Back Seat Size (W X H)		45cm X 40cm	44cm x 55cm	-	39cm x 25cm
Seat Size (W X D)		48cm X 42cm	46cm x 42cm	48cm x 42cm	41cm x 37cm
Height(bottom to Seat)(Adjustable)		45cm ~ 58cm	50cm ~ 59cm	45cm ~ 58cm	45cm ~ 61cm
Filter system		Air Exhausted from sealed cushion is passed through HEPA filter			
Cleanroom Class		1000 ~ 10000	100 ~ 1000	1000 ~ 10000	1000 ~ 10000



M22-E-005



M22-E-007



M22-E-008

Descriptions	Part Number	M22-E-005	M22-E-007	M22-E-008
Material	Seat	Antistatic PU foam	ESD PU leather	ESD PU leather
	Back	Antistatic PU foam	ESD PU leather	ESD PU leather
	Body	Aluminum + Metal with hard chrome coating	Aluminum + Metal with hard chrome coating	Aluminum + Metal with hard chrome coating
	Caster	Metal	Chrome coating to aluminum diecasting	Chrome coating to aluminum diecasting
Color		Black	Blue or Black	Blue or Black
Surface Resistance (ohm)		10e8-10e10	10e5-10e9	10e5-10e9
Resistance to Ground (ohm)		< 10e9	-	-
Back Seat Size (W X H)		37cm x 25cm	44cm x 50cm	44cm x 50cm
Seat Size (W X D)		41.5cm x 40cm	45cm x 40cm	45cm x 40cm
Height(bottom to Seat)(Adjustable)		44cm ~ 60cm	47cm ~ 61cm	44cm ~ 55cm
Cleanroom Class		1000	1000 ~ 10000	1000 ~ 10000

10 Equipment & Tools



M73-E-001



M73-E-002



M73-E-003

Descriptions	Part Number	M73-E-001	M73-E-002	M73-E-003
Material	Seat	ESD Fabric	ESD Fabric	ESD Fabric
	Backrest	ESD Fabric	ESD Fabric	ESD Fabric
	Support(Backrest)	Chrome Plating metal	Metal with hard chrome coating	Metal with hard chrome coating
	Base	Chrome Plating metal(dia. 300mm)	Chrome Plating metal(dia. 320mm)	Aluminum(dia. 320mm)
	Caster	Chrome Plating metal	Chrome Plating metal	Chrome Plating metal
Surface Resistance (ohm)		10e5-10e8	10e5-10e8	10e5-10e8
Seat (W X D)		46cm x 41.5cm	42cm x 44cm	42cm x 47cm
Backrest (W X H)		38cm x 33cm	42cm x 40cm	48cm x 46cm
Features		High quality gas spring Seat Height is adjustable Backrest support is adjustable	High quality gas spring Seat Height is adjustable Backrest support is adjustable Seat Inclination Angle	High quality gas spring Seat Height is adjustable Backrest support is adjustable Seat Inclination Angle

• ESD CR Chair Cover



Item Code: M23-E-001
 Size: 1.2T x 1,370mm x 40m ±
 Color: Navy blue, Black
 Surface resistance: < 10e10 ohm

PBC RACKS MAGAZINE



RS-335A



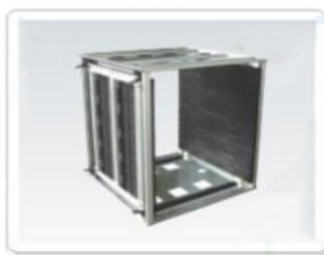
RS-335B



RS-460A



RS-535A



RS-535B



ESD Circulation Rack

Model	Overall Size (mm)	Suitable PCB Size	Top and Bottom boards material	Side of slot (Depth x width x spacing)
RS-355A	355x320x563	355x(50-250)	Metal	3x5.5x10
RS-335AG Heat-resistant type (120°C)	355x320x563	355x(50-250)	Metal	3x5.5x10
RS-355B	355x320x563	355x(50-250)	plastic	3x5.5x10
RS-460A	460x400x563	460x(100-330)	Metal	4x5.5x10
RS-460AG Heat-resistant type (120°C)	460x400x563	460x(100-330)	Metal	4x5.5x10
RS-535A	535x460x570	535x(50-390)	Metal	4x5.5x10
RS-535B	535x460x570	535x(50-390)	Metal	4x5.5x10

