



HIME plus⁺

Pure Silk Sustainable
ITOKO Kyoto Japan

Story of ITOKO

Quality Since 1931

Since founded in 1931, ITOKO has been specialized in specific silk fabric production for high quality Kimonos.

Our creation of weaving designs and patterns are so subtle and delicate to pursue the supreme silk products through our meticulous craftsmanship of artisans in Japan.

Now we wish to pass down Japan's traditions and culture of silk, as well as their wonderful qualities. Then, we have expanded our efforts to the sphere of interior design with SilkGlass, an interior material made from silk enclosed in glass. Our hope of silk becoming a bigger part of everyday life has also led us to adopt new technology and keep striving to further its evolution.

As a type of natural fibre, silk is a perfect example of a sustainable and eco-friendly material in a world that has been called upon to follow the UN's Sustainable Development Goals. In order to pass this unique culture onto future generations, we hope to reflect on the existence of natural silk fibres that may be more suitable for our today's life style.

365 happy skin days



Silk is made from almost the same types of amino acids (protein components) as our skin, meaning it has remarkable affinity for human skin and has many positive effects.

It bears none of the harmful effects characteristic of petroleum substances and chemical synthetic fibres.

By covering the spun silk yarn with Matsuoka-Hime (a 100% Japan-made raw silk) , we have created HIME-plus.

It is a soft-machine washable silk thread of a unique structure that has natural protein added in to the spun silk covered by raw silk filament. It has never been seen before in the industry.

With HIME-plus, your skin will thank you all year round.

HIME-plus Thread Information

- HIME-plus Thread Information 1 /26.3Nm (342d)
- Amount per cone 26.3km /kg
- Material 100% silk
- Minimum order quantity 3 kg / 1 color

Made in Japan

Silk is an eco-friendly and sustainable material

Sustainable Development Goals



For our beautiful earth and forest

Forests, which cover 30% of the earth's land, serve an important function in sustaining life. As sericulture requires vast mulberry plantations, it can prevent uncultivated fields and restore the soil, and protect Japan's nature environment.

It is also connected to the conservation of mountainous areas and their biodiversity. The forests create oxygen through photosynthesis, which absorbs carbon dioxide and prevents global warming.

For Japanese culture and industry

Sericulture, which once supported Japanese industry, is in decline due to the demand for mass production, low cost and dependence on imports. Less than 0.3% of the silk products distributed in Japan is made from domestically produced cocoons.

Using domestic cocoons will help to protect Japanese sericulture, as well as its silkworm farmers. Choosing products that are friendly to the environment, society, and people will lead us to a better future.

For our fine and rich sea

Microplastics are a major global problem. Clothes made from chemical synthetic fibers can release 700,000 to 1.2 million microfibers with just one wash, accounting for 35% of all microplastics in the ocean. HIME-plus is made of 100% natural silk, so it does not release microplastics. In fact, it is so harmless that you could eat it. It is biodegradable and returns to nature with no environmental impact.

For our good health

Silk is a natural fiber that our skin will love. Why? The 18 types of amino acids that make up the silk fiber protein share a high affinity with the 20 types of protein amino acids that make up the human body. Silk thread is even used for surgical sutures that do not need to be removed. HIME-plus is pure silk that fully takes advantage of silk's natural special qualities. We have applied it as a material for clothing that people can wear in good health.

For the good of the environment, society, and its people

~Ethical life makes the future of Japanese sericulture~

Although Japanese sericulture once drove Japan's economic growth, it is now 0.01% of what it was at its peak.

Less than a mere 0.3% of silk distributed within Japan is entirely domestically produced. As a result of prioritizing the profit from low cost mass production, silk production has moved overseas, leading to a dependence on imports.

It is very difficult to maintain domestic silk production, which has drastically decreased. Even now the silk culture is still being passed down from generation to generation, but we must recognize that we are facing a precarious situation.

