

Materials & Products ■

SOFT PARTITION

ACHILLES ENGINEERING FLEXIBLE PVC FILM 2022



CAUTION

<PVC FILM>

- •Actual colors are different from colors in the catalog due to printing conditions.
- Generally, the degradation of PVC film may be accelerated by UV lights, chemical substances such as solvents in the air and ozone. Monitor and replace the film as needed.
- •Flexible PVC film, when in contact with a different kind of plastic for a long time, may cause contamination of the plastic surface due to migration of plasticizer. Before applying it on plastic materials, consult with your agent to make sure that no problem will occur.
- •Flexible PVC film does not have heat-resistance. Do not use in places cause the film temperature increasing over 60°C.
- •Dimensions of flexible PVC film will change depending on use conditions as the property.
- •When you dispose plastic products, please observe the method specified by the local government.
- Conductive printed grid on SEIDEN-F series may store electricity without being grounded. These products must be grounded when in use.
- Please ask us about design, installation and caution in use.
- ●No CE mark is attached on products comply with REACH regulation and RoHSII Directive.
- CE marks are not required unless you place the product in EU market as a single part.

 CATALOG>
- •Information included in this catalog may change without notice for improvement.
- •All data in this catalog are typical measured values, not guaranteed values.
- •Some photos included in this catalog are for illustration purposes.
- •Recommended to store in temperature between 10°C and 30°C and relative humidity less than 50%. Avoid direct sunlight, heat and moisture.

ACHILLES CORPORATION

CHILLES CORPORATION

Chemical Products Division

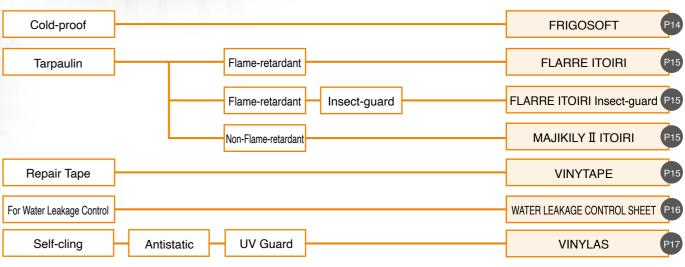
Head Office

Shinjuku Front Tower, 2-21-1, Kita-Shinjuku, Shinjuku-ku, Tokyo 169-8885 Tel: 81-3-5338-9279 Fax: 81-3-5338-9405 https://www.achilles.jp

Achilles Soft Partition Series realize high cleanliness, energy saving and cost saving by meeting various requirements for the space management.

Compliant Products with REACH Regulation and RoHSII Directive **Curtain Type** SEIDEN-F Antistatic Printed grid Flame-retardant SEIDEN-FW SEIDEN-F (Both Sides Printed) P6 Clear SEIDEN CRYSTAL Concealable **BLACK SEIDEN-F** Shading BLACK SEIDEN-F (Both Sides Printed) SEIDEN CRYSTAL BK Low Sticky SEIDEN CRYSTAL NASHIJI P9 Non-antistatic Clear **FLARRE** Insect-guard FLARRE Insect-guard WELDING CURTAIN Arc Light Protection **Other Products** WORKING TABLE MAT II P10 Non-migratory For optical mouse use

Non-Compliant Products with REACH Regulation and RoHSII Directive Strip Type MIERU Antistatic and Flame-retardant Antistatic Clear Flame-retardant MIERU Antistatic, Insect-guard Flame-retardant and Insect-quard Non-Flame-retardant Antistatic MIERU Antistatic Low Sticky MIERU LINE Antistatic Insect-guard MIERU Antistatic and Insect-guard MIERU LINE Antistatic and Low Sticky Insect-guard Concealable Semi-shading MIERU SMOKE Antistatic Cold-proof Low Sticky MIERU LINE Cold-proof Non-Antistatic Clear **Folding Type ORERU CRYSTAL** Flame-retardant Antistatic Clear Clear ORERU Flame-retardant Non-Antistatic ORERU Flame-retardant and Insect-guard Insect-guard Clear Non-Flame-retardant **ORERU Standard** Non-Antistatic **Other Products** Cold-proof **FRIGOSOFT** FLARRE ITOIRI Tarpaulin Flame-retardant



CONTENTS

《Arc Light Protection》·····	5
WELDING CURTAIN	
《Antistatic Type》·····	6-7
SEIDEN-F	
SEIDEN-F (Both Sides Printed)	
SEIDEN CRYSTAL	
SEIDEN-FW	
《Antistatic and Shading Type》·····	В
BLACK SEIDEN-F	
BLACK SEIDEN-F (Both Sides Printed)	
SEIDEN CRYSTAL BK	
《Antistatic and Matte-finish Type》······	9
SEIDEN CRYSTAL NASHIJI	
《Flame-retardant Type》······	9
FLARRE	
Flame-retardant = Self-extinguishing	
《Insect-guard Type》····································	10
FLARRE Insect-guard	
Mechanism of insect-guard effect and Insect-guard testing	
《Non-migratory for Optical Mouse Use》······	10
WORKING TABLE MAT II	