11 Handlings & Storages

• Conductive PC Rack



M05-H-001

Descriptions	M05-H-001
Size (W) x (L) x (H) (ID) mm	179 X 390 X 25
Pitch(mm)	16
Capacity(pcs)	25
Material	Conductive PS
Surface Resistance(ohm)	10e4 ~ 10e6
Weight(g)	500

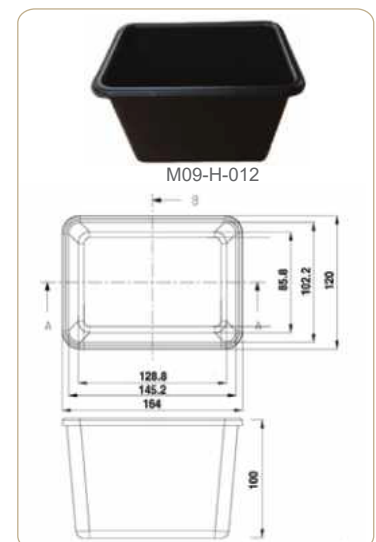
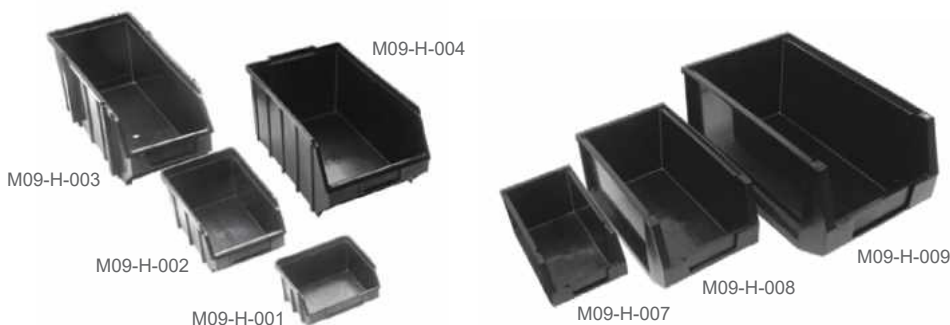
• Conductive PCB Angle Rack



M06-H-001

Descriptions	M06-H-001
Size(mm)	325 x 205 x 93
Pitch(mm)	15
Capacity(pcs)	31
Material	Conductive ABS
Surface Resistance(ohm)	10e4~10e6
Weight(g)	480

• Conductive Parts Box



Part Number	M09-H-001	M09-H-002	M09-H-003	M09-H-004	M09-H-007	M09-H-008	M09-H-009	M09-H-012
Descriptions								
Size (ID) (L) X (W) X (H)mm	92 x 76(55) x 44	90 x 141(113) x 63	128x210(162)x 112	181 x 315(285) x 150	86 x 157(130) x 76	122 x 225(195) x 109	176 x 341(280) x 141	145x86x 100
Weight(g)	48	112	342	708	142	292	732	100
Surface Resistance (ohm)	10e4 ~ 10e6							
Material	Conductive PP							

11 Handlings & Storages

• Conductive Tray



Part Number	M10-H-005	M10-H-006	M10-H-007	M10-H-008
Descriptions				
Size (W)x(L)x(H)mm	355 x 485 x 45	255 x 355 x 45	215 x 280 x 40	150 x 200 x 40
Weight(g)	412g	328g	158g	84g
Surface Resistance (ohm)	10e4~10e6			
Material	Conductive PS			

