

FABRICS & GARMENTS



ESD / Cleanroom Fabrics

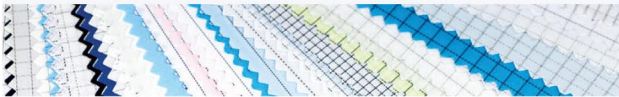
Polstar ESD / Cleanroom Fabrics are primarily composed of high multi-filament polyester and carbon filament yarn to insure maximum protection against particle contamination and ElectroStatic Discharge (ESD). The Polstar fabrics did not neglect to consider the salient concerns of the workers including air permeability, wearability and durability.

Features

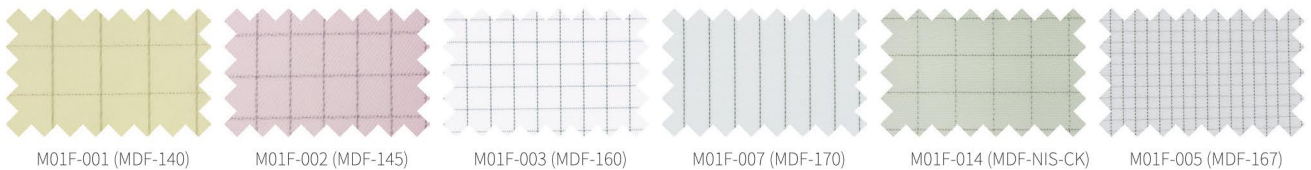
- Over 70 different fabrics
- Immediate delivery from our stock
- Strict quality control from our profound knowledge and wide experience
- Continuous development to meet customer's new requirement
- Additional treatments, such as silicon free, Teflon and antimicrobial are available.

Applications

- Electronic and semiconductor Industries
- Medical and Pharmaceutical Industries
- Food Industry
- Automotive Industry
- Aerospace Industry



Lint Free Static Control Fabric



M01F-001 (MDF-140)

M01F-002 (MDF-145)

M01F-003 (MDF-160)

M01F-007 (MDF-170)

M01F-014 (MDF-NIS-CK)

M01F-005 (MDF-167)

Sterilization Compatible Cleanroom Fabric



M02F-001 (MDF-110)

M02F-003 (MDF-120)

M02F-004 (MDF-125)

M02F-005 (MDF-127)

M02F-006 (MDF-130)

M02F-008 (MDF-190)

M02F-010 (MDF-210)

M02F-011 (MDF-211)

M02F-012 (MDF-220)

M02F-013 (MDF-221)

M02F-014 (MDF-146)

M02F-015 (MDF-149)

M02F-016 (MDF-165)

M02F-017 (MDF-305)

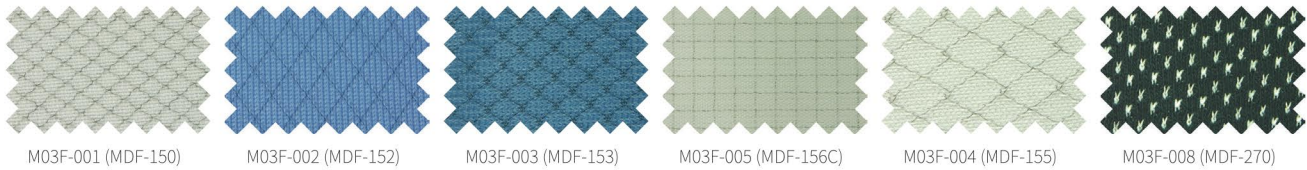
M02F-028 (MDF-304)

M02F-031 (MDF-316)

M02F-032 (MDF-164)

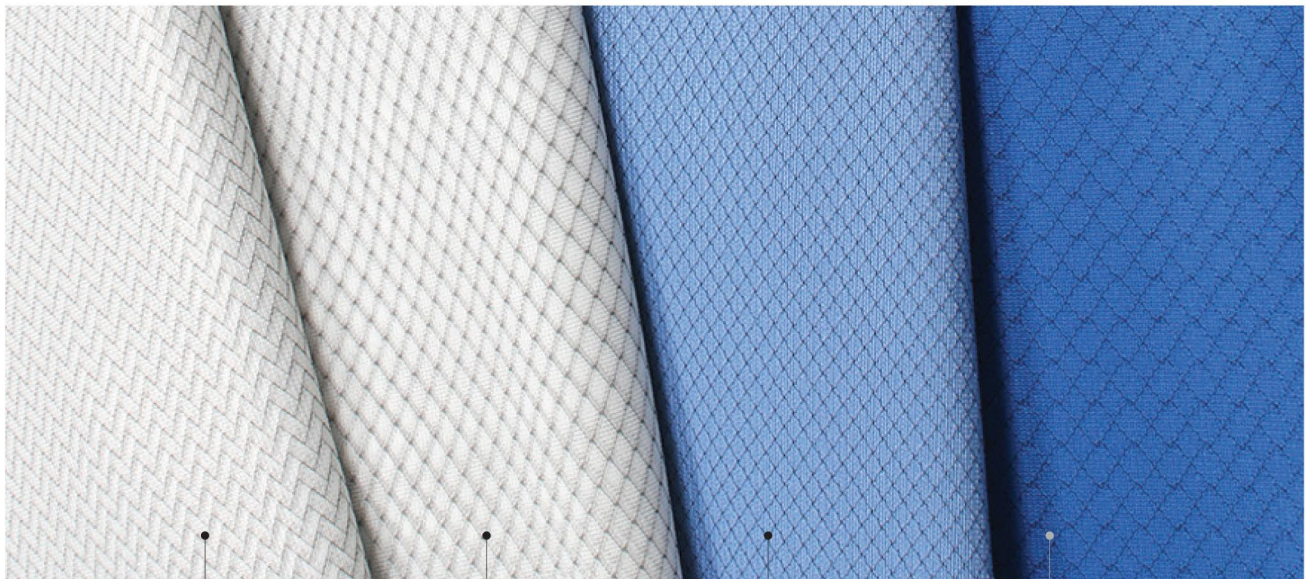
M02F-033 (MDF-319)

Conductive Fabric



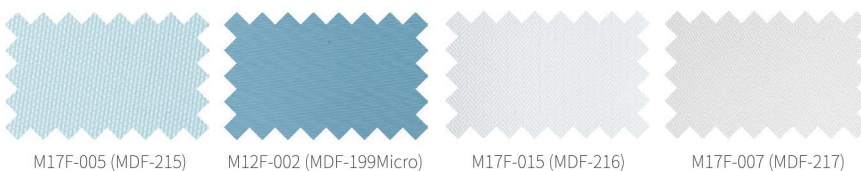
ESD Knitted Fabrics New

4 types of ESD Warp Knitted Fabrics having low surface resistance range of $10e5 \sim 10e6$ ohm are suitable for being used in ESD Category 3 garment. As they are in different patterns and density, customers can choose the most suitable fabric with wide color options for their needs.



