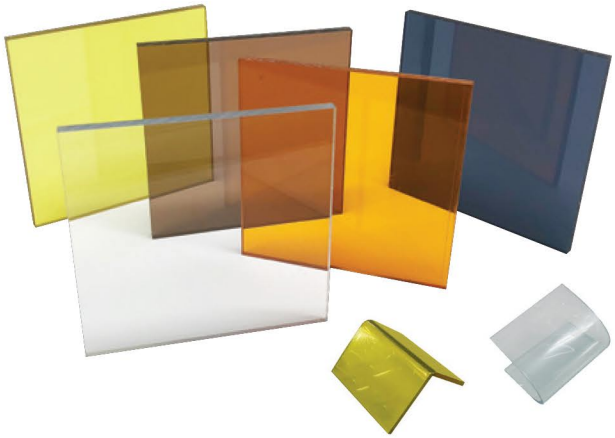
WALLS & PARTITIONS

Static Dissipative Plates

Polstar Static Dissipative Plate (PSDP) features a special ESD hard-coating on both surfaces, providing a semi-permanent surface resistance of <10e9 ohms, effectively eliminating static electricity. PSDP is ideal for rapidly dissipating static charges without causing harmful arcing on the surface of vulnerable components. PSDP meets electrical and optical requirements while offering superior abrasion resistance, a non-scratchable surface, and chemical resistance. PSDP is available in Polycarbonate (for high-temperature performance, fire resistance, and outstanding impact resistance), PMMA (offering high pencil hardness and excellent clarity), PVC (with excellent chemical resistance), and Aluminum Composite Panels, catering to a wide range of applications across various industries. The newly designed PSDP series is also available for specialized bending and bonding applications (please note that Polycarbonate is not suitable for bonding) without developing surface cracks and without altering surface resistance after the bending process.



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 filing table covers
- Sterile filling station panels
- Barrier system panels
- Insulator unit covers
- Machinery guards
- Separator panels
- Templates

Specifications & Product Information

Properties	Testing Item	Unit	PC (Polycarbonate)	PMMA (Acrylic)	PVC (Polyvinyl Chloride)	AL (Aluminum)	Test Method
Physical Properties	Specific Gravity	g/cm^2	1.2	1.19	1.4	1.38	ASTM D-792
	Water Absorption	%	0.1	0.3	0.01	-	ASTM D-570
	Pencil Hardness	-	HB	3H~5H	3H	3H~5H	JIS K-5400
	Piece Close Adhesion Strength	-	100/100	100/100	100/100	100/100	JIS K-5400
Mechanical Properties	Tensile Strength	Mpa (kgf/cm^2)	58.8~68.6 600~700	560~670	650	8.5	ASTM D-638
	Elongation	%	90~140	2.0~7.0	20	27	ASTM D-638
	Flexural Strength	kgf/cm^2	920~980	840~1200	920	1344	ASTM D-790
	Flexural Modulus of Elasticity	kgf/cm^2	2500	2.6×10^4 ~ 3.2×10^4	2.6×10^4	3746	ASTM D-256
	Compressive Strength	Jkgf/cm^2	-	-	1142	-	ASTM D-256
	Izod Shock Strength	J/M (kgf cm/cm^2)	6	2	6	-	ASTM D-256
Thermal Properties	Burning Resistance	-	Incombustibility V-0 ~ V2	Incombustibility HB	Incombustibility V-0	Incombustibility V-0	UL-94
	Coefficient of Linear Thermal Expansion	X10-^{5}in/in°F	3.8	-	-	-	ASTM D-696
	Heat Deflection Temp.	°F/°C at 264psi	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 X10-4 cal/in/cm-sec-°F	1.3 4.5	-	-	-	ASTM D-177
Electrical Properties	Surface Resistance	ohm	< 10e9	< 10e9	< 10e9	< 10e9	ASTM D-257
	Static Decay Time	Sec	Below 0.1	Below 0.1	Below 0.1	Below 0.1	MIL B-81705 B
Size	-	mm	1,000 × 2,000 / 1,200 × 2,400				
Thickness	-	mm	2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 8.0 / 10.0				
Color	-	Clear transparent, Yellow, Orange, Blue, Brown, Smoke, Opaque in black or Ivory					
Remark	Other sizes, thicknesses and colors are also available on request.						