• Conductive Chip Box



Part Number	M15-H-004	M15-H-005	M15-H-006	M15-H-007	M15-H-008	M15-H-009	
Descriptions							
Size (W)x(L)x(H)mm	In	14(Dia) x 17(H)	13 x 13x 17	29 x 13 x 16	29 x 41 x 16	61 x 41 x 16	61 x 41 x 34
	Out	18(Dia) x 22(H)	16.8 x 28.8 x 23.5	32.6 x 28.8 x 23.5	32.6 x 56.5 x 23.5	64.5 x 56.5 x 23.5	64.5 x 56.5 x 41.5
Weight(g)	2	5	11	15	24	36	
Surface Resistance (ohm)	10e4 ~ 10e6						
Material	Conductive PP						

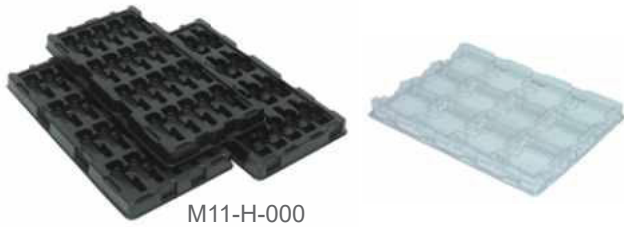
• Conductive Cabinet



Part Number	M16-H-002	M16-H-003	M16-H-004	M16-H-005	M16-H-006	M16-H-007	
Descriptions							
Size (W)x(L)x(H)mm	Drawer	73 x 146 x 32	73 x 146 x 32	122 x 212 x 62	89 x 115 x 139	139 x 134 x 189	121 x 210 x 60
	Out	82 x 150 x 41	159 x 150 x 41	260 x 218 x 72	101 x 120 x 150	151 x 140 x 200	400 x 216 x 290
Weight(g)	164	290	1030	450	860	3028	
Surface Resistance (ohm)	10e4 ~ 10e6						
Material	Conductive PP						

11 Handlings & Storages

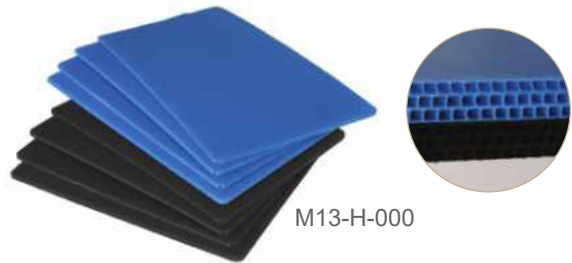
• ESD Vacuum Foaming Tray



M11-H-000

Material: Conductive black PP & PS, Transparent ESD PET
Custom sizes and designs

• Conductive Corrugated Sheet



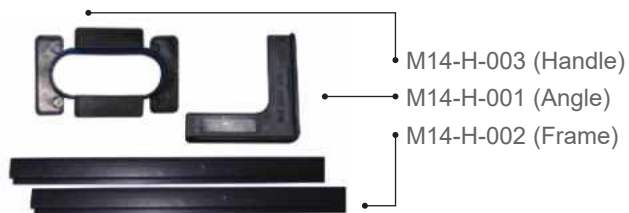
M13-H-000

Material: Conductive PP
S/R: 10e4~10e6 ohm
Thickness: 3T, 4T, 5T, 10T
Size: 1100 x 1100, 1200 x 2400, 1220 x 2440 mm

• Conductive Corrugated Box



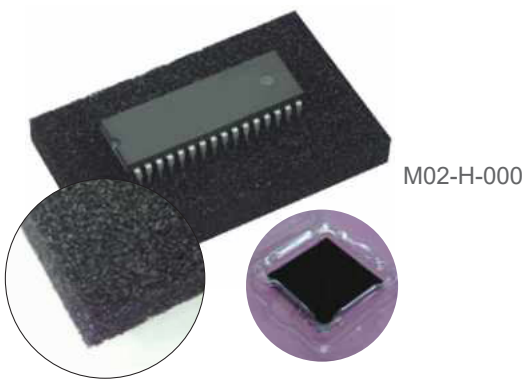
M12-H-000



Material: Conductive PP
S/R: 10e4~10e6 ohm
Custom sizes

• Conductive Foam

The high quality of cross-linked conductive foams are created when carbon-compounded plastic resin is melted and expanded by the dispersion of gas in the liquid resin. The 4 types of Foams, PE, PU, EVA and AR, are available and they can be used in ESD packaging Industries to protect sensitive IC chips and finished devices from ESD damage and outer impact during transportation and storage.