《Strip Type Door Curtain》 ·····	11-12
MIERU Antistatic	
MIERU Antistatic and Flame-retardant	
MIERU Antistatic and Insect-guard	
MIERU Antistatic, Flame-retardant and Insect-guard	
MIERU SMOKE Antistatic	
MIERU LINE Antistatic	
MIERU LINE Antistatic and Insect-guard	
《Cold-proof Type Door Curtain》	
MIERU LINE Cold-proof	
《Folding Type Curtain》 ······	13
ORERU Standard	
ORERU Flame-retardant	
ORERU Flame-retardant and Insect-guard	
ORERU CRYSTAL	
《Cold-proof Type》 ······	14
FRIGOSOFT	
Cold-proof testing	
《Tarpaulin》 ·····	15
FLARRE ITOIRI	
FLARRE ITOIRI Insect-guard	
《Repair Tape》 ······	15
VINYTAPE	
《For Water Leakage Control》 ······	16
WATER LEAKAGE CONTROL SHEET	
《Self-cling, Antistatic and UV Guard Type》	17
VINYLAS	
《Physical Properties》 ······	18-19

Legend **Product Type**



General Purpose Soft Partition









Foldable Type

Stick-on Type



Function Type



Flame-retardant

Insect-guard

Antistatic



Shading (Smoke)







Concealable

Arc Light Protection



UV Guard



Non-migratory

Cold-proof

Compliant Products with REACH Regulation and RoHS II Directive

FUNCTIONAL FILM

Achilles has developed PVC films to comply with REACH regulation and RoHS II directive.

These products do not contain substances of very high concern exceeding the thresholds which have been determined by REACH regulation(1st-25th SVHCs as of January 14, 2022). The restricted 10 substances of RoHS II directive are also not included exceeding the thresholds.

Arc Light Protection

▶ Compliant with REACH Regulation and RoHSII Directive

ACHILLES WELDING CURTAIN







Intense light produced by arc welding or arc cutting contains substantial UV light that are harmful to eyes.

ACHILLES WELDING CURTAIN is a flame-retardant flexible PVC film developed to protect eyes of workers from such UV light and other intense visible light.

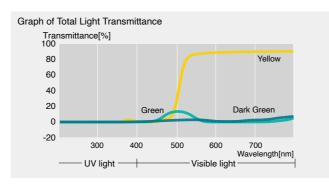
Moderate transparency of ACHILLES WELDING CURTAIN permits visibility of work from outside of the curtain, securing a well lit work environment comfortable for the workers.

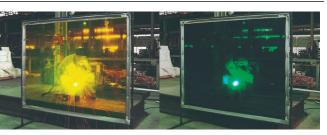
Three different colors with different light transmissions are available for selection depending on work location and conditions.

- Controls transmission of harmful UV light.
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.
- Oxygen index 28 (Based on JIS K 7201)

⚠ CAUTION

- ① Do not use for personal protective gears like safety glasses.
- ② Do not use for laser welding protection.







STANDARD SIZE

Product	WELDING CURTAIN						
Color	Yellow	Green	Dark Green				
Thickness [mm]	0.35	0.35	0.35				
Width [cm]	137	137	137				
Length [m]	40	40	40				
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.						

ACHILLES SEIDEN-F ACHILLES SEIDEN-F (Both Sides Printed)









ACHILLES SEIDEN-F is a flexible clear PVC film with good antistatic performance by the conductive printed grid and flame retardancy.

ACHILLES SEIDEN-F (Both Sides Printed) has the conductive printing on front-back both sides.

*Only 0.3mm thickness is availble for ACHILLES SEIDEN-F (Both Sides

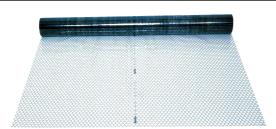
*Our company logo or the product name is printed on the center of product.

PROPERTY

- Surface resistivity 10⁶ Ω on printed side (Based on JIS C 2170)
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.
- Oxygen index 26 or more (Based on JIS K 7201)

⚠ CAUTION

- ① SEIDEN-F and SEIDEN-F(Both Sides Printed) must be grounded when in
- ② Do not use solvents which damage the conductive printed grid.





Grounding example

ACHILLES SEIDEN CRYSTAL

ACHILLES SEIDEN CRYSTAL is a specially formulated antistatic PVC film with good transparency as well as flame-retardancy. The product is available in thickness ranging from 0.1mm to 3.0mm.

*Our company logo or the product name is printed on the center of product.