Maintenance, Handling, Caution

- Recommendable storage conditions: less than 30℃, RH 40 ~ 60%.
- To avoid scratches on the surface, remove the protective film after PSDP has been machined.
- It is recommendable to have trials with test specimen to determine optimum settings before cutting or modification.
- Static dissipative coating must be removed from the surface to be glued.
- Isopropyl Alcohol (IPA) or alcohol-based cleaning liquid is recommendable for cleaning.
- PSDP is not required to be cleaned with antistatic plastic cleaners.
- Loss of static dissipative performance will occur if excess scratching is concentrated in a particular area.
- If PSDP is treated with a polishing machine, the performance of static dissipative coating cannot be guaranteed.

Polstar PVC Curtain Film

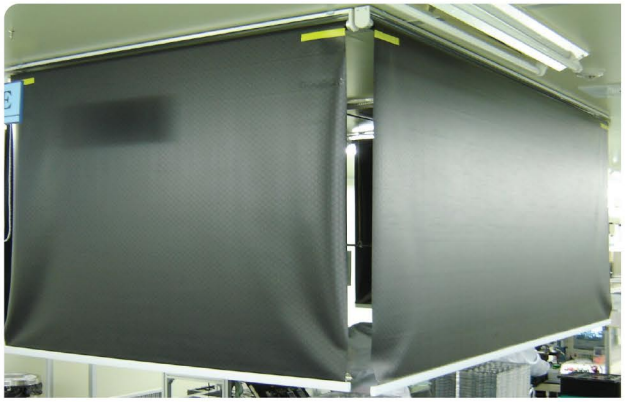
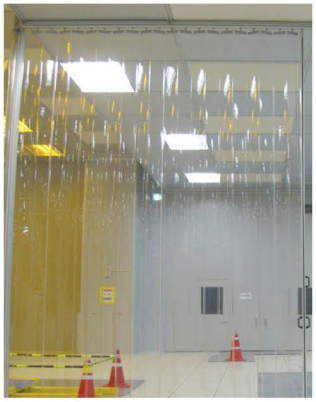
Polstar PVC Curtain Film is flexible PVC(Poly Vinyl Chloride) film with ESD control properties. This soft PVC film is easily jointed by high frequency welding. Its ESD properties, which generate much less friction electrostatic charge, last long until worn-out. Polstar PVC Curtain Film is widely used as flexible partitions, soft walls, door curtains, covers for equipment, portable windows, etc. in many areas, such as different grades of cleanrooms, laboratories, inspection, assembly, electronics, printing, painting, precision tooling, pharmaceutical, medical, food processing and many others.

Features

- Two designs of honeycomb patterns
- Antistatic, static dissipative or conductive
- Extremely low electrostatic generation
- Dust and particles are not accumulated on the surface
- Clear transparent for good visuality
- Conductive carbon printing is not removed easily
- Various thicknesses and sizes are available
- Individual carton packing in roll

Applications

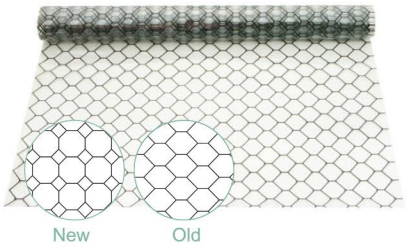
- Door strip, soft wall, partition, curtain in Cleanroom
- Portable window and partition
- Precision equipment and machine cover
- Shielding and blocking partition
- Screen door or window
- Reinforcement of existing window or partition
- Reduction of harmful ultraviolet ray
- Other applications to control electrostatic problem



ESD Grid Curtain Film

Specially formulated conductive carbon grid printed on normal transparent PVC film. The surface resistance of the carbon printed side is 10e4~10e6 ohm.



Model	Item Code	Size
P-PGF	M05Y-004	0.3 mm(T)×1370 mm×30 m
	M05Y-013	0.3 mm(T)×1370 mm×50 m
	M05Y-009	0.5 mm(T)×1370 mm×20 m
	M05Y-011	1 mm(T)×1000 mm×20 m

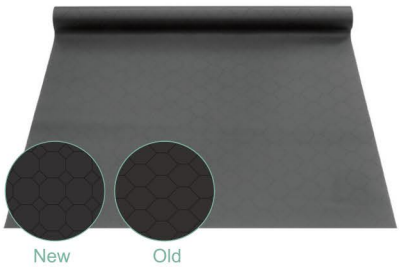
ESD Clear Curtain Film

This is a homogeneous antistatic transparent PVC film made of antistatic compounded PVC, not antistatic coated material. ESD properties remain permanent. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm.