In hopes of preserving pure domestic Japanese silk for the future, we at ITOKO have been contracting with domestic silk farmers to produce Matsuoka-Hime silkworms since 1996.

In recent years, the concept of ethical consumption has spread rapidly, and awareness of this concept is growing in Japan as well.

Choosing environmentally friendly products and considering the background of production, each individual's choice will be the driving force for the future.

Furthermore, protecting the silk industry that is entirely domestically produced means preserving Japan's culture and its national land, which is also significant for society.



Pure Japanese Silk “Matsuoka-Hime”

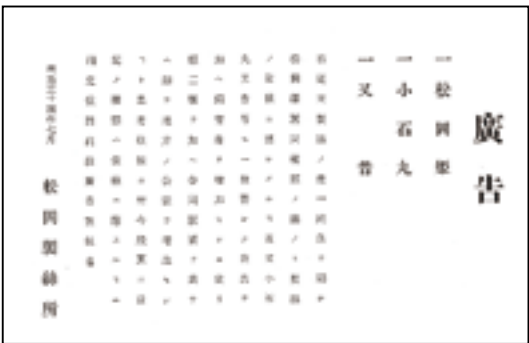
The name 'HIME plus' comes from the globally recognised silkworm breed “Matsuoka -Hime”. It is also one of Japan's three finest silkworm varieties, the others being Koishimaru and Matamukashi.

After the Meiji Restoration, 3,000 samurai from the Shonai region of Yamagata Prefecture cultivated the Matsugaoka area into a mulberry field, built a silkworm farm, and devoted themselves to the production of cocoons.

Rice cultivation and sericulture are not only respected tasks, but also part of traditional events still carried out by the Imperial House of Japan, serving as symbols of Japanese culture.

Matsuoka-Hime is raw silk thread of the highest quality, nurtured by the soil, water, sun light, and wind unique to Japan, and is characterized by its beautiful lustre, lightness, and soft gentle touch.

In these days when the number of silkworm farmers is decreasing, the fact that superior cocoons are produced by the spirit and techniques handed down with this history is highly appreciated.



Top 3 brands promoted in 1891



Matsuoka-Hime breeding



Samurai of Matsuoka Camp



Bright cocoons by kind farmers

04 Tradition meets Innovation !

"HIME-plus" washable silk

Silk is a natural fiber that your skin loves.

This is because silk fibers are similar to human protein amino acids, then are biocompatible and have high affinity.

However, the vast majority of washable silk products distributed in current market uses resin coating derived from petroleum in order to prevent fibers from breakage or pilling.

Unfortunately, it must be said that all such coated silk is close to being chemical synthetic fibers. This is a waste of the original silk benefits reaped from natural silk qualities.

Now, we are proud to introduce HIME-plus, a new washable silk yarn with a new shape-stabilizing structure, that is the first of its kind in the industry.

HIME-plus is soft-machine washable. It is made of natural materials only without impurities.

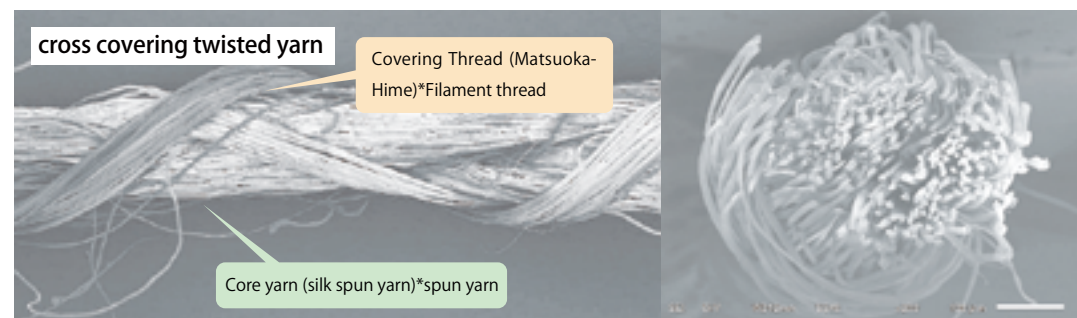
By soaking silk yarn with a specialized protein different from silk amino acids, we stabilize the molecular arrangement created by natural protein's peptide bonds.