M02-H-000

Part Number	M01-H-000	M02-H-000	M03-H-000	M18-H-000
Descriptions	PE	PU	EVA	AR
Material	PE	PU	EVA	AR
Density(g/cm ³)	0.045	0.041	0.16	0.045
Surface Resistance (ohm)	10e4~10e6			
Thickness(mm)	2~40	4,5,8,10	2~25	5~60
Size(m)	1 x 1.8	1 x 2	1 x 1.5	1.2 x 2
Weight/(m ³)	45kg	41kg	160kg	45kg

• ESD Control PP Strap



M04-H-001

Descriptions	M04-H-001
Size	0.7mm(T) x 12mm(W) x 1500m(L)
Color	Black
Surface Resistance (ohm)	10e5 ~ 10e8
Packing	2 rolls/ctn, 18 kgs/ctn

11 Handlings & Storages

• ESD Squeeze Bottle



S/R: $\leq 10e9$ ohm
Material: Polyethylene (PE)
Capacity: 60ml

Part Number	Capacity	Needle	Color
M26-H-001	60ml	16	Yellow
M26-H-002	60ml	20	Yellow
M26-H-003	60ml	26	Yellow
M26-H-004	60ml	16	Sky Blue
M26-H-005	60ml	20	Sky Blue
M26-H-006	60ml	26	Sky Blue



S/R: $\leq 10e9$ ohm
Material: Polyethylene (PE)
Capacity: 60ml

Part Number	Capacity	Color
M26-H-007	250ml	Yellow
M26-H-008	500ml	Yellow
M26-H-009	250ml	Sky Blue
M26-H-010	500ml	Sky Blue



S/R: $\leq 10e9$ ohm
Material: Polyethylene (PE)
Capacity: 60ml

Part Number	Capacity	Color
M26-H-011	250ml	Yellow
M26-H-012	500ml	Yellow
M26-H-013	250ml	Sky Blue
M26-H-014	500ml	Sky Blue



S/R: $10e4 \sim 10e10$ ohm
Material: LDPE

Part Number	Capacity	Color
M26-H-015	500ml	Yellow

11 Handlings & Storages

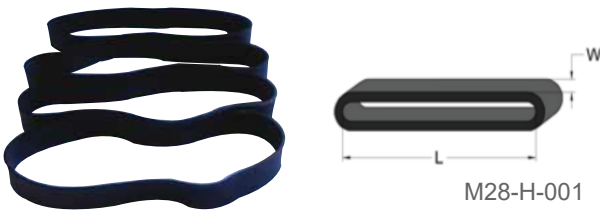
• ESD Spray Bottle



S/R: 10e4 ~ 10e10 ohm
Material: LDPE

Part Number	Capacity	Color
M27-H-001	250ml	Yellow
M27-H-002	500ml	Yellow
M27-H-003	250ml	Sky Blue
M27-H-004	500ml	Sky Blue

• ESD Rubber Band



S/R: 10e5 ~ 10e8 ohm
Size : 1.7mmT x 12mm x 120mm(0.5" x 4.75")
Color: Black
Packing: 150-170pcs/bag, kg

• ESD Strap

Black polypropylene hook and loop strap secures JEDEC trays using a D-Ring fastening system. The ESD version is designed with a metal D-Ring to insure a complete static loop. Unlike other "dipped" products that have a limited shelflife, our ESD strap has permanent ESD properties on both sides with ESD logo on the strap.



