



ComFit stress-free spandex

Soft power but firm Grip!

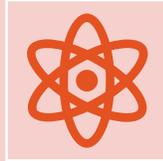
# Eco Friendly Spandex

# MOBILON

SAFETY & SECURITY

COMFORTABLE

ENVIRONMENT



Spandex has two types, "melt spinning" and "dry spinning", based on materials and methods. MOBILON is a rare "melt spinning" spandex.



MOBILON does not use organic solvents in production, significantly reducing CO<sub>2</sub> emissions compared to dry spinning. It also offers eco-friendly spandex with recycled materials and plant-based biomass types.



MOBILON excels in features like soft fit and dimensional stability, and is widely used in leggings, inner wear, sports, and fitness applications.



## History of MOBILON



We are a leading company in rare eco-friendly "melt spandex." We started production in 1965 and launched heat-fusing types in 2003. In 2022, we introduced biomass spandex (plant-based) and recycled spandex. Following our eco-friendly policy, we completely withdrew from dry spandex production in 2006, focusing on melt spandex.

**MOBILON®**

## MOBILON Features

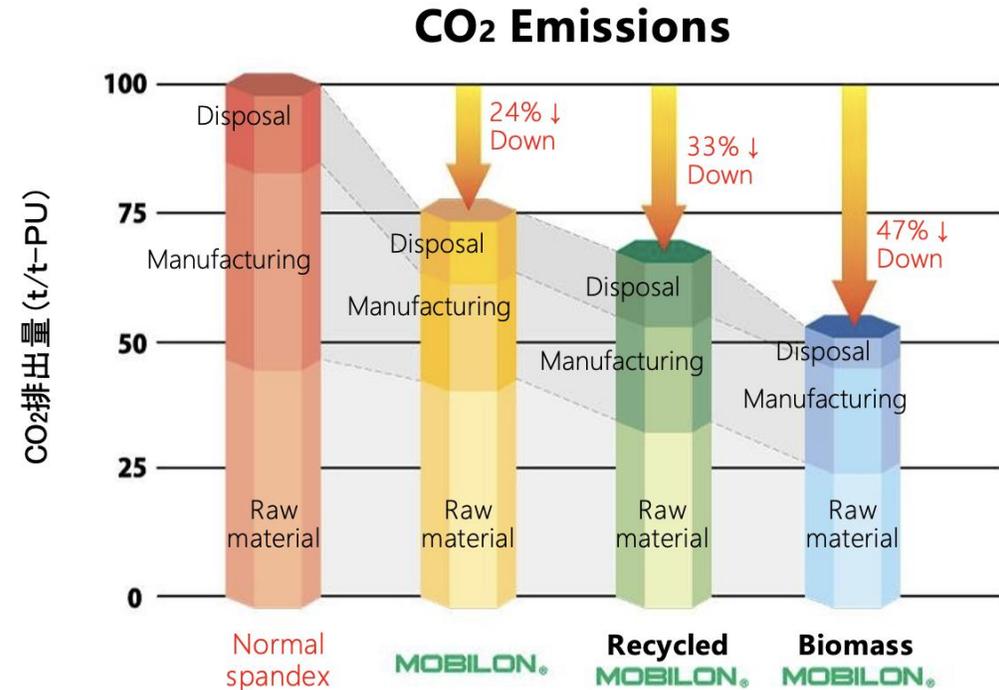
- MOBILON has superior environmental and functional features compared to general spandex.

Features	Normal spandex (Dry spinning)	MOBILON® (Melt spinning)
Consideration for the environment	Use of organic solvents	Organic Solvents free (Eco friendly)
	Recycled material without heat-fusing	Recycled material
	Biomass material without heat-fusing	Biomass material
Fitting performance	Strong power	Stress-free (Soft power)
Heat fusing performance	Low	High (Fusing spandex each other)
Temperate Set-ability	Low	High
Shrink proof performance	Low	High (Good shrink proof after wash)
Anti-slip Effect	Low	High

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## Effect of CO<sub>2</sub> Emission Reduction

- MOBILON is an eco-friendly spandex that does not use organic solvents in the manufacturing process. Therefore, it significantly reduces CO<sub>2</sub> emissions compared to the dry spinning method.