- Surface resistivity 10⁹Ω (Based on JIS C 2170)
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.
- Oxygen index 24 or more (Based on JIS K 7201)

⚠ CAUTION

- ① SEIDEN CRYSTAL may degrade due to aging, depending on environmental conditions. Monitor and replace this product as needed.
- ② No need to be grounded for SEIDEN CRYSTAL SERIES.



STANDARD SIZE

Product	SEIDEN-F		(Both Sides Printed)	SEIDEN CRYSTAL						
Color	Clear		Clear	Clear						
Thickness [mm]	0.1	0.1 0.3 0.5		0.3	0.1	0.3	0.5	1.0	2.0	3.0
Width [cm]	137	137	137	137	183	137 / 183	137	137	137	120
Length [m]	50	30	20	30	50	30	20	10	10	10
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.									

ACHILLES SEIDEN-FW







ACHILLES SEIDEN-FW is a flexible PVC film with good antistatic and flame-retardant properties.

Conductive printed grid is sandwiched between two layers of SEIDEN CRYSTAL.

0.3mm thickness is available.

Antistatic Type

*Our company logo or the product name is printed on the center of product.

- Surface resistivity 10°Ω (Based on JIS C 2170)
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.
- Oxygen index 27 (Based on JIS K 7201)

CAUTION

SEIDEN-FW must be grounded when in use.

APPLICATION

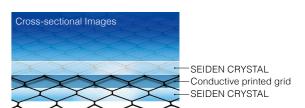
Since conductive printed grid is protected by both sides of film to avoid peeling, this product is suitable for not only ordinary partitions but also wrapping around non-antistatic pipe and floor mat.

Example of use

- · Partition for cleanroom
- ESD protection film
- ·Table mat, Tray mat
- · Underlay sheet for shelf and rack







STANDARD SIZE

Product	SEIDEN-FW
Color	Clear
Thickness [mm]	0.3
Width [cm]	137
Length [m]	30
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.

ACHILLES BLACK SEIDEN-F ACHILLES BLACK SEIDEN-F (Both Sides Printed) ACHILLES BLACK SEIDEN-F (Both Sides Printed)









ACHILLES SEIDEN CRYSTAL BK

ACHILLES BLACK SEIDEN-F has the shading propery for dark space in the cleanroom and the same good flame-retardancy and antistatic performance by carbon printed grid as SEIDEN-F. ACHILLES BLACK SEIDEN-F (Both Sides Printed) has the conductive printed gird on both sides of ACHILLES BLACK SEIDEN-F.

ACHILLES SEIDEN CRYSTAL BK has the shading property with the same antistatic and flame-retardant performance provided by ACHILLES SEIDEN CRYSTAL.

*BLACK SEIDEN-F and BLACK SEIDEN-F (Both Sides Printed) have our company logo or the product name printed on the center of product.

PROPERTY

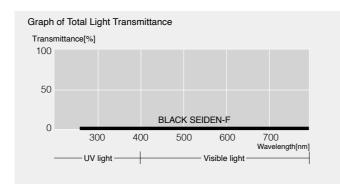
- Surface resistivity $10^6\Omega$ for the printed side of BLACK SEIDEN-F, $10^9\Omega$ for both sides of SEIDEN CRYSTAL BK (Based on JIS C 2170)
- Almost no UV light and visible light pass through.
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.
- Oxygen index 26 (Based on JIS K 7201)

⚠ CAUTION

- 1) BLACK SEIDEN-F and BLACK SEIDEN-F(Both Sides Printed) must be grounded when in use.
- 2 Do not use solvents which damage the conductive printed grid.
- 3 To avoid loss of shading effectiveness due to damage from RF welding sparks, repair holes by ACHILLES VINYTAPE "BSF".
- (4) SEIDEN CRYSTAL BK may degrade due to aging, depending on environmental conditions. Monitor and replace it as needed.







STANDARD SIZE

Product	BLACK SEIDEN-F/BLACK SEIDEN-F (Both Sides Printed)	SEIDEN CRYSTAL BK				
Color	Black	Black				
Thickness [mm]	0.3	0.3				
Width [cm]	137	137				
Length [m]	30 30					
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.					

ACHILLES SEIDEN CRYSTAL NASHIJI







ACHILLES SEIDEN CRYSTAL NASHIJI has the matte-finish surface on ACHILLES SEIDEN CRYSTAL to provide low stickiness and semi-transparency.

PROPERTY

- Same antistatic and flame-retardant perfomance and physical properties as SEIDEN CRYSTAL.
- Matte finish surface reduces the stickiness during curtain fabrication and installation to improve the working efficiency.
- This low sticky curtain can be opened and closed smoothly.
- Provides good brightness and comfortable semi shading environment. (No blackout property)
- Can be used as a simplified partition to blind in a dressing room of cleanroom and factory tour area.
- Surface resistivity 10⁹Ω (Based on JIS C 2170)
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan
- Oxygen index 26 (Based on JIS K 7201)



Flame-retardant Type

▶ Compliant with REACH Regulation and RoHSII Directive

ACHILLES FLARRE



ACHILLES FLARRE is a flexible clear PVC film with good flame-retardancy.