S/R: 10e9 ohm
Size : 25mm x 508mm
Color: Black
Weight: 22.7g/pc
Packing: 10pc/bag
Constructions: Hook & Loop nylon strap with a metal D-Ring

• ESD Tool Box



S/R: 10e5 ~ 10e6 ohm
Size : 255mm x 125mm x 100mm(H)

• Wrist Strap

Worksurfaces and personnel should be grounded by the proper using of Wrist Straps, ESD Shoes, Heel Grounders, ESD Clothing, etc. Polstar Wrist Straps provide the most reliable and economical pathway of ESD built up on human body to ground. Ground Cords and Coil Cords are also the major parts of safe workstation.

Wrist Strap



Anti-Allergic Wrist Strap



Dual Wire Wrist Strap



Metal Wrist Strap



		Wrist Strap	Anti-Allergic Wrist Strap	Dual Wire Wrist Strap	Metal Wrist Strap
Snap Dia		4mm, 10mm	4mm, 10mm	4mm	4mm, 7mm, 10mm
Cord Length		6', 8', 10', 12'	6', 8', 10', 12'	6', 8', 10', 12'	6', 10', 12'
Material	Wrist band	Elastic nylon with conductive carbon yarn			Stainless steel
	Back	Stainless steel	Plastic	Stainless steel	ABS + PC
Color	Wrist band	Blue, Dark blue, Purple, etc.	Blue, Dark blue, Purple, etc.	Blue	Black, Light Blue, Dark blue
	Coil cord	Black, Blue	Black, Blue	Black	Black, Light Blue, Dark blue
		1 Mohm Resistor	1 Mohm Resistor	1 Mohm Resistor	1 Mohm Resistor

• Ground Cord

The Ground Cord is a bridge line between tabletop or floor mat and grounding point. We have 3 different diameters (4mm, 7mm, 10mm) of male and female snaps, several lengths and different ends of Ground Cords to meet customer's various needs.



M05-Z-001



M05-Z-003



M05-Z-009

Mold material: Polyurethane (PU)
 Cable Dia.: 2.0mm
 Cap: Yellow or Black
 Color: Black
 Cable break load: 120N
 Stud or Socket
 Plastic material(ABS+PC)

• Dual Ground Cord

Polstar Dual Common Ground Cord can connect 2 wrist straps to a grounding point. The included ring terminal is for extending cord length.



M06-Z-001



M06-Z-002

Cord parts

Code Length: 10ft
 Conductor: 7 strand Tinsel Wire coated with durable 90A polyurethane
 Mold material: Polyurethane (PU)
 Cable Dia.: 2.0mm
 Copper button and strong elastic copper plug
 Color: Black
 Cable break load: 120N
 Molded plug end pull force: 8.5kgs

Snap parts

Plastic materials(ABS+PC)
 Color: Black

12 Groundings

• Coil Cord



10mm Socket, Banana Jack, Length 6'
10mm Socket, Banana Jack, Length 8'
10mm Socket, Banana Jack, Length 10'
10mm Socket, Banana Jack, Length 12'

4mm Socket, Banana Jack, Length 6'
4mm Socket, Banana Jack, Length 8'
4mm Socket, Banana Jack, Length 10'
4mm Socket, Banana Jack, Length 12'

10mm Socket, 4mm socket, Length 6'
10mm Socket, 4mm socket, Length 8'
10mm Socket, 4mm socket, Length 10'
10mm Socket, 4mm socket, Length 12'

• Snap Dia & Type & Length can be adjustable.

• Dual Bench Mount



M11-Z-001

Cord length: 4.5m
Wrist strap grounding for 2 persons
Connecting with plug or snap button

• Wrist Strap Monitor



Features

- Instant warning of wrist strap failure.
- Easy and convenient to operate
- Compact and handy
- Compatible with any wrist straps with banana plug in the market.