Item Code	M15F-016	M15F-013	M15F-014	M15F-015
Model (P/N)	MDF-286	MDF-283	MDF-284	MDF-285
Descriptions	6×3 mm herringbone fabric	5 mm diapered light fabric	3 mm diapered fabric	6 mm diapered fabric
Composition	Polyester yarn 87% Conductive carbon yarn 13%	Polyester yarn 91%, Conductive carbon yarn 9%	Polyester yarn 93% Conductive carbon yarn 7%	Polyester yarn 98% Conductive carbon yarn 2%
Conductive Yarn	RESISTAT® F902 F044	RESISTAT® F902 F044	RESISTAT® F902 F044	RESISTAT® F902 F044
Width	60"/61"	60"/61"	60"/61"	60"/61"
Weight	125 g/yard	118 g/yard	195 g/yard	196 g/yard
Surface Resistance	$10e5 \sim 10e6$ ohm	$10e5 \sim 10e6$ ohm	$10e5 \sim 10e6$ ohm	$10e5 \sim 10e6$ ohm

Non ESD Fabric



Cleanroom / ESD Garment

Cleanroom/ESD Garment is used in the place where proper protection against particle contamination and Electrostatic Discharge is required. We can supply you with this garment as well as the fabric.

We have various styles of garments such as Coverall, Gown, Lab Coat, T-shirt, etc. in our range.

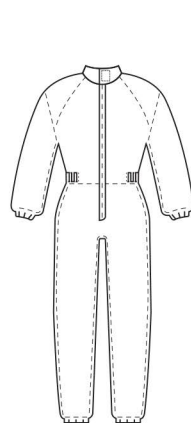
Features

- Produced on your required design and fabric
- Produced by skilled workers with wide experience
- Produced with high quality fabric and sewing accessories
- Considering air permeability, comfortability, wearability and durability
- Strict quality control from fabric to finished garment
- Small quantity also can be supplied

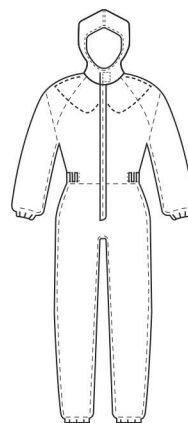
High Clean Coverall



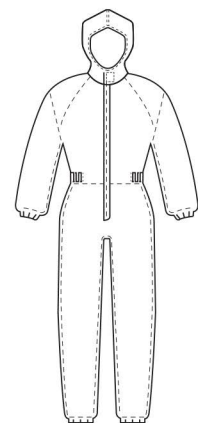
M04F-008



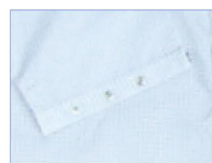
M04F-008



M04F-009



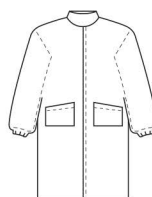
M04F-010



Cleanroom Gown



M04F-007



M04F-006



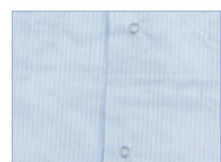
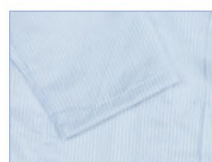
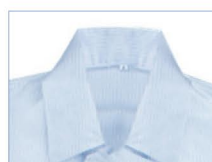
M04F-007



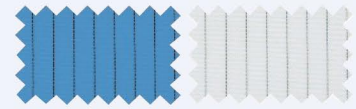
M04F-011



M04F-012

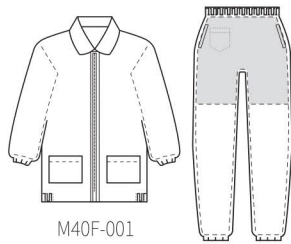


Cleanroom & ESD Apparel (Ready-made)



Fabric: 5 mm strip, Polyester 98%, Carbon 2% **Color:** Sky Blue, White **Design:** 6 types

ESD Jacket and Pants

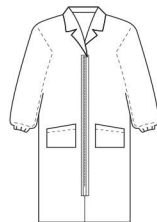


M40F-001

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	108	112	116	120	124	128	132
L (Back) (±1)	62	64.5	67	69.5	72	74.5	77
L (Sleeves) (±1)	52	54	56	58	60	62	64
Wrist (±0.5)	20	20	21	21	22	22	22
L (Pants) (±1.5)	98	100.5	103	105.5	108	110.5	113
Ankle (±0.5)	24	24	25	25	26	26	27
Waist (Pants) (±1)	50	53	56	59	62	65	68

ESD Gown

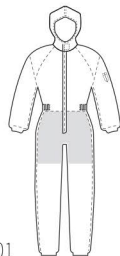


M41F-002

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	104	108	112	116	120	124	128
L (Back) (±1)	98	102	106	110	114	118	122
L (Sleeves) (±1)	53	55	57	59	61	63	65
Wrist (±0.5)	20	20	21	21	22	22	23
W (Shoulder) (±1)	42.5	43.7	45	46.2	47.5	48.2	49.5

Cleanroom Coverall with Hood

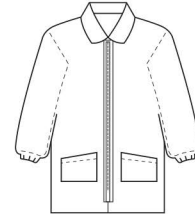


M43F-001

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	106	110	114	118	122	126	130
L (Back) (±1.5)	150	155	160	165	170	175	180
L (Sleeves) (±1.5)	79	81	83	85	87	88	89
Wrist (±0.5)	19	19	20	20	21	21	22
Ankle (±0.5)	23	23	24	24	25	25	26
Waist (±1)	78	83	87	91	95	99	103
Pen holder distance(±0.3)	25.3	26	26.8	27.5	28.2	29	29.7

ESD Gown

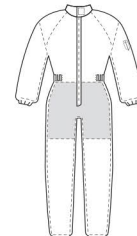


M41F-001

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	104	108	112	116	120	124	128
L (Back) (±1)	66	69	72	75	78	81	84
L (Sleeves) (±1)	52	54	56	58	60	62	64
Wrist (±0.5)	20	20	21	21	22	22	23
W (Shoulder) (±1)	43.5	44.7	46	47.3	48.5	49.8	51
Front Zipper	51	54	57	60	60	60	60

Cleanroom Coverall

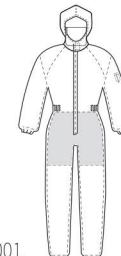


M42F-001

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	110	114	118	122	126	130	134
L (Back) (±1.5)	155	160	165	170	175	180	185
L (Sleeves) (±1.5)	79	81	83	85	87	88	89
Wrist (±0.5)	19	19	20	20	21	21	22
Ankle (±0.5)	23	23	24	24	25	25	26
Waist (±1)	85	89	93	97	101	105	109

Cleanroom Coverall with Mask & Hood



M44F-001

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	110	114	118	122	126	130	134
L (Back) (±1.5)	150	155	160	165	170	175	180
L (Sleeves) (±1.5)	79	81	83	85	87	88	89
Wrist (±0.5)	19	19	20	20	21	21	22
Ankle (±0.5)	23	23	24	24	25	25	26
Waist (±1)	85	89	93	97	101	105	109

Cleanroom Underwear

Features

- Sand Wash treatment
- Soft touch and Lightweight
- Comfortable and Breathable
- Free from particle generation
- Pre-filtration of skin flakes generated from human body
- Autoclavable
- Gamma-ray, EtO sterilization Compatible
- ESD type (MDF-199UT) and Non-ESD type (MDF-199Micro)

Applications

- Worn underwear with laboratory coverall in Cleanroom class 100 to 1 (class M1.5, M2.5, M3.5)
- Worn as an easywear in white gown at hospitals



Item Code	M46F-000	
Type	Long sleeve top	Short sleeve top
	Long pants	Short pants



MDF-304 (3-8)



MDF-309 (3-16)



MDF-331



MDF-199UT (3-20)



MDF-199Micro (5-4)

Cleanroom Headgear

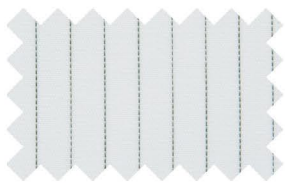
The Headgear is required in Cleanroom together with Cleanroom garments to block particles generated from worker's head and neck. Customized design and fabrics are also available on request.



