

Ultra-high molecular weight polyethylene Porous Film

SUNMAP®



What is SUNMAP® ?

SUNMAP® is an ultra-high molecular weight polyethylene resin (UHMW-PE* resin) porous film developed by Nitto using its proprietary technology and special manufacturing processes. SUNMAP® retains the superior characteristics of ultrahigh-molecular-weight polyethylene such as chemical resistance, abrasion resistance, and impact resistance, which when coupled with porosity, brings new characteristics such as excellent air permeability, a low friction coefficient and cushioning properties.

*The acronym is short for ultra-high molecular weight polyethylene

The main characteristics of SUNMAP®

Penetration	Gases such as air or water vapor can penetrate through SUNMAP®	Prevention	SUNMAP® offers protection from water droplets. (Not available on certain products)
Resistant	SUNMAP® has outstanding resistance to chemicals and abrasion.	Clean	Due to its outstanding resistance to abrasion, SUNMAP® has very low levels of dust.
Slippery	SUNMAP® has an extremely low co-efficient of friction as well as excellent sliding properties.	Easy to Process	SUNMAP® is extremely malleable and can be processed into any number of shapes or forms.
Protection	Due to its outstanding resistance to abrasion, SUNMAP® has excellent cushioning properties.	Environmentally Considerate	None of the 6 substances listed in the RoHS directive are used in the manufacture of SUNMAP®.

Item	Unit	Product Number			
		LC	LC-T	LC-T5320	HP-5320
Properties	—	Standard type	Antistatic type	One side flat surface / Antistatic type	High Air permeability and One side flat surface / Antistatic type
Average pore size	μm	17	17	17	24
Porosity	%	30	30	30	38
Air permeability (at a thickness of 0.5mm)	cm³ / cm²·sec	1.4	1.4	1.2	1.5 *
Tensile strength	MPa	12	12	12	8
Elongation	%	90	90	90	70
Hardness	Shore D	48	48	48	42
Surface roughness (Ra)	μm	2.0	2.0	1.2 (Flat surface side)	1.2 (Flat surface side)
Coefficient of kinetic friction	—	0.1	0.1	0.1	0.1
Surface resistance	Ω / □	>10 ¹³	1×10 ¹⁰	1×10 ¹⁰	1×10 ¹⁰

*Measured value at a thickness of 2.0mm

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Ultra-high molecular weight polyethylene × Porous making = SUNMAP®

Nitto uses its specific technologies to create ultra-high molecular weight polyethylene with porous characteristics and excellent qualities.

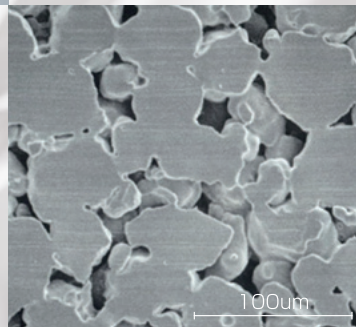
SUNMAP® - a new material with excellent air permeability, low friction coefficient and cushioning properties is born.

SUNMAP® is our response to ideas from our customers - the possible applications are limitless.

Nitto continues to strive towards greater advances in high molecular compound technology, whilst aiming to develop a global niche in a variety of sectors.