Specifications

- Input AC 220V / 60Hz (DC 6V)
- Material: Polystyrene
- Dimension: 67mm X 60mm X 29mm
- Weight: 60gm (not including power supply adaptor)

• Wrist Strap Tester



M10-E-003

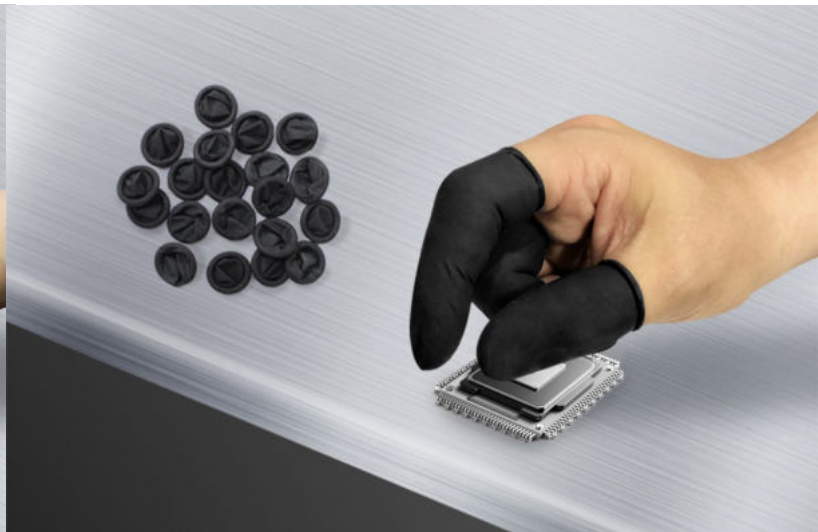
LED Display Indicator

- GOOD(Green): 800K Ω ~ 10M Ω
- HI(Yellow): 10M Ω above
- LO(Red): 800K Ω below

Specifications

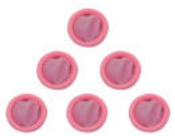
- Test voltage: Regulated 9 volts, DC
- Operating Voltage: 6.5~9 volts
- Accuracy: +/- 5%
- Weight: 145g
- Dimensions: 28mm(T) x 71mm(W) x 90mm(L)

13 Finger Cots



P/N: M08D-200-IV

Description: Ivory, Antistatic, Powder Free, Rolled, Plain Surface.



P/N: M08D-201-PK

Description: Pink, Antistatic, powder Free, Rolled, Textured Surface.

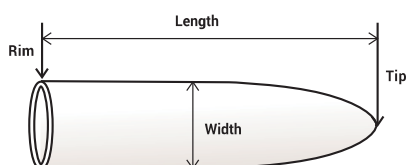
Physical Properties

Tensile Strength	Mpa	≥16 Mpa
Elongation at break	%	≥500
Surface Resistance	Ohm	10e7~10e11 10e5~10e8
Material	-100% Natural Rubber Latex -Nitrile	
Color	White (WH), Yellow (YE), Pink (PK), Black (BK), Transparent (TP), etc.	
Storage Conditions	Cool and dry place, Avoid direct sunlight and cooper material	

FEATURES

- RoHS1, RoHS2, REACH, CE Registration
- OEM brand (Option)
- Antistatic, Conductive

- Rolled, Cut, Plain, Textured
- Tight Fit & Heavy Duty Types are available
- Low Powdered, Powder Free (Chlorinated)



Dimension		Size S	Size M	Size L	Size XL
Average weight	g	0.42±0.02	0.46±0.02	0.50±0.02	0.56±0.02
Width	mm	23±1	26±1	29±1	32±1
Length-Rolled/Unrolled	mm	70±2	70±2	70±2	70±2
Rim thickness	mm	1.2±0.1	1.2±0.1	1.2±0.1	1.2±0.1
Length-Cut	mm	60±3	60±3	60±3	60±3
Double Wall thickness	mm	0.22±0.04	0.22±0.04	0.22±0.04	0.22±0.04
Thickness at Tip	mm	≥0.20	≥0.20	≥0.20	≥0.20



Tel. (33) 3804 1219
Cel. (33) 1520 4868
ventas@alimexelectronics.com

Av. Camino Real a Colima 100 int. 14B,
Col. Los Cajetes, Zapopan, Jalisco, CP. 45234

www.alimexelectronics.com