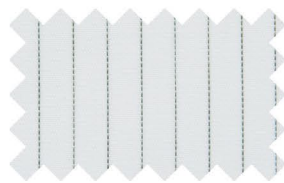
M11F-000

ESD Chemical Resistant Fabric

ESD Chemical Resistant Fabric (ECRF) is ideal for the environment where chemical-related products are used and handled. There is special PU coating on the fabric and the thin and chemical-proof film is laminated on the top of the coated fabric to achieve maximum chemical resistant properties. The **ECRF** can effectively protect workers from potential risks associated with exposure to dangerous and harmful chemicals and provides a particle and ESD-safe working environment. We can create a range of finished products with **ECRF**, such as ESD Arm Sleeves, ESD Aprons, ESD Open-back Coats and more.



M07F-002 (MDF-235)



M07F-004 (MDF-245)

Technical Specifications (MDF-245)

Test	Warp	Weft	Unit	Test Method
Yarn	PFY 75D	PFY 100D	Denier	
ECF	F-901 (BASF)		-	
Density	192	92	Threads/Inch	
Weave	1/2 twill (5 mm stripe)			
Dimension	58" / 60"		inch × yd	
Weight	166		GR/SQMT	
Thickness	0.18 ± 0.01		mm	
Friction Static Voltage (Back)	< 100		Volts	JIS-L1094B
Surface Resistance	10e10 ~ 10e11 (surface)		Ω	ASTM-D257
	10e6 ~ 10e7 (back)			
Index of Chemical Penetration	1. Sulfuric Acid (50%) ————— 0 2. Hydrochloric acid (36%) ————— 0 3. Nitric Acid (50%) ————— 0 4. Formic Acid (50%) ————— 0 5. Hydrofluoric Acid (40%) ————— 0 6. Sodium Hydroxide (40%) ————— 0 7. Hydrogen Peroxide (30%) ————— 0 8. Toluene (99.5%) ————— 0 9. Acetone (99.5%) ————— 0 10. Methanol (99.5%) ————— 0 11. Hexane (95%) ————— 0		%	ISO 6530-2005
Constructions	 Chemical Resistant Film PU Coating Cleanroom Fabric (MDF-170)			

ESD Chemical Resistant Apron



Item Code M08F-001

SR 10e6 ~ 10e7 ohm

Size 620 mm(W) × 770 mm(L)

Item Code M25F-001

SR 10e6 ~ 10e7 ohm (back), 10e10 ~ 10e11 ohm (front)

Size 640 mm(W) × 910 mm(L)

ESD Chemical Resistant Open-back Coat

Front



Back



Item Code M26F-001

SR (back) 10e6 ~ 10e7 ohm

(front) 10e10 ~ 10e11 ohm

ESD Chemical Resistant Sleeves



Item Code M09F-001

SR 10e6 ~ 10e7 ohm

Size 170 mm(W) × 350 mm(L)

Item Code M24F-001

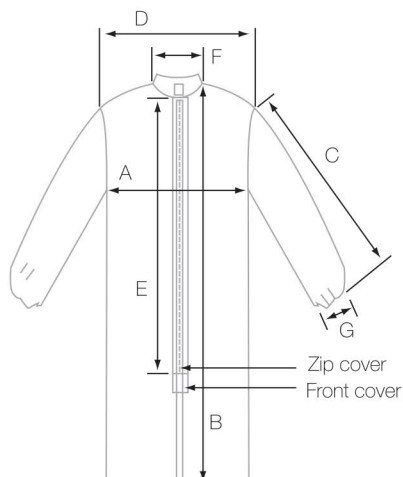
SR 10e6 ~ 10e7 ohm (back), 10e10 ~ 10e11 ohm (front)

Size 200 mm(W) × 400 mm(L)

(cm)

Size	Chest	Length	Sleeves	Shoulder
S	57	107	61	42.5
M	60	110	62	45
L	62.5	113	63	47.5
XL	65	116	64	50
2XL	67.5	119	65	52.5
3XL	70	122	66	55

ESD Chemical Resistant Gown



Item Code M30F-001

SR (back) 10e6 ~ 10e7 ohm

(front) 10e10 ~ 10e11 ohm

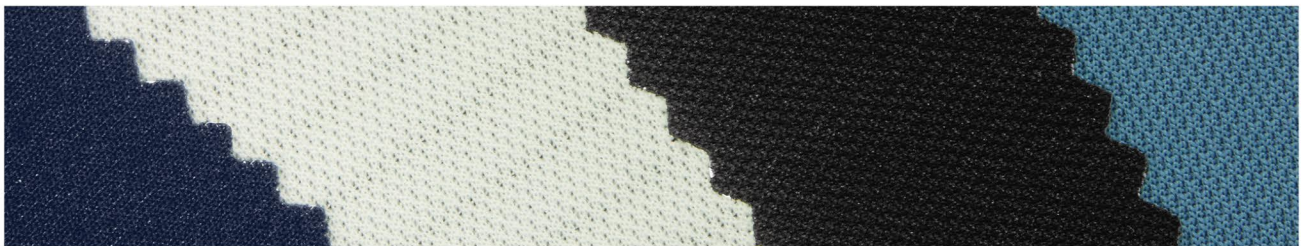
(cm)

Size	A	B	C	D	E	F	G
S	51.5	101	57.5	39.5	53	50	19
M	54	104	58	42	53	50	19
L	56.5	107	59.5	44.5	53	50	19
XL	59	110	61.5	47	53	50	19
2XL	61.5	113	62.5	49.5	53	50	20
3XL	64	116	62.5	52	53	52	20

ESD Coolon Fabric

Experience Innovative Cool & Enjoy More Comfortable Life!

Coolon is a powerful performance fiber with excellent moisture dispersion creating a natural and refreshing feel. With the Cool Fiber Technology of Kolon, we have developed our own ESD Coolon Fabric with a Memory in 10 mm conductive filament stripe (MDF-320) and a Pique in 7 mm conductive filament stripe (MDF-250). The Interlocking Design, also known as Double Knitted Pattern, which is the umbrella term of Memory, Pique, etc., has different texture on both sides. The inside surface to be touched on the skin feels soft, like cotton while the surface facing outside has rough and wider in cross-section so that sweat from your skin will be evaporated and dried quickly by exposing wider surface of the fabric to the air. Our ESD Coolon Fabric is one of the best choices for making Casual wear, Shirts and Sportswear for the people who handle any ESD sensitive materials or devices in EPA (ESD Protected Area).



· Excellent ESD properties



· Good resistance to fading, shrinking and wrinkling.