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## N,N-dimethylacetamide(DMAC)

- General spandex uses the dry spinning method, requiring the organic solvent DMAC, which might soon be regulated in the European market. MOBILON, being melt spun, does not use organic solvents and thus avoids this risk.

### Request from the European Commission to Add N,N-Dimethylacetamide (DMAC) to the REACH Regulation

1

Starting December 12<sup>th</sup> 2023

Substances containing 0.3% or more of DMAC must not be placed on the market unless these conditions are met.

2

After December 12<sup>th</sup> 2023

manufacturers and downstream users must implement appropriate risk management measures and ensure that worker exposure remains below the DNEL specified in exemption. Otherwise, the substance or mixtures containing 0.3% or more of DMAC must not be manufactured or used.

3

Exceptions to above include the use of DMAC as a solvent in the direct or transfer polyurethane coating of textiles and paper materials, or in the manufacturing of polyurethane films, from December 12, 2024. For the dry and wet spinning processes of synthetic fibers, the obligations apply from December 12, 2025.

#### \*Exemption

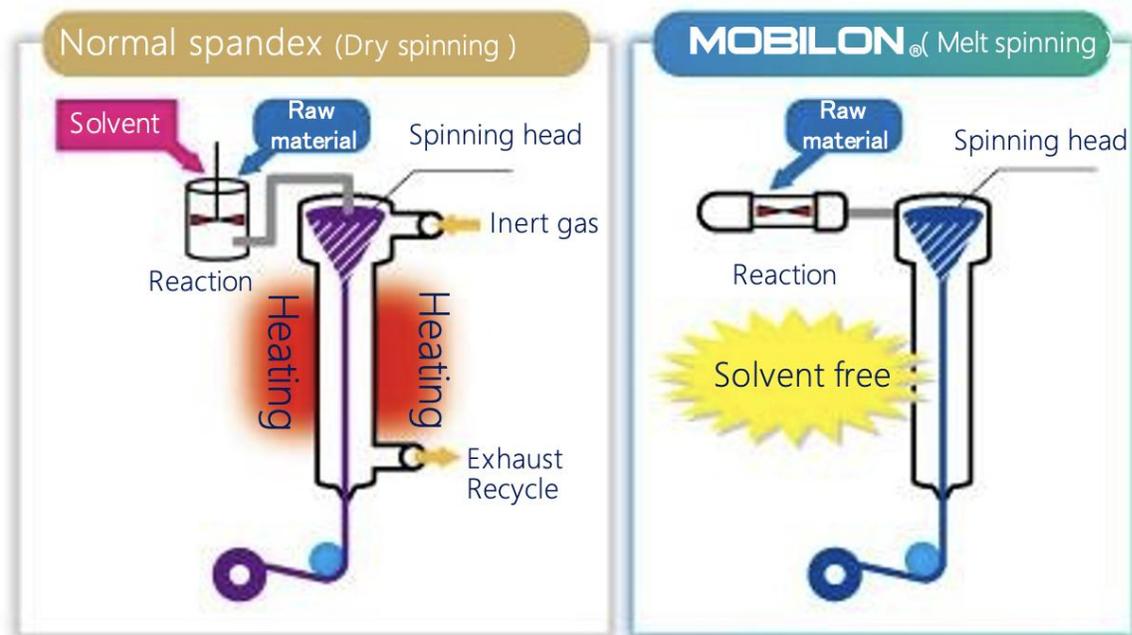
Manufacturers, importers, and downstream users must include Derived No-Effect Levels (DNELs) related to worker exposure in the Chemical Safety Report and Safety Data Sheet, with 6 mg/m<sup>3</sup> for inhalation exposure and 1.1 mg/kg/day for dermal exposure.

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MORIRIN  
The Standard

## DMAC Solvent free

- MOBILON is made by melt spinning, so it doesn't use organic solvent DMAC. Additionally, there's no need to heat and remove solvents during production, significantly reducing CO<sub>2</sub> emissions.