Silk yarn (silk spun yarn) infiltrated with this special protein is used as the core yarn and then cross-covered with raw silk, extremely fine-fiber Matsuoka-Hime which is pure domestic silk thread.

Only natural materials are used to ensure stability of yarn shape even when water wetted, and the texture of silk itself continues to be comfortable in all seasons by washing in water at home.

Real silk in direct contact with your skin can also restrain the ageing effects of reacting oxygen, giving another benefit for you concerned about your skin.

We have brought to you a new kind of 100% silk thread born of Japanese technology which is easy-care, shrink-proof, tear-proof, and pilling-proof, and expecting good effects for your skin.



HIME-plus side

HIME-plus cross section

How to take care of products that use "HIME-plus"

- Please fold your HIME-Plus garment and put it into the tiny laundry net.
- Soft-machine wash or hand-wash in the laundry net that is smaller is better.
- Use a neutral mild detergent and water at a temperature of 35° C or lower.
- The material is shrink-resistant and can be worn without ironing. When ironing, please iron steaming at a low temperature or with a cloth.
- Dark colored items may cause color-migration, so we recommend washing separately.
- Do not leave the garment wet.
- Dry in shade and avoid direct sunlight.
- Do not bleach
- Do not tumble dry



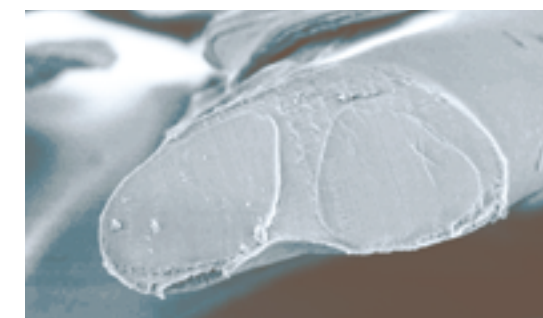
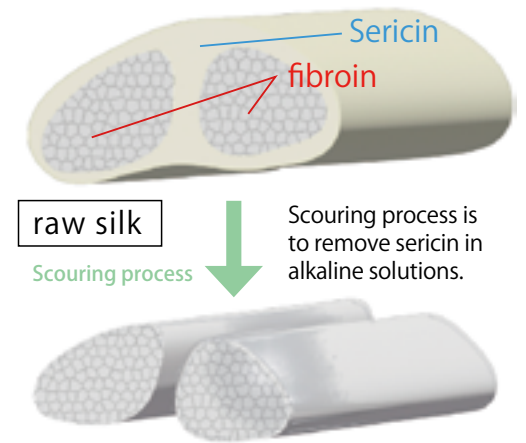
Refined Elegance Mechanism

Silk is beautiful.

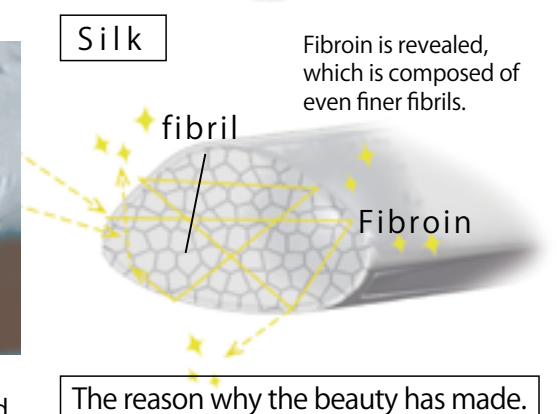
While other natural fibers are short staple, silk is a long filament with only one cocoon yielding a single fiber as long as 1,500 metres.

As the cross-section of a cut face has a triangular shape that reflects natural light diffuses inside like a prism, and the light emits elegance.