This film with many years of experience has been used in a wide range of applications and trusted.

*Our company logo or the product name is printed on the center of product.

Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.

Flame-retardancy of PVC film can be defined not only as having low ignition

which means that even if the PVC film is ignited the fire will not flare up and

Combustion comparison test between ACHILLES FLARRE and ordinary PVC

1. After 15 to 20 seconds (after flame started to contact), ACHILLES FLARRE

shows no sign of ignition, while ordinary PVC film is burning. 2. After 2 minutes, only a small flame is observed on ACHILLES FLARRE, while fire spreads all over on ordinary PVC film with large flames burning. 3. After flame source is removed, fire on ACHILLES FLARRE subsided and

Oxygen index 27 or more (Based on JIS K 7201)

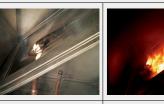
self-ignite in time, minimizing spread of the fire.

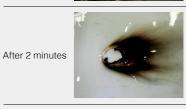
potential but also as having self-extinguishing property,

《Flame-retardancy i.e. self-extingushing property》

Combustion testing Test method: Based on JIS A 1322-1966, 45°Meker burner method 《ACHILLES FLARRE》 Ordinary film

After 15 to 20 seconds







ACHILLES FLARRE

The above well demonstrate ACHILLES FLARRE's flame retardancy, i.e. self-

the fire dies out, but with fire source existing, the fire will not die out.

Note, however, being self-extinguishing means that, with fire source removed,

STANDARD SIZE

film has shown that

finally self-extinguished.

extinguishing property.

Product	SEIDEN CRYSTAL NASHIJI	FLARRE					
Color	Clear	Clear	Clear	Clear	Clear	White	
Thickness [mm]	0.3	0.15	0.3	0.5	1.0	0.3	
Width [cm]	137	183	137 / 183	183	91.5 / 137	183	
Length [m]	30	50	30	30	10	30	
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.						

ACHILLES FLARRE Insect-guard







ACHILLES FLARRE Insect-guard has the good flame-retardancy and absorbs UV light. This keeps out insects that may otherwise be attracted to light source at night.

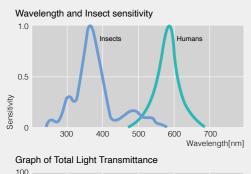
- Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan
- Oxygen index 27 or more (Based on JIS K 7201)

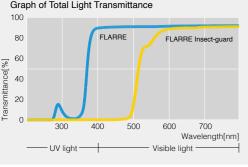
The Mechanism of Insect-guard Property

Insects gathering around a light source during night time are attracted by UV light (invisible to the human eye) from the light source.

Achilles insect-guard film effectively cuts light having wavelengths that attract insects, giving excellent effect of keeping insects out without damaging comfortable work environment

Notice: The above is effective only when insects are attracted by light sources. This is not effective if insects are attracted by heat or smell but not by light sources.







Testing for Insect-guard Effect

In the test, insects attracted by two different lights were dropped and captured in water tanks: one is black light screened with ACHILLES MIERU Insect-guard and the other is black light screened with 0.3mm thick transparent film. Insects tend to gather more onto the black lights.

The photo shows that number of insects collected with the light screened with ACHILLES

MIERU Insect-quard was much smaller. This demonstrates effectiveness of ACHILLES MIERU Insect-guard.





Non-migratory and Optical Mouse Use Type Compliant with REACH Regulation and RoHSII Directive

ACHILLES WORKING TABLE MAT II





ACHILLES WORKING TABLE MAT II is a flexible PVC sheet complys with REACH regulation and RoHSII Directive and suitable for use in electronic component factories.

- Reduces ink transfer and contamination from printed papers.
- Available for optical mouse.



STANDARD SIZE

0 .7 12 7 12 0.2	_				
Product		FLARRE Insect-guard			WORKING TABLE MAT II
Color		Orange		Color	Clear
Thickness [mm]	0.3	0.5	1.0	Thickness [mm]	1.2
Width [cm]	183	137	137	Width [cm]	92
Length [m]	30	20	10	Length [m]	10
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.				

Non-compliant with REACH Regulation and RoHSI Directive

FUNCTIONAL FILM with DOP

Achilles functional flexible films have a wide variety of items such as ACHILLES MIERU series for strip door curtains, ACHILLES ORERU for folding curtains, Cold-proof curtains and self-cling sheets suitable for special applications.