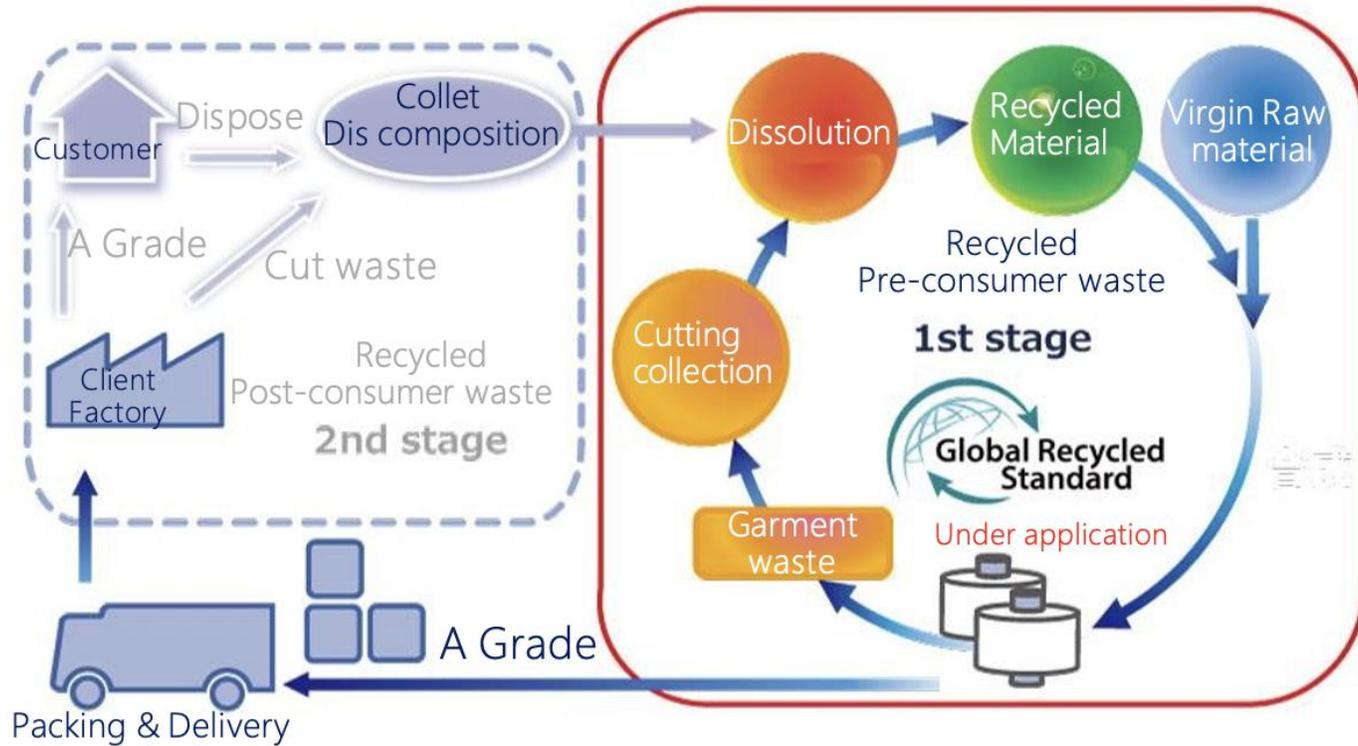


※DMAC N,N-dimethylacetamide is a substance that has a very serious adverse effect on human health and the environment, so it is designated as a substance of very high concern (SVHC).

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HILLSILVER

- We reduce environmental impact by collecting, cutting, and reusing waste from production. We are also considering product recycling in near future.