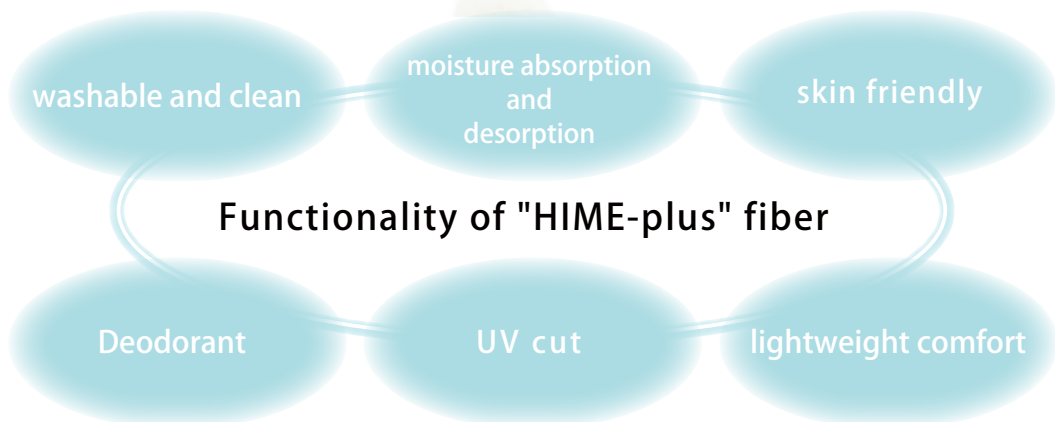
HIME-plus has a natural sheen, because the core yarn of fluffy silk is specially covered with Matsuoka-Hime, a pure domestic raw silk with reliable traceability.



Cross-section of Matsuoka-Hime silk thread



05 Pure Silk Pure Sustainability



(Research by Keken Testing and Certification Center)

Relax and Comfort

As cocoons are made of fibers meant to protect precious silkworms, they have a natural function of absorbing moisture and releasing moisture to a moderate degree.

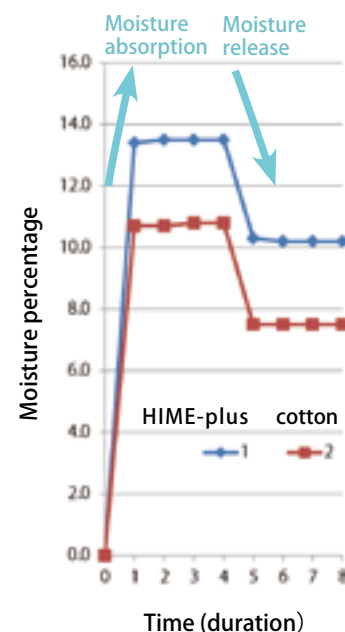
In order to evaluate the function of absorbing moisture within the garment when worn and releasing moisture to the outside air, we have done the "moisture absorption/desorption test".

The moisture content was measured. The results show the ability that the moisture absorption and desorption properties reduce discomfort such as stuffiness inside the garment and keep the skin dry.

A bigger gap between the moisture content in a high temperature and high humidity environment (40°C / 90%) and one with normal standard temperature and humidity (20°C / 65%) shows the effects of regulating moisture.

The greater the gap in moisture content, the greater the humidity control effect.

Moisture absorption and desorption test



An environment of 30°C temperature and 90% humidity is assumed inside a garment for light exercise. We compared the HIME plus product and a test piece (using a functional synthetic garment brand).

Although chemical synthetic fiber products have tried to enhance absorbency by making their fibers complicated shapes to increase their overall surface area, there is a limit to the moisture rate synthetic ones can absorb.

For synthetic fibres the difference between the official and actual moisture content is just only 1.8% .