· Improved breathability



· Quick moisture absorption



· Fast drying



· Dry and soft touch



· No particle generation



· Unique brightness



· Excellent durability



· Easy to care and handling

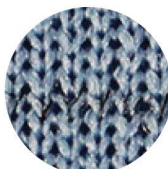


· All-weather fabric

Outer surface

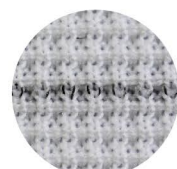
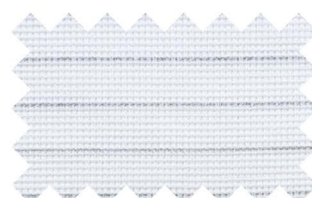


Inner surface

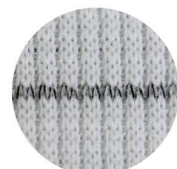
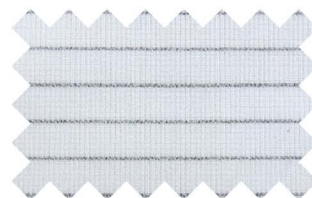


M05F-001 (MDF-250)

Outer surface



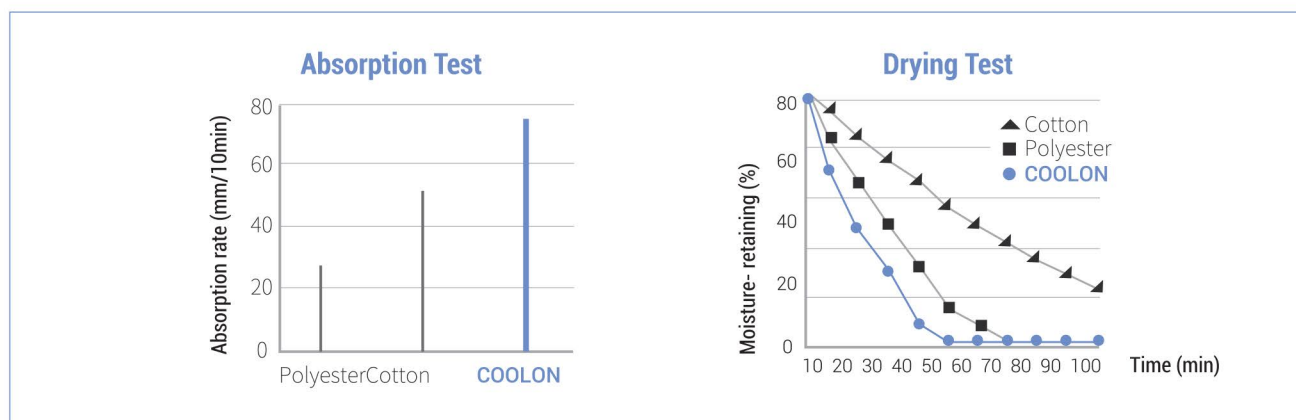
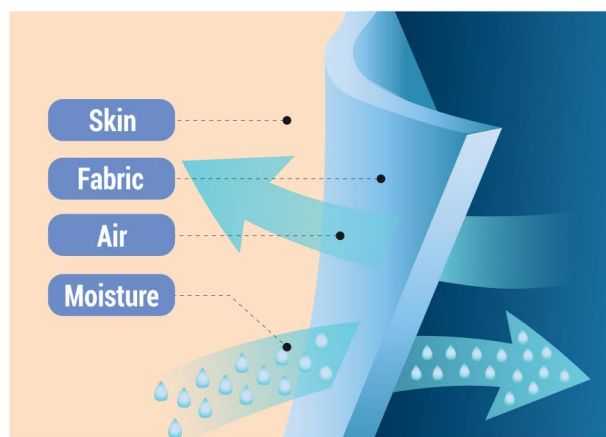
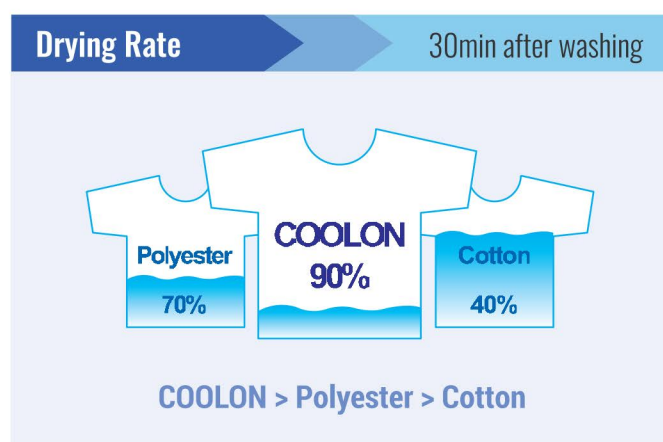
Inner surface



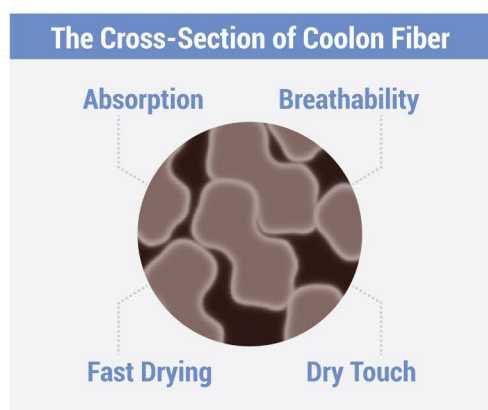
M05F-002 (MDF-320)

What is COOLON ?

COOLON is the brand name of functional moisture-wicking fiber developed by Kolon, which is one of the leading textile companies specialized in developing various synthetic fiber in Korea. It is specially-engineered polyester fiber to improve "breathability" compared to natural fiber like cotton.



The Coolon fiber is not round, but slightly oblong in cross-section, like a peanut hull. It means that the surface of Coolon fiber in cross-section is wider than that of other fiber. This unique shape of the fiber creates capillary action that absorbs moisture through the core and out to the wider area on the surface of the fiber that increases evaporation.



Item Code	M05F-001	M05F-002
Model	MDF-250	MDF-320
Appearance		
Dimension	70"/72"	58"/60"
Weight	148 g/sqmt	205 g/sqmt
Compositions	Polyester (Coolon) 98%, Conductive Yarn 2%	
Surface Resistance	10e6 ~ 10e7 ohm	1.3×10e6 ohm

ESD Coolon Shirt

ESD Coolon Shirt is made of 100% polyester with embedded ECF (Electro-Conductive Fiber) in stripe pattern. This special fabric, made in Korea, is under well controlled QC, and generates significantly low lint compared to other normal fabric. It is comfortable thanks to quick sweat evaporation and good ventilation, and it has extra durability, light weight, etc. The touch is like DuPont Coolmax fabric, which is the material of popular sports wear. ESD Coolon shirt is suitable for the people working in hot and high humidity environment, and is also a good choice for the workers handling ESD sensitive products by virtue of its good ESD properties.