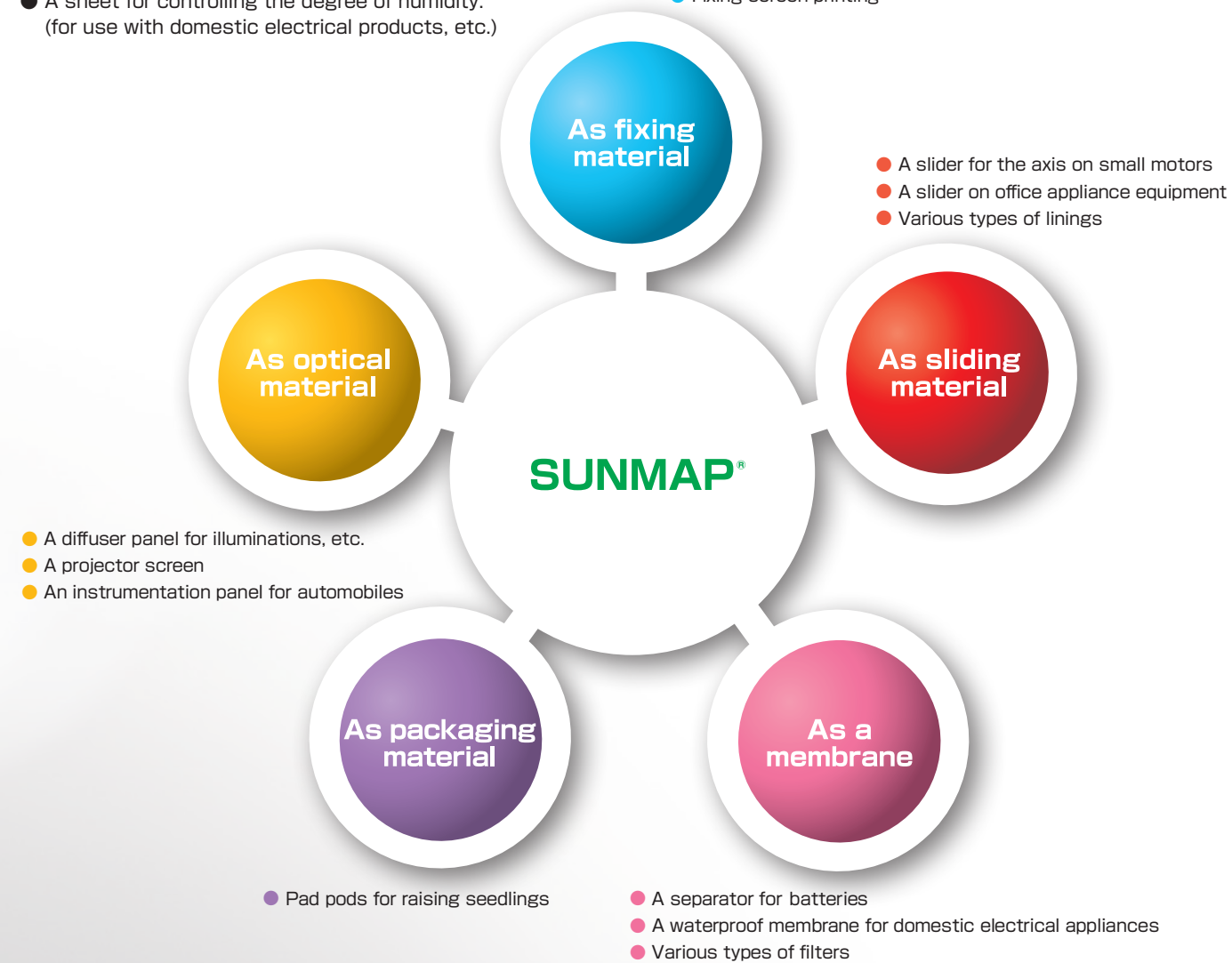
Types of SUNMAP® products



The surface of SUNMAP® seen through an SEM

Applications of SUNMAP®

- Any thin material or thin glass panel held in place by suction, such as liquid crystal panels or PDP panels, etc.
- Protection for any rotating disc media, such as DVDs, etc.
- A simple filter for any liquid matter.
- A sheet for controlling the humidity with regard to construction materials.
- A sheet for controlling the degree of humidity. (for use with domestic electrical products, etc.)
- Fixing the glass scribe for use with liquid crystal panels
- Fixing glass and ceramic sheets for cutting
- Fixing lenses (the spherical side) during the polishing process
- Fixing during the wafer dicing process
- Fixing screen printing



In addition to the examples noted here, SUNMAP® is used in a variety of different fields.

Some examples of SUNMAP® use as a fixer :

- As a fixer for catching (in low-pressure of mechanized environments)
- As a fixer for adhesives tape
- For adhesives product number LC-T5320T

SUNMAP® Table of Sizes

Product number	Thickness (mm)	Handling width (mm)	Sheet type length (mm)	Roll type (10m)	Average pore size (um)	Porosity (%)	Features
LC	0.1	100~700	100~1200	○	17	30	● Base Grade
	0.2						
	0.3						
	0.5						
	1.0						
LC-T	0.1	100~700	100~1200	○	17	30	● Antistatic
	0.2						
	0.3						
	0.5						
	1.0						
LC-T5320	0.2	100~500	100~500	×	17	30	● Antistatic ● One side flat surface
	0.3						
	0.5						
	1.0						
	2.0						
LC-T5320T	0.22	450	450	×	17	30	● Air permeability with adhesive
LC-TW1	0.2	600~1000	Only available as a roll type	○	17	30	● Wide version of LC-T ● Antistatic ● Only available as a roll type
	0.3						
	0.5						
LC-TW2	0.2	600~1000	600~1200	×	17	30	● Improved sliding properties compared with LC-TW1 ● Antistatic ● Over 600 apices
	0.3						
	0.5						
HP-5320	2.0	100~400	100~500	×	24	38	● Antistatic ● One side flat surface

● Please consult with us if you have any queries regarding size

Warnings related to product use:

- This product should not come into contact with a living body, nor should it be used as any form of medical product that may come into contact with bodily fluids or any living organism.
- This product should only be used for its specified purpose and not for any other use therein.
- In the event that this product is stored, please avoid direct sunlight and keep in a cool location.

Please contact us if you have any questions about this product

Please direct your inquiries to: Technical Support Center (EYES), Engineering Plastic Materials

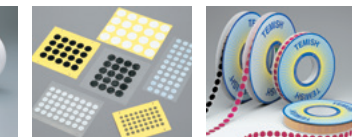
- Support products : Items related to Engineering Plastic Products (TEMISH®, SUNMAP®, NITOFLO® Adhesive Tape, etc.)
- Sample Size: A4, other sizes available



Fluoroplastic Tape



Ultra-high molecular weight polyethylene Porous Materials



Fluoroplastic Porous Materials

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