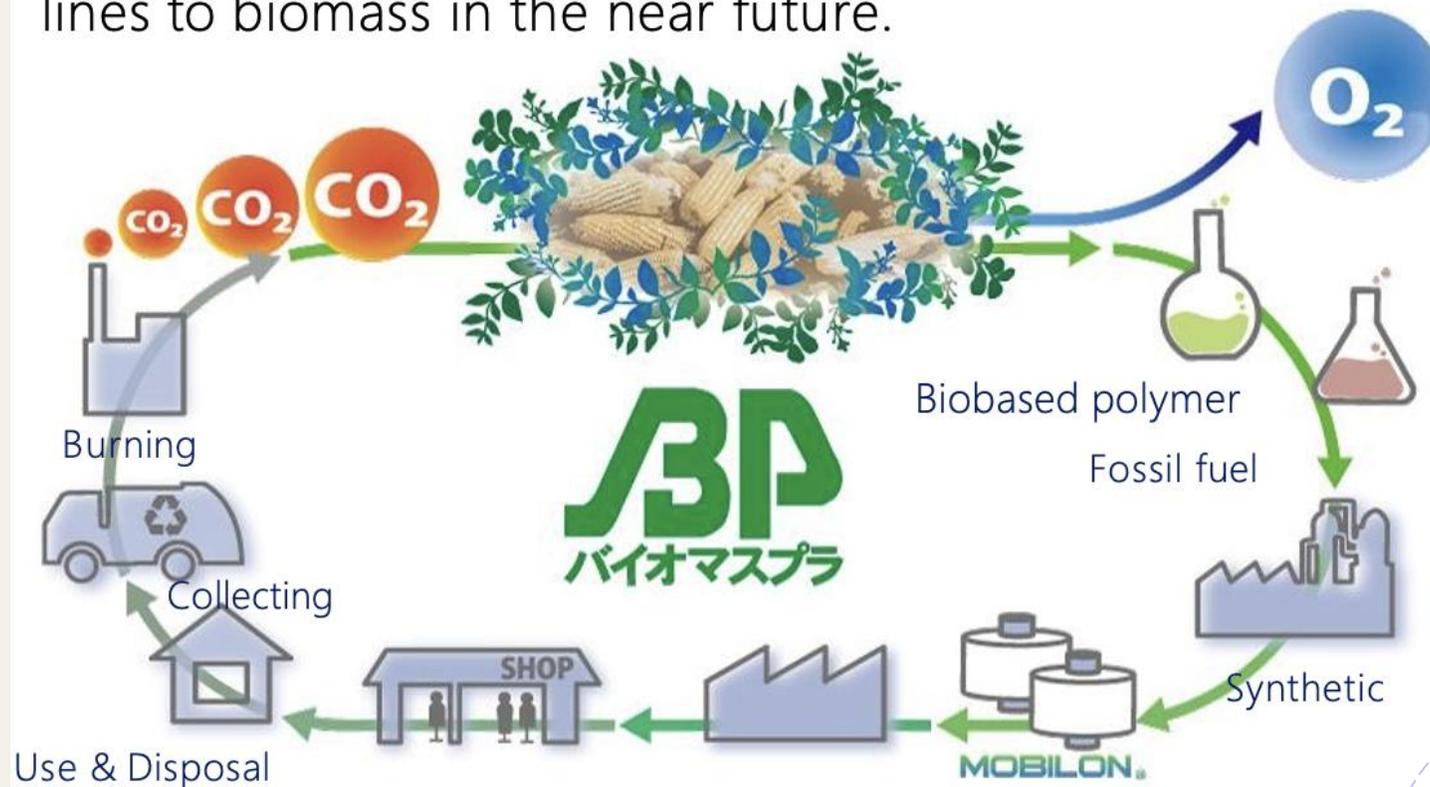
Recycled MOBILON has heat-fusing properties, making it suitable for use in non-run stockings and free-cut innerwear.



# RECYCLE MOBILON

# BIOMASS MOBILON

We reduce environmental impact by using biomass materials (plant-based) instead of conventional petroleum-based ones. We aim to convert all product lines to biomass in the near future.



Biomass MOBILON has heat-fusing properties, making it suitable for use in non-run stockings and free-cut innerwear.

- Fabric made with MOBILON has a soft, snug fit, allowing ease of movement. It remains comfortable even after long wear, making it ideal for innerwear and fitness apparel.