Model	Item Code	Size
P-PCH (Homogeneous Type)	M06Y-002	0.3 mm(T)×1370 mm×30 m
	M06Y-006	0.5 mm(T)×1370 mm×20 m
	M06Y-010	1 mm(T)×1200 mm×20 m
	M06Y-014	2 mm(T)×1200 mm×10 m

ESD Opaque Black Grid Curtain Film

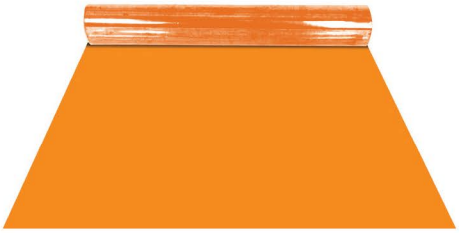
This is not a homogeneous constitution, but a specially formulated conductive carbon grid printed on opaque black PVC film. The surface resistance of the carbon printed side is 10e4~10e6 ohm. This film is good for shielding screen effect with conductive surface.



Model	Item Code	Size
P-PGB	M09Y-001	0.3 mm(T)×1370 mm×30 m
	M09Y-005	0.5 mm(T)×1370 mm×20 m

ESD UV Clear Curtain Film

Homogeneous yellow tinted antistatic PVC film for the protection of harmful ultraviolet ray. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm.



Model	Item Code	Size
P-PUH (Homogeneous Type)	M07Y-001	0.3 mm(T)×1370 mm×30 m

ESD Opaque Black Curtain Film

This is a homogeneous antistatic opaque black PVC film made of antistatic compounded PVC, not antistatic coated material. ESD properties remain permanent. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm.

Model	Item Code	Size
P-PBH (Homogeneous Type)	M10Y-001	0.3 mm(T)×1370 mm×30 m

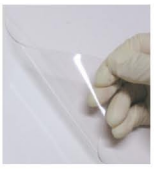
ESD Opaque Black Grid Curtain Film , Both sides

This is not a homogeneous constitution, but a specially formulated conductive carbon grid printed on opaque black PVC film on both sides. The surface resistance of the Both sides are 10e4 ~10e6 ohm.

Model	Item Code	Size
P-PGG	M09Y-002	0.3 mm(T)×1370 mm×30 m
	M09Y-003	0.5 mm(T)×1370 mm×20 m

ESD Clear Adhesive Curtain Film

This is a homogeneous antistatic transparent PVC film with adhesive one side. ESD properties remain permanent. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm. This film can be applied to any insulated walls, windows, partitions and other insulative materials.



Model	Item Code	Size
P-PAH (Homogeneous Type)	M11Y-001	0.25 mm(T)×1200 mm×10 m

ESD Strip Door & Folding Door

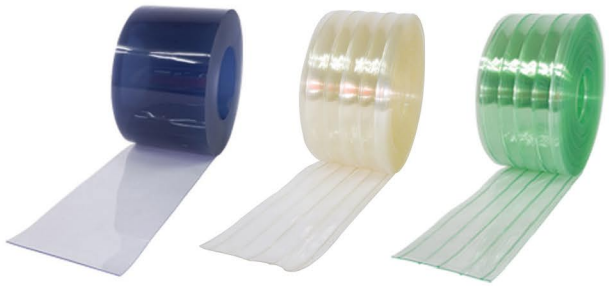
ESD Strip Door Curtain Film

Polstar Strip Door Curtain Film is recommendable for the gates or 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.
4 options, general purpose of strip door curtain film, cold resistant strip door curtain film, anti-insect strip door curtain film and antistatic strip door curtain film, are available.

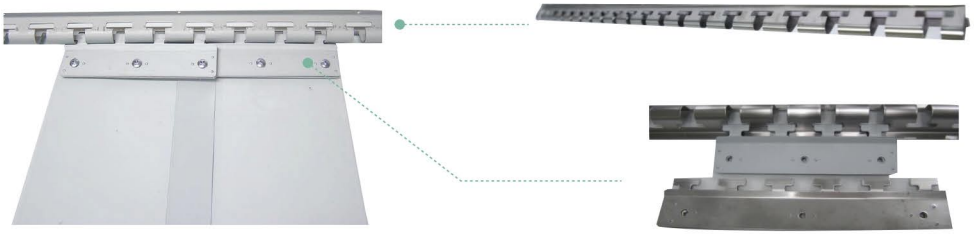
Item Code	M16Y-000
Model	P-PSF
Surface Resistance	10e8 ~ 10e10 ohm
Color	Bluish Tansparent / Greenish Transparent
Available Sizes	2 mm(T)×200 mm×30 m
	2 mm(T)×300 mm×30 m
	3 mm(T)×300 mm×30 m