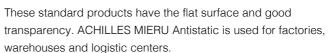
Strip Door Curtain

ACHILLES MIERU Antistatic **ACHILLES MIERU** Antistatic and Flame-retardant









ACHILLES MIERU Antistatic and Flame-retardant complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan and is suitable for factories and warehouses to handle combustibles.





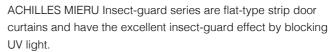
ACHILLES MIERU Antistatic and Insect-guard ACHILLES MIERU Antistatic, Flame-retardant and Insect-guard 🖟 🚫 🔀











These products are suitable for curtains and partitions of the entrance of factories facing insect problems in the night.



STANDARD SIZE

Product	MIERU Antistatic	MIERU Antistatic and Flame-retardant		MIERU Antistatic and Insect-guard			guard	MIERU Antistatic, Flame-retardant and Insect-guard
Color	Clear	Cle	Clear		ar Orange		Orange	
Thickness [mm]	2.0 / 3.0	2.0	3.0	2	.0	3	.0	2.0
Width [cm]	20 / 30	30	30	20	30	20	30	30
Length [m]	12 / 30	12 / 30	30	12 / 30	12 / 30	30	12 / 30	30
F/R	_	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.		_				Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.

ACHILLES MIERU SMOKE Antistatic







This is a door curtain for semi shielding with smoke color and suitable for the fruit and vegetable market and logistic center to avoid direct sunlight.

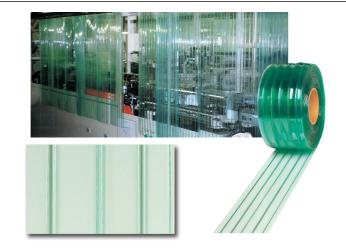


ACHILLES MIERU LINE Antistatic



This ribbed product reduces the stickiness on both side surfaces and prevents the friction damage.

It is suitable for partitions for the wide range of applications by good antistatic performance.



ACHILLES MIERU LINE Antistatic and Insect-guard

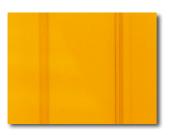






This product has ribbed surface to reduce the stickiness and good insect-guard effect by UV blocking.

It is suitable for curtains and partitions of the entrances of factories facing insect problems in the night.





Cold-proof Type

ACHILLES MIERU LINE Cold-proof





ACHILLES MIERU LINE Cold-proof has the good flexiblity and prevents the stickiness by the ribbed surface.

This product can be used under the low temperature and suitable for the refrigerated warehouses and cold areas.





STANDARD SIZE

Product	MIERU SMOKE Antistatic	MIERU LIN	E Antistatic	MIERU Line Antista	tic and Insect-guard	MIERU LINE Cold-proof		
Color	Smoke	New green		Orange		ew green Orange Clear		ear
Thickness [mm]	3.0	2.0	2.0 / 3.0	2.0	3.0	2.0	3.0	
Width [cm]	30	20	30	20/30	30	20/30	20/30	
Length [m]	30	30	30	30	30	30	30	
F/R	_	=	_	-	=	-	_	

Folding Curtain

ACHILLES ORERU Standard **ACHILLES ORERU** Flame-retardant





ACHILLES ORERU Series are unique foldable soft partitions using Achilles sheeting technology.

These curtains can be opened and closed smoothly, stored smartly and have the excellent effects for insulation, dustproof and energy saving.

ACHILLES ORERU Flame-retardant complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.



Insect-guard Type Folding Curtain

ACHILLES ORERU Flame-retardant and Insect-guard







ACHILLES ORERU Flame-retardant and Insect-guard is a foldable soft partition with the excellent insect-guard property by UV blocking.

It can be opened and closed smoothly and used effectively at the places need to comply with Japanese fire defense low.

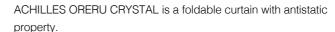


Antistatic Type Folding Curtain

ACHILLES ORERU CRYSTAL







It can be opened and closed smoothly, stored smartly and suitable for ESD curtains opened and closed frequently.

■ Surface resistivity 6.4 x 10⁹ Ω (Based on JIS C 2170)



STANDARD SIZE

Product	ORERU Standard	ORERU Flame-retardant	RERU Flame-retardant ORERU Flame-retardant and Insect-guard			
Color	Clear	Clear Green Orange		Clear		
Thickness [mm]	1.3	1.3	1.3	1.3		
Width [cm]	118	118	118	118		
Length [m]	12	12	12			
F/R	_	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.				

ACHILLES FRIGOSOFT



Ordinary flexible PVC film tends to be influenced by temperature changes, too stiff to be used as partition curtains at low temperatures.

ACHILLES FRIGOSOFT can maintain its flexibility at an extremely low temperature such as -60°C, thanks to the formulation technology unique to Achilles, which enables ACHILLES FRIGOSOFT to be effectively used as partition curtains in a frigid climate or in ultra low temperature fridges.







