



**KOKEN** COSMETIC RAW MATERIALS

## Stand by life, stay next to beauty

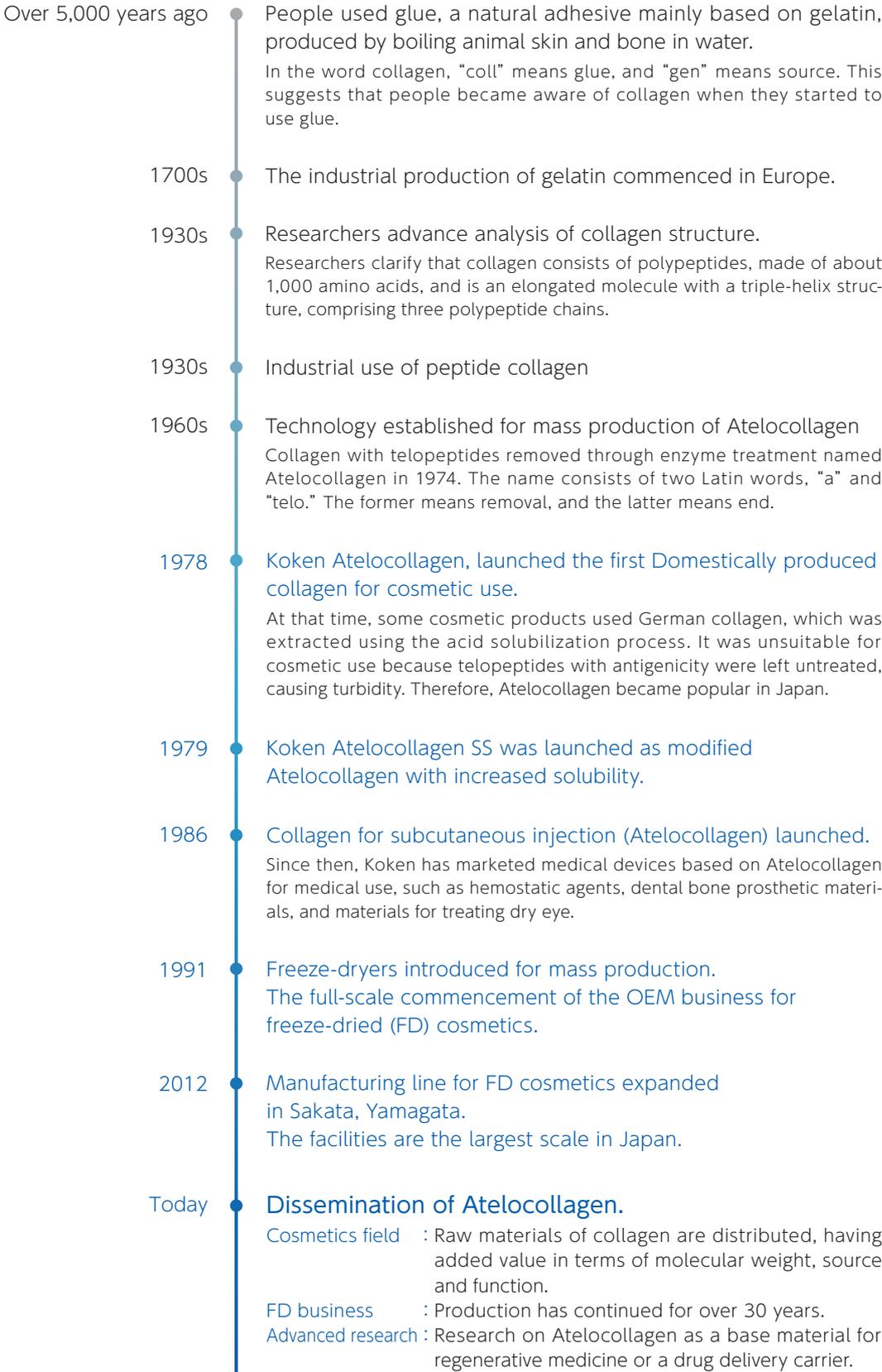
Since the foundation in 1959, we have developed products based on research on macromolecules for medical use in accordance with the statement by Founder Taichiro Akiyama, “valuing originality and providing the products and services leading to people's well-being.”

Having done research and development on artificial skin based on medical grade silicone, we focus on highly biocompatible collagen as a new macromolecule material. We successfully established methods for manufacturing Atelocollagen, collagen with higher solubility and safety, while maintaining the innate triple-helix structure and achieved the first application to cosmetic products in Japan.

As the world's leading Atelocollagen manufacturer, we are constantly evolving by performing cutting-edge research on regenerative medicine, drug carriers and other areas.