Fig.1 Stress image on wearing

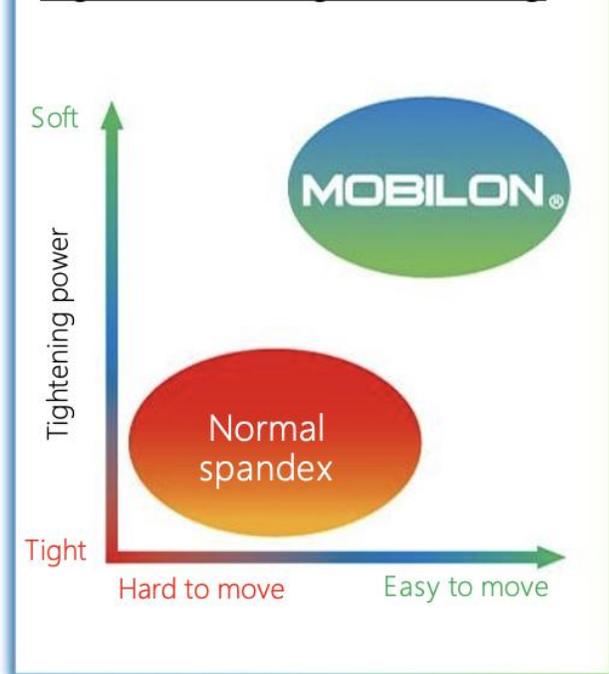
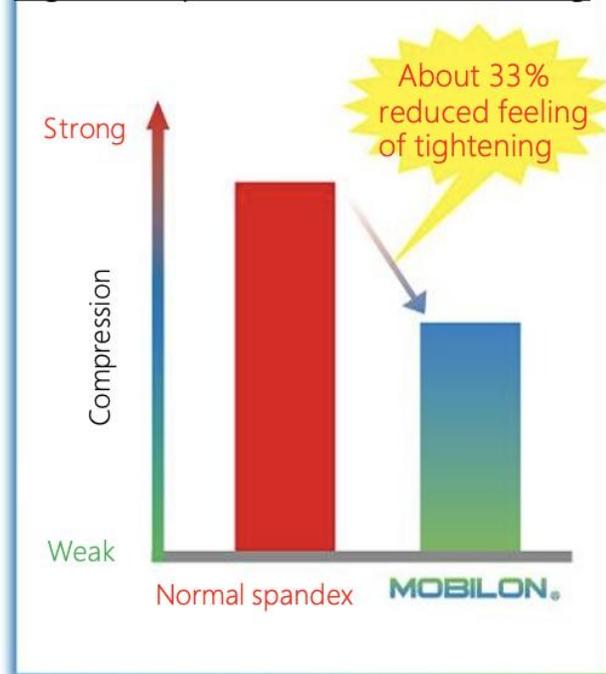


Fig.2 Compression data on wearing



# STRESS FREE

# HEAT FUSING



Fabrics made with MOBILON fuse together with heat, preventing fraying. They remain intact even after repeated washing. Ideal for non-run stockings and free-cut innerwear.

Fig.1 Parts of Heat-fusion for spandex

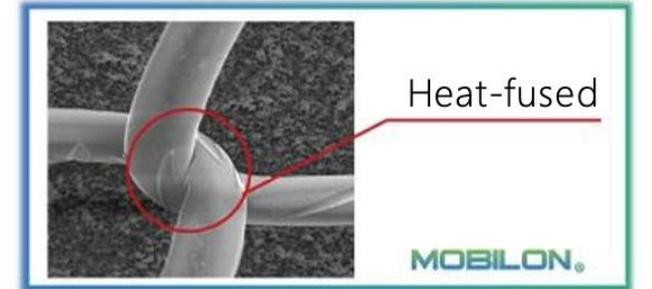
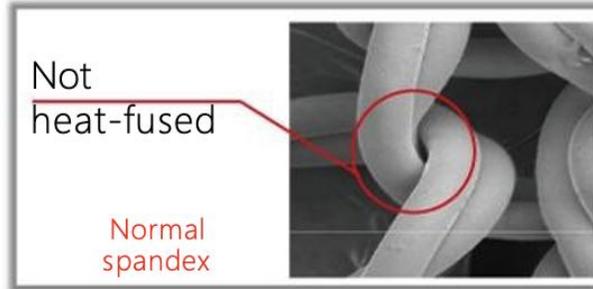