Item Code M06F-002-WH
Model MDF-250CL



Item Code M06F-002-RB
Model MDF-250CL

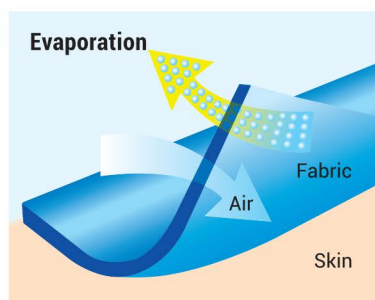
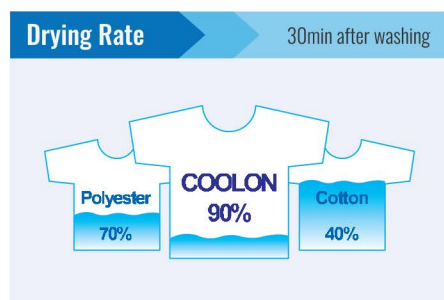


Item Code M06F-001-NA
Model MDF-250CS



Item Code M06F-001-BK
Model MDF-250CS

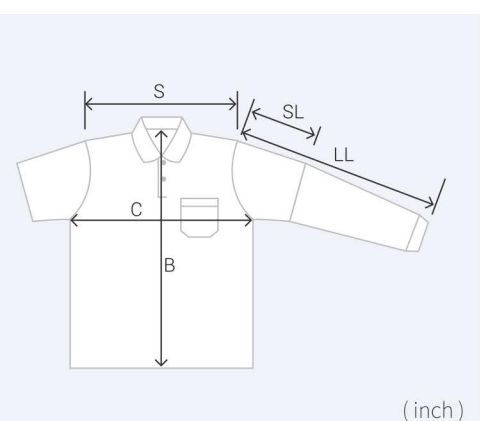
Model	Type	Color	Composition	Weight	Choice
MDF-250CS	Shirt with collar and short sleeves	White Royal Blue Navy Black	98% of Polyester Coolon fabric and 2% of ECF yarn	148 g / sqmt	· ESD symbol · Breast pocket
MDF-250RS	Shirt with round neck and short sleeves				
MDF-250CL	Shirt with collar and long sleeves				
MDF-250RL	Shirt with round neck and long sleeves				



Available Design (UNISEX)



Mark	Chest (C)	Back Length (B)	Shoulder Width (S)	Sleeve Length	
				Short (SL)	Long (LL)
XS	19.5"	27"	18.5"	8"	23.5"
S	20.5"	28"	19"	8.5"	24"
M	21.5"	28.5"	19.5"	8.5"	24"
L	22.5"	29"	20"	9"	24.5"
XL	23.5"	30"	21"	9.5"	25"
2XL	24.5"	31"	21.5"	10"	25.5"
3XL	25.5"	32"	22.5"	10.5"	26"
4XL	26.5"	33"	23.5"	10.5"	26.5"
5XL	27.5"	33.8"	24.5"	11"	26.5"
6XL	28.5"	34.4"	25.5"	11"	27"



(inch)

EPA Coolon Shirt



Zip-up Shirt

M32F-001



V-neck Shirt

M32F-002



Round Shirt

M32F-003



Zip-up Shirt (Long Sleeves)

M32F-004



Polo Shirt

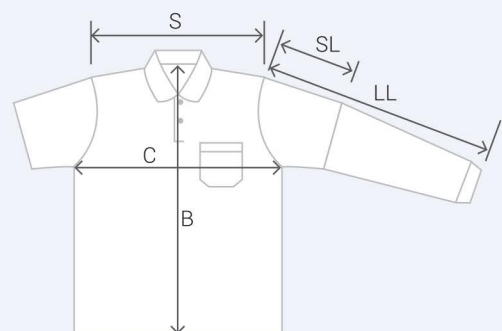
M32F-007

Descriptions

- Designed for using in EPA area with excellent ESD properties.
- No static, quickly disperse the sweat.
- Soft and dry touch like cotton
- Tailored in UNISEX Design.
- Colored conductive sewing thread
- Color: White, Royal Blue, Black



Mark	Chest (C)	Back Length (B)	Shoulder Width (S)	Sleeve Length	
				Short (SL)	Long (LL)
XS	19.5"	27.5"	18.5"	8"	23.5"
S	20.5"	28"	19"	8.5"	24"
M	21.5"	28.5"	19.5"	8.5"	24"
L	22.5"	29"	20"	9"	24.5"
XL	23.5"	30"	21"	9.5"	25"
2XL	24.5"	31"	22"	10"	25.5"
3XL	25.5"	32"	23"	10.5"	26"
4XL	26.5"	32.5"	23.5"	11"	26.5"
5XL	27.5"	33"	24"	11.5"	27"
6XL	28.5"	33"	24"	11.5"	27"



(inch)

TEST (Sleeve to Sleeve)



Features

- Meet ANSI/ESD S20.20-2014 (ANSI/ESD STM2.1, Groundable Static Control Garment System)
- Compliance with EN 61340-5-1 and EN 61340-2-1
- Typical surface resistance: 10e6~10e7 ohm (both sides)



Recommended Cleaning Process

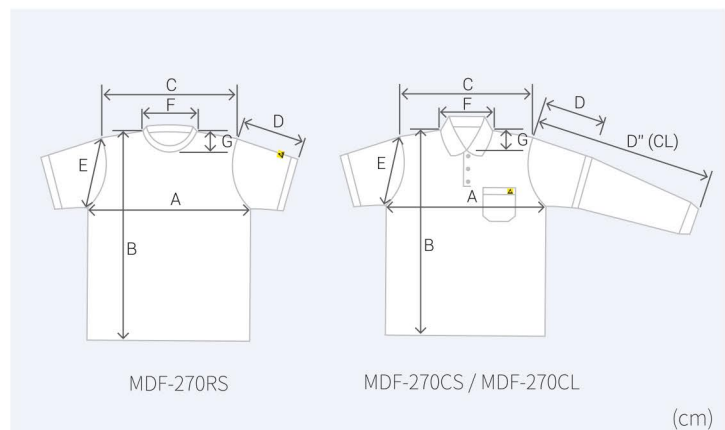


- Machine washable up to 40°C
- Hang dry at 50°C (120°F) or lower
- Tumble-dry at low temperature
- Do not bleach
- Do not use alkali, acid or fabric softener containing chlorine bleach

ESD Cotton Shirt



M21F-001



(cm)

Model	Type
MDF-270CS	T-shirt with collar and short sleeves
MDF-270RS	T-shirt with round neck and short sleeves
MDF-270CL	T-shirt with collar and long sleeves
MDF-270RL	T-shirt with round neck and long sleeves

- **Composition:** 80% of Cotton, 16.4% of Polyester & 3.6% of ECF
- **Weight:** 172 g/sqmt
- **Typical point to point resistance:** 10e6 ~ 10e7 ohm

Size	A	B	C	D	D''	E	F		G	
				RS/CS	CL		RS	CS/CL	RS	CS/CL
XS	47	63	41	22.5	57	21.5	18	17	9.5	9.6
S	49.5	65	42.5	23.5	57	22	18.5	17	9.8	9.6
M	52	67	44	24.5	58	23	19	17	10.1	9.6
L	54.5	69	45.5	24.5	60	24	19.5	18	10.4	10.3
XL	57	71	47	25.5	60	25	20	18	10.7	10.3
2XL	59.5	73	48	26.5	62	25.5	20.5	18	11	10.3
3XL	62	75	50	26.5	62	26	21	19	11.3	10.3
4XL	64.5	77	52	27.5	63	26.5	21	19	11.3	10.3
5XL	67	79	54	28.5	63	27	21	19	11.3	10.3