Testing for Cold-proof Performance

Two samples, one taken from FRIGOSOFT the other from ordinary flexible PVC film, are half-folded and cooled down to -60°C. On the samples, hammers having the same weight were dropped

from the same height onto the samples. Ordinary flexible PVC film, brittle under low temperature, was shattered into fragments, while FRIGOSOFT, maintaining flexibility at the low temperature, was not broken at all.



《ACHILLES FRIGOSOFT》 Cold-proof Performance

Thickness [mm]	1.0	2.0	3.0	Test Method
Cold-proof [°C]	-69	-67	-68	JIS K 7216

Above data are typical measured values, not guaranteed values.

STANDARD SIZE

Product		FRIGOSOFT										
Color		Clear										
Thickness [mm]	1.0	2.0	3.0									
Width [cm]	122	122	122									
Length [m]	10	10	10									
F/R		_										

Tarpaulin Type

ACHILLES FLARRE ITOIRI



ACHILLES FLARRE ITOIRI is a white polyester fabric sandwiched between two layers of flame-retardant PVC film.



ACHILLES FLARRE ITOIRI Insect-guard







ACHILLES FLARRE ITOIRI Insect-guard is a white polyester fabric sandwiched between two layers of flame-retardant and insectguard PVC film.



STANDARD SIZE

Product	FLARRE ITOIRI	MAJIKILY II ITOIRI	FLARRE ITOIRI Insect-guard
Color	Clear	Clear	Orange
Thickness [mm]	# 3000	# 3000	# 3000
Width [cm]	185	185	185
Length [m]	50	50	50
F/R	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.	_	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.

Repair Tape

ACHILLES VINYTAPE

ACHILLES VINYTAPE is an adhesive tape consisting of antistatic and flame-retardant flexible PVC film.

⚠ CAUTION

- ① Joints may include as the product design.
- 2 Conductive printed grid may be transferred to the backside.



STANDARD SIZE

Туре	N	M	S	F	Y	'S	BSF	PET		
Base Film	NON-N	IIGRA-F	SEID	EN-F	YELLOW	SEIDEN-F	BLACK SEIDEN-F	POLYESTER		
Property		igratory etardant		static etardant	Flame-r	static etardant Guard	Antistatic Flame-retardant Shading	Double-sided tape		
Item Code	NM50	NM100	SF50	SF100	YS50	YS100	BSF50	PET30	PET50	
Width [mm]	50	100	50	100	50 100		50	30	50	
Lenath [m]	50	50	50	50	50 50		50	50	50	

ACHILLES WATER LEAKAGE CONTROL SHEET

This product is designed for measures to control water leakage on the ceiling of buildings and stations.

It guides the flow of water smoothly. It is flexible, lightweight and easy to install.

⚠ CAUTION

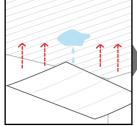
- Please install carefully so that it does not come off with due consideration of adhesive properties and various situations occur after the installation.
- Please also be careful of the connection of sheet, joint and hose not to come off in case of massive water leakage and strong pull.
- Please pay enough attention to safety during the installtion at a high place.
- Please do not bend the hose. The bent hose prevents the water flow and the leaked water may be pooled on the sheet. Then the sheet may fall due to the heavy weight.
- In case of the installation above pedestrians, please ensure safety of them by attaching the hose on the nearby wall and pillar.
- Please contact our distributor if you have any questions.



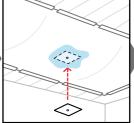


Hose is sold separately (Inner diameter 9mm / Outer diameter 11mm)

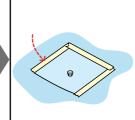
HOW TO USE



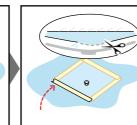
Put any large sheet on the water leaking area.

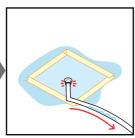


Install ACHILLES WATER LEAKAGE CONTROL SHEET on the large sheet.



Close three sides of ACHILLES WATER LEAKAGE CONTROL Cut a part of the large sheet. Close the remaining side. SHEET by tapes.





Install the joint and hose at the sheet plug.

ACHILLES VINYLAS









This self-cling product has antistatic property with $10^{10} \Omega$ of surface resistivity (for orange) and excellent UV blocking performance.

Ordinary glass gets UV blocking property by just put this sheet on the flat surface of the glass.

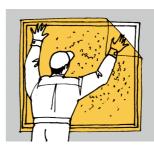
Since the sheet does not contain any adhesives, no adhesives left after peeled off.