Fig.2 Pantyhose application

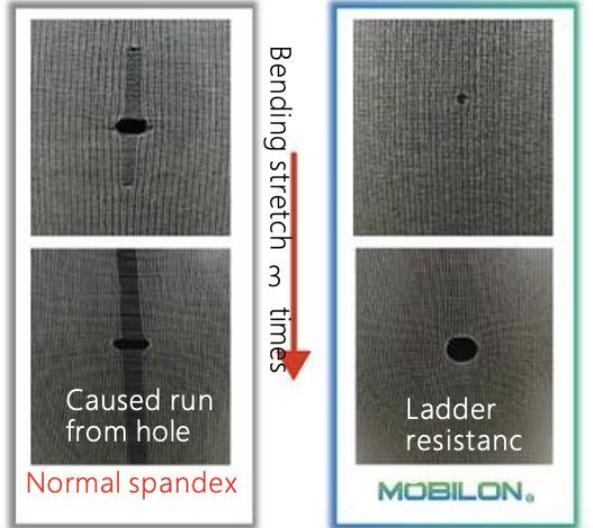


Fig.3 Seamless inner application



- MOBILON fabrics can be heat-set at low temperatures, reducing the impact on environment, and suitable for combining with heat-sensitive materials. It allows low-temperature molding, preventing discoloration of the other materials.

Fig.1 Heat setting condition

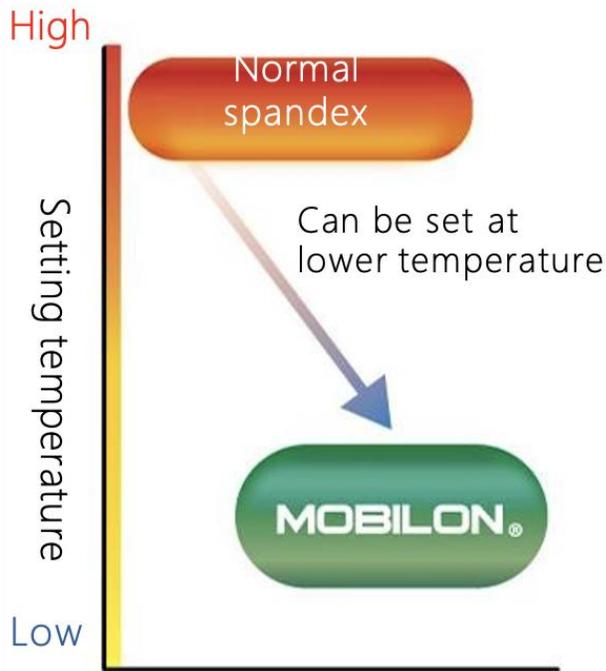
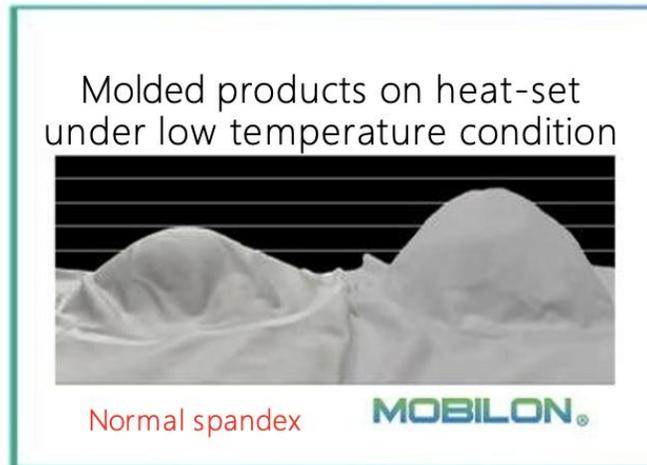