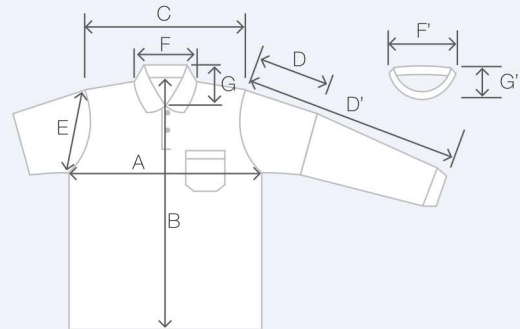
*Allowance: ±5%

ESD Cotton Shirt



M21F-006

- **Composition:** 96% of Cotton and 4% of ECF
- **Weight:** 185 g/sqmt
- **Typical point to point resistance:** 10e6 ~ 10e7 ohm



(cm)

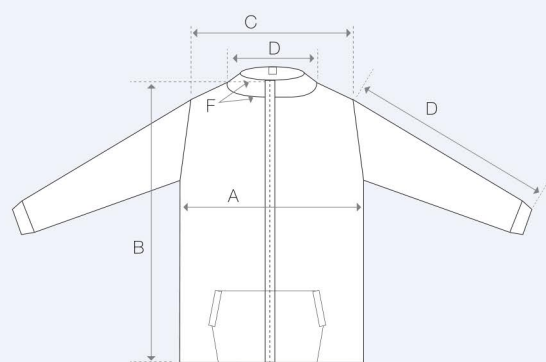
Size	Descriptions	S	M	L	XL	2XL	3XL	4XL	5XL
A	Chest	49	51	53.5	56	58.5	61.5	64.5	67.5
B	Height	70	72	74	77	79	81	83	85
C	Overarm	41.5	43	45	47	49	51	53	55
D	Sleeve	24	25	26	27	28	30	31	32
D'	Sleeve	57	58	59	60	61	62	63	64
E	Sleeve/W	21	22	24	26	27.5	29	30	31
F	Neck	17	17	17	18	18	18	18	19
F'	Neck	18	18	19	19	20	20	21	21
G	Neck/H	9	9	9	10	10	10	10	10
G'	Neck/H	10	10	10	10.5	10.5	10.5	11	11

ESD Cardigan



M35F-001

- **Composition:** 91% of Polyester (Polar fleece) and 9% of ECF
- **Weave:** Terry
- **Weight:** 250 g/sqmt
- **Typical point to point resistance:** 10e6 ~ 10e7 ohm



(cm)

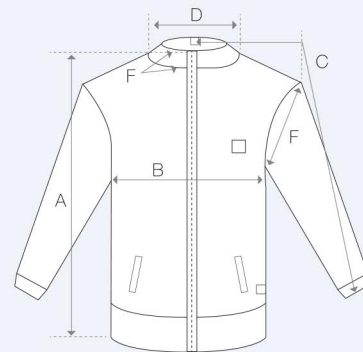
Size	Descriptions	XS	S	M	L	XL	2XL	3XL	4XL	5XL
A	Chest	53	54	55	57.5	60	62.5	64	65.5	67
B	Back Height	63.5	65	66.5	69	71.5	74	75.5	77	78.5
C	Shoulder	41	43	45	47	48.5	50	52	54	55
D	Arm Length	57	58	59	60	61	62	63	64	65
E	Back Neck	17	17	17	17	18	18	18	19	19
F	Depth of Neck	9	9	9	9	9	9	9	9	9

ESD Cardigan



M21F-005

- **Composition:** 90% of Cotton, 8% of Polyester and 2% of ECF
- **Weight:** 300 g/sqmt
- **Typical point to point resistance:** 10e6 ~ 10e7 ohm



(cm)

Size	Descriptions	XS	S	M	L	XL	2XL	3XL	4XL	5XL
A	Back Height	63	65	67	69	71	73	75	77	79
B	Chest	50	53	56	59	62	65	68	71	74
C	Sleeve	88	89.25	90.5	91.75	93	95.25	95.5	96.75	98
D	Back Neck	19	19.5	20	20.5	21	21.5	22	22.5	23
E	Depth of Neck	7.5	8	8.5	9	9.5	10	10.5	11	11.5
F	Sleeve at Widest	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5

ESD Light Gown



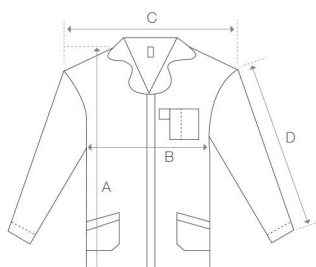
M04F-013

Descriptions

- Designed for using in EPA with excellent ESD properties.
- Light weight: 79 g/sqmt
- ESD logo and a pen slot on the pocket
- Grounding studs (Left & Right)
- Cuff snap buttons (Front & Right)
- Fabric: MDF-153U (90% Polyester & 10% Carbon)
- Made In Korea

Features

- Meets the performance under ANSI/ESD S20.20-2014 (ANSI/ESD STM2.1, Groundable Static Control Garment System)
- Compliance with EN 61340-5-1 and EN 61340-2-1
- Typical sleeve to sleeve resistance: less than 3.5 x 10e7 ohm



(cm)

Size	XS	S	M	L	XL	2XL	3XL
A	72	74	76	78	80	82	84
B	96	104	114	124	134	144	154
C	40	44	49	54	59	64	69
D	58.5	61	63.5	66	68.5	71	73.5

ESD Lab Coat



M04F-002



Descriptions

- Hip length, shirt collar
- 3 patch pockets with triangular reinforcement
- Snap at front opening
- All seams are stitched with serge
- Shirt cuffs
- 100% conductive sewing thread was used
- Fabric: MDF-150 (small diamond, S/R: 10e6)

(cm)

Size	Chest	Sleeve	Center Back	Shoulder
XXS	101	46	66	47
XS	107	48	69	48
S	112	51	71	51
M	119	55	76	52
L	123	57	77	55
XL	131	58	80	58
2XL	135	60	83	61
3XL	140	63	86	63

ESD Tool Vest



Back



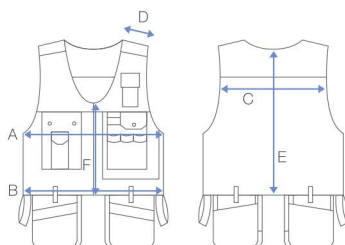
M36F-001

Descriptions

- **Composition:** 62% of Polyester, 34% of Cotton & 4% of ECF
- **Weight:** 208 g/sqmt
- **Typical point to point resistance:** 10e6 ~ 10e7
- Numerous tool pockets & holders



(cm)



Size	Descriptions	42	44	46	48	50	52	54	56	58	60	62	64	66
A	1/2 chest	47.0	49.0	51.0	53.0	55.0	57.0	59.0	61.0	63.0	65.0	67.0	69.0	71.0
B	1/2 bottom	46.0	48.0	50.0	52.0	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
C	Back width	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0	45.0	46.0
D	Shoulder	9.8	10.1	10.4	10.7	11.0	11.3	11.5	11.9	12.2	12.5	12.8	13.1	13.4
E	Back length	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0	63.0	64.0	65.0	65.0
F	Zipper length	32.0	32.0	32.0	34.0	34.0	34.0	34.0	36.0	36.0	36.0	38.0	38.0	38.0

Lint Free Sewing Thread

Product	Non-ESD polyester sewing thread
Item Code	M13F-001
Color	White, Sky Blue, Navy Blue and Olive Green
Packing	245 g/cone, 10 cones/box, 10 boxes/carton