Meanwhile, HIME plus garment have a moisture content gap of 3.5%, showing a significant humidity control efficiency.

$$\text{Moisture percentage (\%)} = \{(\text{Weight after 4 hours}) - (\text{dry weight})\} / (\text{dry weight}) \times 100$$

$$\text{moisture content difference} = (30^{\circ}\text{C } 90\%\text{RH}) - (20^{\circ}\text{C } 65\%\text{RH})$$

	Moisture content rate(%)		Moisture rate gap (%)
	30°C 90% R H	20°C 65% R H	
HIME-plus	14.1	10.6	3.5
chemical synthetic	5.3	3.5	1.8

The high official moisture content under normal conditions (20°C temperature, 65% humidity) means that it quickly absorbs perspiration and evaporates it.

The high moisture absorption/desorption, air permeability, and heat retention properties of this material have the advantage of keeping you cool in summer and warm in winter, making it comfortable in all seasons.

We can say that Silk is a fiber that can be used comfortably all seasons.

Silk is 1.3 to 1.5 times more absorbent than cotton and is also excellent at releasing moisture. By quickly absorbing the moisture from our bodies and releasing it, silk always keeps garments feeling comfortable. It is truly a material that breathes.

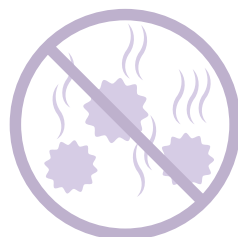


Deodorant

We tested how effective fibers were at reducing unpleasant everyday odours like sweat and 'old people smell'.

The comparative test pieces (from functional synthetic garment brand) were given deodorizing process such as photocatalysts embedded in adsorbents.

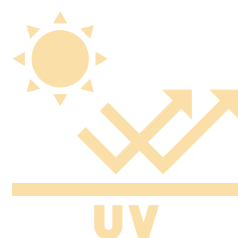
HIME-plus uses absolutely no artificial processing materials or treatments, but its results exceeded those of synthetic chemical fibres.



Deodorant test			
Reduction rate of 3 odor components /sweat odor		HIME-plus	chemical synthetic
	Ammonia	98.7%	84.1%
	Acetic acid	97.5%	84.8%
	Isovaleric acid	98.9%	98.5%

UV cut

Cocoons serve as shelters that protects inside precious silkworms. HIME-plus, which uses zero petroleum-based materials, has been proven to have a high rate of blocking UV rays even for thin, transparent 16-gauge knitted garments, protecting our skin.



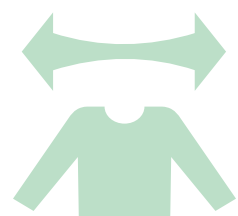
UV cut rate		
	HIME-plus	
Blocking rate	93.8%	

* Test cloth color: Black

High quality

HIME-plus, with its special structure, has superior tensile strength compared to ordinary raw filament thread. When made into knitted garments, it also has excellent results for rupture tests. Furthermore, the test data shows that it does not easily pill or wrinkle.

In general, silk yarns have an image of being delicate, but HIME-plus is strong enough.



Yarn thread test		HIME-plus(1/26.3Nm=342d)	Raw silk thread (342d)
Strength	Dry	1016cN	584cN
	Wet	662cN	481cN
Knitted cloth		HIME-plus	Quality standard
Pilling		Grade 4	Grade 3 or higher
Rupture		1000kPa以上	300kPa or higher
Wrinkle resistance		Grade4.5	Grade 3 or higher

Pilling and wrinkle resistance wrinkle method

Skin-friendly

The proteins of our bodies are composed of just 20 kinds of amino acids, and with 18 of them also are founded in silk. Therefore silk is a material of high affinity with human skin.

In fact, it is so biocompatible that it is used for surgical sutures that do not need to be removed.

As the composition of amino acids in silk protein is similar to the protein and amino acids in our skin, silk is considered to be gentle and friendly on human skin and does not easily cause rashes or contact dermatitis.