Flat type

Protrusion Type



Accessories for P-PSF



Strip Door Frame
M18Y-004

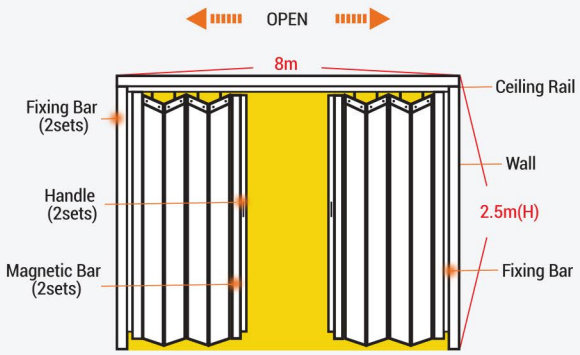
Strip Door Hanger
M18Y-005

ESD Folding Door Film

Homogeneous antistatic foldable film is suitable to make clean booths, soft partitions, walls, doors, etc. The standard size is 1.35 mm(T)×1000 mm(W)×12 m(L) and there are 8 folding lines in 1000mm width all the way to the length diretion. Two colors, greenish clear and yellowish clear, are available.

Item Code	M21Y-000
Model	P-PFF
Surface Resistance	10e8 ~ 10e10 ohm
Color	Yellowish, Greenish Transparent
Available Sizes	1.35 mm(T)×1000 mm(W)×12 m(L)

The drawing of ESD folding door



*Other types and sizes are also available.

Accessories for P-PFF

Runner
M18Y-001

Hanger
M18Y-003

Rail
M18Y-002

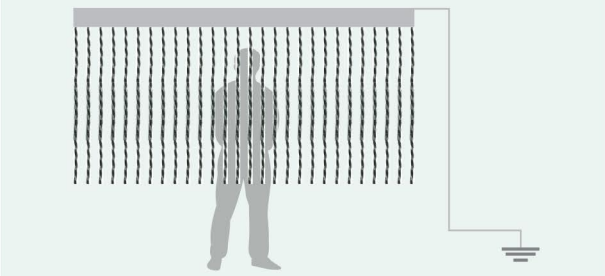
Conductive Rope

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

Item Code	M14Y-001
Color	Black & White mixed
Composition	Polypropylene 93% , Stainless steel fiber 7%
Weight	9 g/meter
Dia	7 mm
Surface Resistance	10e3 ~ 5 ohm
Packing	100 yards/hank

Applications

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



Specifications & Product Information

Item / Descriptions		P-PCH P-PBH P-PAH P-PSF P-PFF	P-PUH	P-PGF	P-PGB	P-PGG	Unit	Test Method
Electrical Properties								
Surface Resistance	Front	10^8~10^{10}	10^8~10^{10}	105~10^8	10^5~10^8	10^5~10^8	ohm	ASTM D-257
	Back	10^8~10^{10}	10^8~10^{10}	> 10^{11}	> 10^{11}	10^5~10^8		
Volume Resistance		10^7~10^9	10^7~10^9	> 10^{11}	> 10^{11}	> 10^{11}	ohm	ASTM D-257
Friction Electrocharge	Front	< 100	< 100	< 1000	< 1000	< 1000	voltage	Electro Static Field Meter (10times rubbing by cotton, 23°C×24%RH)
	Back	< 100	< 100	-	-	< 1000		
Decay time	5000V~500V	< 0.5					sec	MIL-B-81750C
Physical Properties								
Tensile Strength	MD	1.90	1.90	1.90	1.90	1.90	kg/㎟	ASTM D-882
	TD	1.90	1.90	1.90	1.90	1.90		
100% Modulus	MD	1.10	1.10	1.10	1.10	1.10		
	TD	1.80	1.80	1.80	1.80	1.80		
Elongation	MD	170	170	170	170	170	%	
	TD	210	210	210	210	210		
UV Transmissivity	UV-H	-	95.50	-	-	-	%	KS K 0850-1999
	UV-B	-	95.40	-	-	-		
	UV-A	-	9.5	-	-	-		
Heat Shrinkage		< 5					%	Internal Method (60°C ×30min in H2O)
Resistance to Chemicals								
Hydrochloric Acid (10%)		○						JIS K-7114 5 cm×5 cm Size of Specimen: Dipped for 168hrs
Sulfuric Acid (10%)		○						
Acetic Acid (5%)		○						
Sodium Hydroxide (10%)		○						
Aqueous Ammonia (10%)		○						
Ethyl Alcohol (50%)		△						
Acetone (95%)		△						
Benzene (95%)		×						
Formalin (95%)		○						
Available Sizes								
Thickness (mm)		0.1, 0.2, 0.25, 0.3, 0.5, 1.0, 2.0, 3.0						
Width (cm)		20, 30, 90, 100, 120, 137						
Length (m)		10, 20, 30, 50						