· Free of particle generation

Product	Conductive stainless steel yarn thread
Item Code	M13F-004
Composition	Polyester 93%, Stainless 7%
Surface Resistance	10e3 ohm
Thickness	466 denier (3 ply)
Packing	245 g/cone, 4700 m/cone

*Meets ANSI/ESD S20.20-2014

Product	Conductive carbon yarn thread
Item Code	M13F-006
Surface Resistance	10e6 ohm
Color	Grey
Packing	143 g/cone, 10 cones/box, 10 boxes/carton

· Free of particle generation & ESD control



M13F-001



M13F-004

M13F-006



M14F-001

Conductive Lint Free Ribbon

Item Code	M14F-001	M14F-002
Surface Resistance	10e6 ohm	
Color	Grey	
Width	13 mm	3.2 mm
Composition	Polyester yarn 98%, Carbon yarn 2%	
Packing	100 yards/bundle, 10 bundles/box	500 yards/bobbin, 10 bobbins/box

Item Code	M14F-004
Surface Resistance	10e3 ohm
Color	Metallic Silver
Width	6 mm
Length	1,000 yard/bobbin
Composition	Polyester yarn 98%, Silver yarn 2%



M14F-002



M14F-004

Conductive Knitted Cuff Fabric



Item Code	M15F-001	M15F-012
Yarn (Denier)	DTY 300D	
ECF (BASF)	F-901 (BASF)	
Density (Threads/Inch)	18W × 32C	
Weave	1 × 1 RIB	
Dimension (cm×yd)	8 cm Tube × 100yds	10 cm Tube × 100yds
Weight (g/liner yd)	54	67.5
Surface Resistance (ohm)	10e6 ~ 10e7	

Conductive Spiral Cuff



Item Code	M15F-009
Yarn (Denier)	DTY 150D
ECF (BASF)	Silver Plated Yarn (39/10 dtex)
Density (Threads/Inch)	22W × 29C
Weave	1 × 1 RIB
Dimension (cm×yd)	6 pcs (3 pairs)/yd × 100 yds
Weight (g/liner yd)	54
Surface Resistance (ohm)	10e2 ~ 10e3

ESD Socks

ESD Socks will be a good choice for any employees working in the manufacturing process of electronic components where static control is required.

Item Code	M27F-001-GR-size
Materials	Cotton 81%, Spandex 16%, Carbon yarn 3%
Surface Resistance	10e5 ~ 10e7 ohm
Size	M, L, XL
Color	Light Grey
Packing	1 prs/Bag

Features

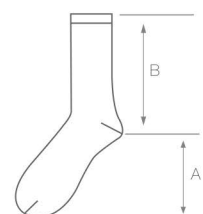
- Good ESD properties
- Low particles generation

Applications

- Assembly work in electronic production and semiconductors



				(cm)
Size	M	L	XL	
A	20	23	25	
B	13	14	15	



Cleanroom Socks



VIDEO

Features

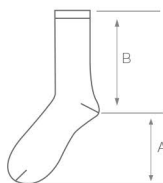
- Cleanroom compatible
- Autoclavable
- Meet EU GMP Annex 1, Section 7.14
- Unisex
- Mid-calf length (M28F-001)
- One-size-fits-all (M28F-002, 005)
- Tube socks with no heel (M28F-002, 005)
- Reusable (M28F-001, 002)
- Single use only (M28F-005)

Standard Socks (Mid-calf length)



Item Code	M28F-001-color-size
Material	Polyester
Color	White (WH), other colors are available on request
Packing	1 pair/individual bag, 10 pairs/bag, 20 bags/carton
Size	S, M, L, XL

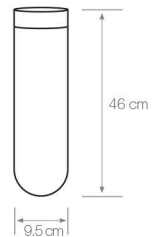
	(cm)			
Size	S	M	L	XL
A	23	24	25	25
B	25	26	27	28



Tube Socks with no heel

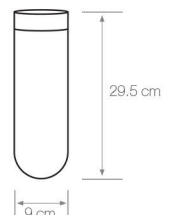


Item Code	M28F-002-color
Material	Polyester
Color	White (WH), Pink (PK), etc.
Packing	1 pair/bag
Size	9.5 cm(W) × 46 cm(L) with 5.3 cm cuff



Disposable Socks

Item Code	M28F-005-WH
Material	Polyester + Nylon
Color	White
Packing	1 pair/bag, 20 pairs/double bag, 20 double bags/ctn
Size	9 cm(W) × 29.5 cm(L)



According to the new EU GMP (Good Manufacturing Practices) Annex 1, outdoor clothing including socks (other than personal underwear) should not be brought into changing rooms leading directly to grade B and C areas. Single or two-piece facility trouser suits, covering the full length of the arms and the legs, and facility socks covering the feet, should be worn before entry to change rooms for grade B and C. Facility suits and socks should not present a risk of contamination to the gowning area or processes. (EU GMP Annex 1, Section 7.14, 2022 version- Aug. 25th, 2022)

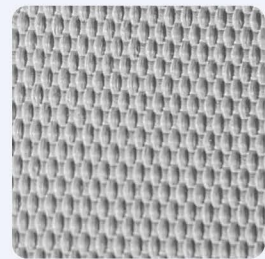
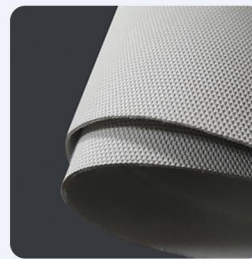
CSM Rubber Sheet

The CSM (Chlorosulfonated polyethylene) rubber sheet reinforced with high tenacity polyester fabric is a kind of a very particular material for the bottom soles of cleanroom overshoes or the webbing material on the overshoes. Coming in a sheet form, it can be applied to the various shapes and the sizes of the soles according to each customer's need, unlike many existing ready-made soles.



Features

- Excellent chemical resistance
- Anti-slip
- Bendable at a low temperature (-45°F)
- Strong resistance to abrasion
- Autoclavable (withstand up to 120°C)
- Gamma-ray stable at min. 737 kGy/max. 760.8 kGy
- Antistatic finish (10e10 ~ 10e11 ohm)



Item Code	M20F-001
Chlorosulfonated polyethylene (HYPALON)	518 g/m ²
Polyester fabric	248 g/m ²
Width	56 inch
Weight	1,000 g/yard
Thickness	0.80 ± 0.05 mm
Packing	30 yds/roll
Constructions	 • Polyester fabric (front) • CSM Rubber (back)



Test	Std.	Result	Unit	Test Method
Color	Light Grey			Visual
Width (trimmed)	56		inch	ASTM D 751-19
Total Weight	24.0 ± 3.0		oz/yd ²	ASTM D 751-19
Thickness	0.8 ± 0.05		mm	ASTM D 751-19
Mullen Burst	>2275 (330)	3246 (471)	kPa (psi)	ASTM D 751-19
Trapezoid Tear	Warp: > 44.5 (10) Weft: > 44.5 (10)	Warp: 84.9 (19.1) Weft: 73.8 (16.6)	N (lbf)	Fed. Std 191A-5136
Grab Tensile	Warp: > 1223 (275) Weft: > 1223 (275)	Warp: 2710 (609) Weft: 1406 (316)	N (lbf)	ASTM D 751-19
Elongation	Warp: > 30 Weft: > 30	Warp: 32.7 Weft: 41.4	%	ASTM D 751-19
Adhesion - Side 1	> 35.6 (8)	72 (16.20)	N (lbs. inch)	Fed. Std 191A-5970
Taber Abrasion - Side 1	> 1900	2000	cycles	ASTM D 3389-16
Slip Resistance	Dry 0.98 / Wet 0.88			ASTM D 1894-11