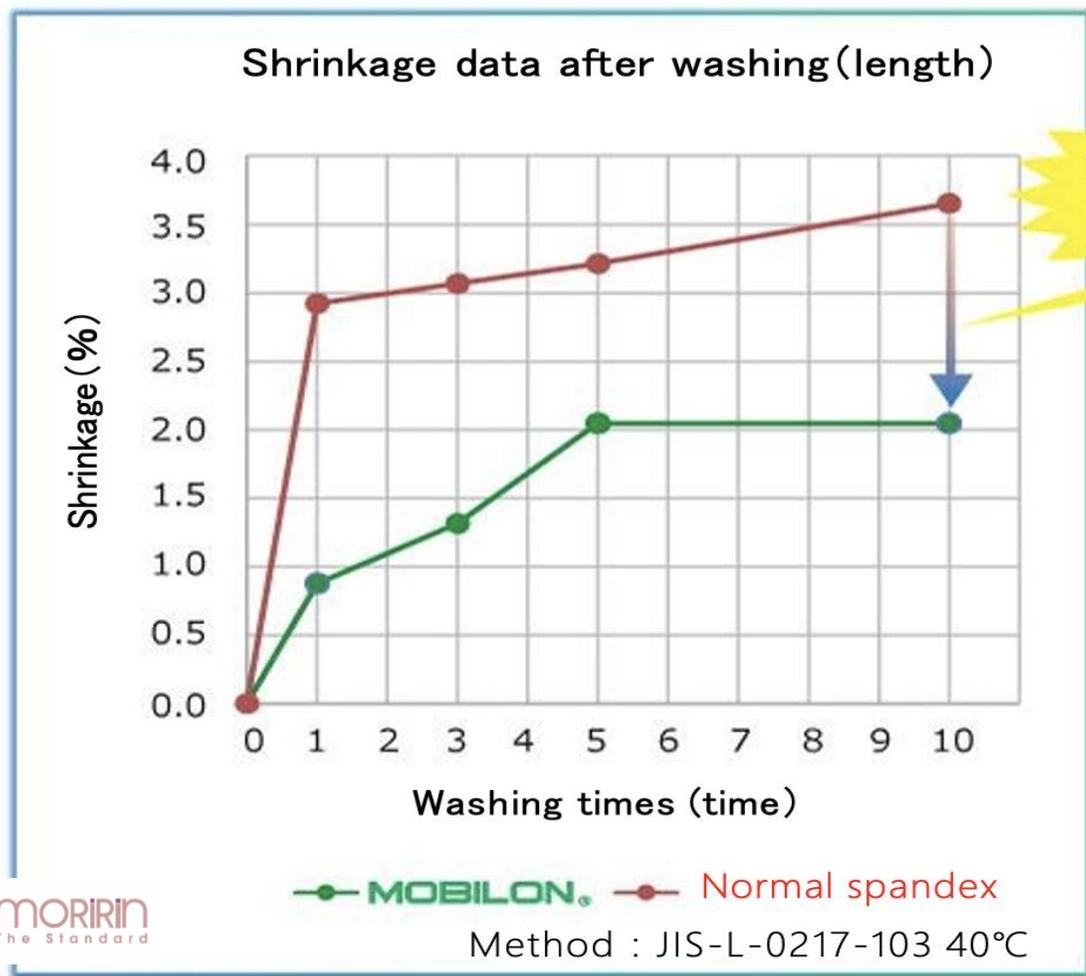
Fig.2 Picture of molding item



# LOW TEMPERATURE SETTING

# SHRINK PROOFING

Fig.1 Shrinkage data after washing



About 45% less shrinkage after washing



AFTER 3 WASHES  
MOBILON Normal spandex

AFTER WASH



Foot shape retaining

# PRODUCT LINE-UP FOR R-type

Type	R	R-L	R-LL	ER	RB
Feature	Regular	Fusing	Low temp. fusing	Fusing +Recycled	Fusing +Biomass
Fusing condition ( Dry )	175°C ×60sec	150°C ×60sec	130°C ×60sec	175°C ×60sec	175°C ×60sec
Luster	Clear	Clear	Clear	Clear	Clear
Alkali resistance	○	○	○	○	○
Fine ness (dtex)	22	○	○	—	○
	33	○	○	○	○
	44	○	○	—	○
	78	○	○	—	—
	110	—	—	○	—
	156	○	○	—	—
	233	—	○	—	—

- MOBILON has obtained various certifications that ensure environmental safety and security.

**Environment Friendliness**

**Safe to the human body**



Under application



Under application



# CERTIFICATIONS

OEKO-TEX®  
Standard 100  
Certification  
Class 1 : for babies



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**MORIRIN CO**

**MR. MASATO SASAKI**  
**MORIRIN CO**

**MS. TAWEESAP  
SAEPHONKRUNG**  
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**MR. ALAKAN KARUPANNAN**  
**HILLSILVER EXPORTSS**

**MR. KARTHI KRISHNAN**  
**HILLSILVER EXPORTSS**

# Team



# Thank You



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