⚠ CAUTION

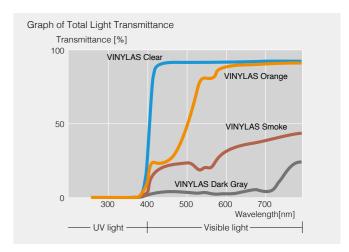
- 1) Apply only to glass with smooth surface. Not suitable for matte, embossed or curved surfaces
- 2 Flexible PVC film, when in contact with a different kind of plastic for a long time, may cause contamination of the plastic surface due to migration of plasticizer. Before applying ACHILLES VINYLAS on plastic materials, consult with your agent to make sure that no problem will occur.
- 3 ACHILLES VINYLAS can not be used as a shatter-resistant film.
- 4 Please do not use it in direct sunlight. Glass may break.
- ⑤ Please do not apply to wired glass.
- 6 Please ask a professionl contractor for installation.
- 7) Physical properties and appearance are almost the same as ordinary flexible PVC films.

HOW TO USE

- 1 Prepare ACHILLES VINYLAS with 10% larger size than the surface to be
- Thoroughly clean the glass surface. Then wet the surface with water spray.
- Separate VINYLAS from the releasing liner, and then, apply the VINYLAS releasing liner side to the wet glass surface.
- A Remove air and water from between the glass surface and the VINYLAS, from center to each side, using a plastic plate.
- 6 Cut excess film over the glass surface with a suitable cutting knife.







STANDARD SIZE

Product	WATER LEAKAGE CONTROL SHEET
Sheet	ACHILLES PVC Sheet
Size[mm]	0.1 (T) × 450 (H) × 450 (W)
Quantity	12 sheets / carton
Remark	12 pieces of each L-type and I-type joints included.

STANDARD SIZE

STANDARD SIZE									
Product	VINYLAS								
Color	Clear, Orange, Smoke, Dark Gray								
Thickness [mm]	0.2								
Width [cm]	100								
Length [m]	10								
F/R	_								

Table of Properties

Product Name			SEIDEN-F			SEIDEN-FW	BLACK SEIDEN-F	SEIDEN CRYSTAL					SEIDEN CRYSTAL		SEIDEN CRYSTAL BK	SEIDEN CRYSTAL NASHIJI	Test Method
Thickness [mm]			0.1	0.3	0.5	0.3	0.3	0.1	0.3	0.5	1.0		2.0	3.0	0.3	0.3	
Width [cm	n]		137	137	137	137	137	183	137/183	137	137		137	120	137	137	
Length [m	n]		50	30	20	30	30	50	30	20	10		10	10	30	30	
Color			Clear	Clear	Clear	Clear	Black	Clear	Clear	Clear	Clear		Clear	Clear	Black	Clear	
	100% Modulus[N/cm]	M.D.	22.8	39.6	58.3	44.5	36.2	9.6	40.4	47.0	86.9		152.3	204.6	31.6	34.9	
	100% Modulus[M/CITI]	T.D.	16.4	33.2	53.6	34.7	30.7	13.4	36.3	43.5	76.6		137.6	177.3	36.4	33.0	
	Tensile Strength[N/cm]	M.D.	35.8	93.0	135.4	102.3	84.7	21.5	90.6	125.1	222.7		389.4	527.8	71.6	82.8	Based on JIS K 6732 (The average of 3 pieces)
	Tensile offerigui[N/Citi]	T.D.	29.0	81.3	123.1	85.2	74.6	26.4	80.6	125.1	209.6		363.0	495.0	79.4	79.2	
Physical	Elongation[%]	M.D.	239	313	318	292	300	323	305	335	330		333	347	296	311	
		T.D.	300	340	314	354	317	248	330	354	362		344	372	280	321	
	Tear Strength[N]	M.D.	11.0	29.5	40.8	29.2	27.5	5.7	23.5	31.4	61.3		126.2	170.6	21.9	20.6	
		T.D.	9.2	25.8	39.3	23.3	22.8	5.0	21.7	30.6	58.7		120.7	165.1	21.8	19.8	
	Total Light Transmittance [%]		88.0	88.8	82.0	90.2	_	91.1	90.4	89.5	87.8		84.2	82.0	_	_	
	Surface Resistivity [Ω]	Тор	7.2×10 ⁶	1.9×10 ⁶	2.3×10 ⁶	2.7×10 ⁹	2.3×10 ⁶	5.4×10 ⁹	3.3×10 ⁹	3.0×10 ⁹	1.9×10 ⁹		1.8×10 ⁹	1.5×10 ⁹	4.2×10 ⁹	5.5×10 ⁹	Based on JIS C 2170
	Odridoc ricolotivity [12]	Bottom	8.9×10 ¹⁰	7.0×10 ¹⁰	6.6×10 ¹⁰	2.9×10 ⁹	2.7×10 ¹⁰	5.1×10 ⁹	3.2×10 ⁹	3.0×10 ⁹	1.6×10 ⁹		2.6×10 ⁹	1.9×10 ⁹	3.6×10 ⁹	5.3×10 ⁹	Tester: PRS-801 made by
Electrical	Volume Resistivity [Ωcm	1]	2.5×10 ¹¹	1.0×10 ¹¹	7.2×10 ¹⁰	1.5×10 ¹⁰	2.5×10 ¹¹	5.5×10 ¹⁰	2.0×10 ¹⁰	8.8×10 ⁹	2.9×10 ⁹		2.2×10 ⁹	1.1×10 ⁹	2.9×10 ¹⁰	4.8×10 ¹⁰	PROSTAT
	Static Decay Time [sec] [5kv → 50v]		_	0.12	0.06	0.03	0.04	0.84	0.25	0.11	0.03		0.02	0.01	0.24	0.34	FTMS 101 C-4046 (MIL B-81705B)
	$[-5kv \rightarrow -50v]$		_	0.18	0.09	0.03	0.05	0.86	0.25	0.10	0.03		0.02	0.01	0.23	0.34	Static Decay Meter 23°C 13%± 2%RH
5/5	Oxygen Index		26	27	27	27	26	24	26	27	27		28	27	26	26	Based on JIS K 7201
F/R			Cor	Complies with requirements of Art.4.3 of Order for Enforcement of the Fire Defense Law of Japan.									with requiren ment of the Fi				