MEC Fabric Collection

No.	Model	ECF	Weave	Width (inch)	Weight (g/sqmt.)	No.	Model	ECF	Weave	Width (inch)	Weight (g/sqmt.)
1-1	MDF-507	F-901 (BASF)	1/2twill (3.5 mm stripe)	58"/60"	96	3-4	MDF-110	B-31 (Kanebo)	1/2twill (5 mm stripe)	58"/60"	112
1-2	MDF-170	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	107	3-5	MDF-302	B-31 (Kanebo)	2/2twill (5 mm stripe)	58"/60"	102
1-3	MDF-235	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	129	3-6	MDF-125	B-31 (Kanebo)	2/3twill (5 mm stripe)	58"/60"	118
1-4	MDF-245	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	166	3-7	MDF-303	B-31 (Kanebo)	Taffeta (8 mm stripe)	58"/60"	115
1-5	MDF-171	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	107	3-8	MDF-304	B-31 (Kanebo)	Taffeta (12 mm stripe)	58"/60"	112
1-6	MDF-503	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	79	3-9	MDF-190	B-31 (Kanebo)	1/2twill (20 mm stripe)	58"/60"	107
1-7	MDF-157	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	175	3-10	MDF-306	F-901 (BASF)	Taffeta (2.5 mm check)	58"/60"	97
1-8	MDF-501	F-901 (BASF)	2/3twill (5 mm stripe)	58"/60"	107	3-11	MDF-142	B-31 (Kanebo)	1/2twill (4 mm check)	58"/60"	169
1-9	MDF-195	F-901 (BASF)	Taffeta (20 mm stripe)	58"/60"	83	3-12	MDF-307	B-31 (Kanebo)	2/3twill (4 mm check)	58"/60"	115
1-10	MDF-167	F-901 (BASF)	1/2twill (2.5 mm check)	58"/60"	109	3-13	MDF-211	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	93
1-11	MDF-505	F-901 (BASF)	1/2twill (2.5 mm check)	58"/60"	109	3-14	MDF-210	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	96
1-12	MDF-160	F-901 (BASF)	1/2twill (5 mm check)	58"/60"	107	3-15	MDF-308	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	100
1-13	MDF-161	F-901 (BASF)	1/2twill (5 mm check)	58"/60"	107	3-16	MDF-309	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	90
1-14	MDF-512	F-901 (BASF)	Taffeta (5 mm check)	58"/60"	104	3-17	MDF-310	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	71
1-15	MDF-162	F-901 (BASF)	2/3twill (5 mm check)	58"/60"	107	3-18	MDF-311	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	133
1-16	MDF-502	F-901 (BASF)	2/3twill (5 mm check)	58"/60"	107	3-19	MDF-312	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	104
1-17	MDF-166	F-901 (BASF)	2/2twill (5 mm check)	58"/60"	120	3-20	MDF-199UT	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	95
1-18	MDF-169	F-901 (BASF)	2/2twill (5 mm check)	58"/60"	107	3-21	MDF-118	B-31 (Kanebo)	1/2twill (5 mm check)	58"/60"	113
1-19	MDF-145	F-901 (BASF)	2/3twill (7 mm check)	58"/60"	109	3-22	MDF-165	B-31 (Kanebo)	1/2twill (5 mm check)	58"/60"	119
1-20	MDF-506	F-901 (BASF)	2/3twill (3x10 mm check)	58"/60"	107	3-23	MDF-313	B-31 (Kanebo)	1/2twill (5 mm check)	58"/60"	105
1-21	MDF-509	F-901 (BASF)	2/3twill (5x3.5 mm check)	58"/60"	107	3-24	MDF-314	B-31 (Kanebo)	2/1twill (5 mm check)	58"/60"	102
1-22	MDF-140	F-901 (BASF)	1/2twill (10 mm check)	58"/60"	116	3-25	MDF-315	B-31 (Kanebo)	2/2twill (5 mm check)	58"/60"	108
1-23	MDF-513	F-901 (BASF)	1/2twill (10 mm check)	58"/60"	109	3-26	MDF-316	B-31 (Kanebo)	2/2twill (5 mm stripe)	58"/60"	148
1-24	MDF-156C	F-901 (BASF)	Taffeta (4 mm check)	58"/60"	170	3-27	MDF-127	B-31 (Kanebo)	2/3twill (5 mm check)	58"/60"	119
1-25	MDF-156CU	F-901 (BASF)	Taffeta (3.5 mm check)	58"/60"	134	3-28	MDF-130	B-31 (Kanebo)	2/3twill (5 mm check)	58"/60"	107
1-26	MDF-514	F-901 (BASF)	Taffeta (5 mm check)	58"/60"	118	3-29	MDF-148	B-31 (Kanebo)	2/3twill (5 mm check)	58"/60"	115
1-27	MDF-515	F-901 (BASF)	Pique (4 mm stripe)	55"	236	3-30	MDF-317	B-31 (Kanebo)	Taffeta (6 mm check)	58"/60"	140
						3-31	MDF-164	B-31 (Kanebo)	1/2twill (7 mm check)	58"/60"	120
2-1	MDF-150	F-901 (BASF)	4bar net (diamond)	58"/60"	165	3-32	MDF-318	B-31 (Kanebo)	Rib (7 mm check)	58"/60"	110
2-2	MDF-153	F-901 (BASF)	4bar net (diamond)	58"/60"	79	3-33	MDF-146	B-31 (Kanebo)	1/2twill (8 mm check)	58"/60"	151
2-3	MDF-152	F-901 (BASF)	4bar net (diamond)	58"/60"	100	3-34	MDF-149	B-31 (Kanebo)	1/2twill (8 mm check)	58"/60"	182
2-4	MDF-155	F-901 (BASF)	4bar net (diamond)	58"/60"	155	3-35	MDF-305	B-31 (Kanebo)	2/2twill (Tartan check)	58"/60"	160
2-5	MDF-250	F-901 (BASF)	Pique (7 mm stripe)	70"/72"	148	3-36	MDF-319	B-31 (Kanebo)	2/2twill (5x6 mm check)	58"/60"	130
2-6	MDF-320	F-901 (BASF)	Memory (10 mm stripe)	60"	205						
2-7	MDF-270	F-901 (BASF)	Pique	60"	172	5-1	MDF-216	Non	Herringbone twill	58"/60"	140
2-8	MDF-270S	F-901 (BASF)	Pique	68"	323	5-2	MDF-215	Non	Taffeta	58"/60"	89
						5-3	MDF-217	Non	1/2 twill	58"/60"	151
3-1	MDF-221	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	92	5-4	MDF-199Micro	Non	Taffeta	58"/60"	95
3-2	MDF-220	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	93	5-5	MDF-218	Non	Taffeta	58"/60"	92
3-3	MDF-301	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	95	5-6	MDF-219	Non	Taffeta	58"/60"	145