20 types of amino acids that make up human proteins

Glycine	Alanine	Valine	Leucine	Isoleucine
Phenylalanine	Serine	Threonine	Aspartic acid	Glutamic acid
Tyrosine	Fluorine	Tryptophan	Methionine	Cysteine
Histicin	Lysine	Arginine	Glutamine	Asparagine

■ Amino acids that make up silk fibroin

Pure silk washable

Test for wash resistance			HIME-plus	Quality standard
Knitted cloth fabric	JIS-L0844	Discoloration	Grade 4-5	Grade 4 or higher
		Staining	Grade 4-5	Grade 2-3
Knitted garment product	JIS-L1930	Appearance	Good	
		Stability of style	0%	
	Wrinkle resistance	After washing	Grade 3.5	Grade 3.2 or higher
		Vertical	Length - 1.8%	-5% ~ +3%
	Change rate	Horizontal	Body width - 4.4%	-5% ~ +3%
		Horizontal	Hem width - 0.0%	-5% ~ +3%

HIME-plus has been made soft-machine washable without any impurities or petroleum-derived additives. Using only natural materials, the shape stability is ensured, and the dimensional change rate by washing resistance test is also excellent. Comfortability and the texture of silk itself stay with you everywhere all seasons.

History

- 1931 (S6) ● Founded as "Ito Kojiro Shoten"
Created weaving patterns for silk Kimono fabric reflecting artistic taste for Japanese painting
- 1950 (S25) ● Reorganized to be ITOKO Co., Ltd
- 1975 (S50) ● Founder received honorary citizenship from Hotaka, Nagano Prefecture, expanding materials to Japanese original wild silk.
- 1996 (H8) ● Contracted cocoon farmers and launched Matsuoka-Hime, Japan's first integrated cocoon-to-thread/white fabric brand
By using Matsuoka-Hime cocoons (one of Japan's finest silkworm varieties), ITOKO's Kimono fabric highly appreciated.
- 1999 (H11) ● Received a certificate of gratitude for Matsuoka-Hime , a first-quality silk in Japan.
- 2005 (H17) ● Matsuoka-Hime recognized as a model project for the Ministry of Agriculture, Forestry and Fisheries and Ministry of Economy, Trade and Industry's joint promotion of structural reform for silk thread.
- 2006 (H18) ● Developed the domestic another silk variety used since the Edo period (1603-1867) ,producing "Matamukashi".
- 2011 (H23) ● Has opened a museum about white silk inside ITOKO Building
- 2012 (H24) ● Has joined the Kyoto Museums Association of Kyoto City.
- 2012 (H24) ● Launched the division of SilkGlass, an interior design material of silk art.
- 2014 (H26) ● Received a prize at Kyoto Design Award 2014 and the Kyoto Prefecture Governor's Award.
- 2017 (H29) ● Started to produce Iyo silk, Iyo Raw Silk (MAFF Registered Product No. 10, Japanese product with Geographical Indication status)
- 2018 (H30) ● Received award for SilkGlass at Kyoto Chamber of Commerce and Industry.
- 2019 (R1) ● Previous company president Koichi Ito received award for Matsuoka-Hime from The Dainippon Silk Foundation.
- 2020 (R2) ● Recognized by the Ministry of Economy, Trade and Industry as a Regional Future Leading Company.
- 2022 (R4) ● Launched pure silk Hime-plus, the industry's first washable yarn with unique structure.



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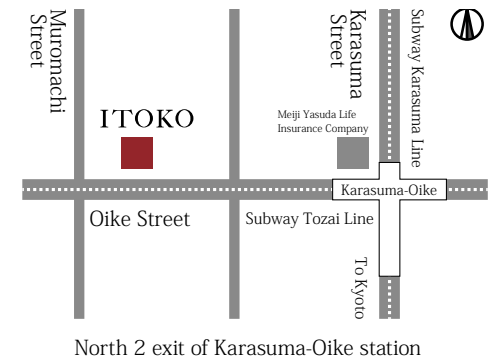
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Supporting organization

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