Product Name			FLARRE				FLARRE Insect-guard			WELDING CURTAIN	MAJIKILYII ITOIRI		FLARRE ITOIRI	FLARRE ITOIRI Insect-guard		FRIGOSOFT		Test Method
Thickness	Thickness [mm]		0.15	0.3	0.5	1.0	0.3	0.5	1.0	0.35	# 3000		# 3000	# 3000	1.0	2.0	3.0	
Width [cm	n]		183	137/183	183	91.5/137	183	137	137	137	185		185	185	122	122	122	
Length [m	n]		50	30	30	10	30	20	10	40	50		50	50	10	10	10	
Color			Clear	Clear	Clear	Clear	Orange	Orange	Orange	3 Colors	Clear		Clear	Orange	Clear	Clear	Clear	
	100% Modulus[N/cm]	M.D.	24.9	36.2	44.9	86.2	35.4	51.7	81.3	41.4	_		_	_	62.9	116.0	172.5	
	100 /0 Modalda[14/cm]	T.D.	19.0	30.7	39.6	72.7	28.8	43.4	71.2	36.0	_		_	_	53.7	99.1	149.4	
	Tensile Strength[N/cm]	M.D.	49.4	90.3	123.2	231.6	80.5	126.8	233.6	92.9	74.6		87.1	92.7	162.9	342.8	440.8	
	Terisiie otterigiti[14/em]	T.D.	39.8	78.7	113.0	211.0	71.4	114.7	213.2	86.6	67.5		78.5	86.1	178.0	369.7	435.6	Based on JIS K 6732 (The average of 3 pieces)
Physical	Elongation[%]	M.D.	272	328	338	343	284	330	358	297	18		18	19	364	435	401	
		T.D.	312	347	355	371	318	370	372	323	26		33	31	494	520	460	
	Tear Strength[N]	M.D.	13.6	30.3	33.2	62.2	20.8	32.7	63.8	30.3	24.2		23.1	24.2	44.4	101.1	150.3	
		T.D.	14.6	25.9	31.5	58.4	19.2	31.4	61.1	26.4	25.7		22.5	24.4	47.8	105.2	156.0	
	Total Light Transmittance [%]		90.9	90.6	89.6	87.3	65.3	65.4	66.1	*	87.2		86.7	67.0	91.5	90.9	90.3	
	Surface Resistivity [Ω]	Тор	_	_	_	_	_	_	_	_	_		_	_	_	_	_	Based on JIS C 2170
	Surface Hesistivity [12]	Bottom	_	_	_	_	_	_	_	_	_		_	_	_	_	_	Tester : PRS-801 made by PROSTAT
Electrical	Volume Resistivity [Ωcm]	_	_	_	_	_	_	_	_	_		_	_	_	_	_	FNOSIAI
2.000.100.1	Static Decay Time [sec] [5kv → 50v] [-5kv → -50v]		-	_	_	_	_	-	_	_	_		_	_	-	_	_	FTMS 101 C-4046 (MIL B-81705B) Static Decay Meter 23°C 13%± 2%RH
			_	_	_	_	_	_	_	_	_		_	_	_	_	_	
	Oxygen Index		27	27	27	27	28	27	27	28	_		27	26	_	_	_	Based on JIS K 7201
F/R			Complies	s with requiren	nents of Art.4	4.3 of Order fo	or Enforceme	nt of the Fire	Defense Law	of Japan.	_		of Art.4.3	requirements of Order for nt of the Fire w of Japan.	_	_	_	

All data in this catalog are typical measured values, not guaranteed values.

M.D.: Machine Direction (Lengthwise : L.W.) T.D.: Transverse Direction (Crosswise : C.W.)