With the technological capacities cultivated on the medical front, where precision is required, we develop and provide our original and genuine cosmetic raw materials based on the power of natural products.

The history of Koken as a cosmetic raw material manufacturer has followed collagen and its evolution will continue.





COLLAGEN



NATURAL  
MACROMOLECULE



BOTANICAL



FREEZE DRY

# Four key factors in the Koken cosmetics business

## Cosmetic raw materials and freeze-drying business

### COLLAGEN

Koken is the world's leading company in the field of triple-helix-structured Atelocollagen that is the closest to human skin.

It is pursuing genuine beautification for the sake of skin health as a pioneer in the application of collagen to cosmetics.

### NATURAL MACROMOLECULE

Koken meets a variety of needs, such as functionality, natural base materials, and environmental friendliness, using domestically produced, plant-based polysaccharides that are unique and sustainable.

It extracts elastin, the ingredient for firmness and elasticity that support collagen in the skin and applies it to cosmetic materials. The lineup also includes fish-derived products.

### BOTANICAL

Domestically produced, plant-based raw materials. Koken develops safe and reliable plant-based raw materials with clear traceability, taking into account the usefulness of these materials made in Japan, including Yamagata, where the company's production is based.

It makes sustainable efforts with local producers, such as using recycled resources.

### FREEZE DRY

Koken offers freeze-dried collagen materials in pursuit of the innate power of the perception of collagen.

It offers OEM-related services for differentiation with high quality and value added, making the most use of ingredient functions.

## Choose by function/concept

Moisturizing	page				
	11	Collagen products	17	Cell proliferation, cell activation, and promotion of turnover	LaFrance Koken
	15	Pholitect®	17		Melon Koken
	15	Sacran®	17		Suika(Watermelon) Extract Obanazawa
	15	Elastin	18		Shonai Kaki Powder Koken
	17	Cherry Koken		Promotion of NMF production	Cherry Koken
	17	LaFrance Koken	17		Suika(Watermelon) Extract Obanazawa
	17	Melon Koken		Improvement of skin quality and chapped skin	Cherry Koken
	17	Suika(Watermelon) Extract Obanazawa	17		Melon Koken
	18	Rice Extract Koken	17		Suika(Watermelon) Extract Obanazawa
Firmness and elasticity	11	Collagen products	18	Skin conditioning	Rice Extract Koken
	11	Soluge	18		SHONAI BIJIN-Rice Fermented Extract(SAKE)
	15	Elastin		Promotion of blood circulation	Rice Extract Koken
Prevention of wrinkles and sagging	11	Collagen products	18		SHONAI BIJIN-Rice Fermented Extract(SAKE)
	11	Soluge		Peeling	Cherry Koken
	15	Elastin	17		Rice Extract Koken
	18	LaFrance Powder Koken	18		SHONAI BIJIN-Rice Fermented Extract(SAKE)
Brightening and radiance	22	Aqua gel	18		SHONAI BIJIN-Rice Fermented Extract(SAKE)
	18	SHONAI BIJIN-Rice Fermented Extract(SAKE)		Soft skin scrub	Cherry Powder Koken
Film forming and higher barrier function	18	Squeezed Rice Oil	17		LaFrance Powder Koken
	11	Collagen products	18		Shonai Kaki Powder
	15	Pholitect®		Improvement of texture	Pholitect®
	15	Sacran®	15		
Antiaging (antioxidation)	18	Squeezed Rice Oil	11	Improvement of foaming property and stabilization of emulsification	Shark Fin Atelocollagen MS
	17	Cherry Koken	11		Porcine Atelocollagen MS
	17	LaFrance Koken	15		Pholitect®
	17	Suika(Watermelon) Extract Obanazawa		Deodorization	Shonai Kaki Powder Koken
	17	Cherry Powder Koken		Hair care	Soluge
	18	LaFrance Powder Koken	18		Squeezed Rice Oil
Antiaging (antiglycation)	18	Shonai Kaki Powder Koken		Scalp care	Suika(Watermelon) Extract Obanazawa
	18	Squeezed Rice Oil		Makeup	Pholitect®
Anti-inflammation	17	Suika(Watermelon) Extract Obanazawa	17		Pholitect®
	15	Pholitect®	15	Countermeasures to UV rays and photoaging	Pholitect®
	15	Sacran®	18		Squeezed Rice Oil
	17	Suika(Watermelon) Extract Obanazawa			
Irritation alleviation	17	Cherry Powder Koken			
	11	Shark Fin Atelocollagen Products			
	15	Pholitect®			

## Categorized list

Category	INCI name	Product name	Correspondence				page	
Collagen	ATELOCOLLAGEN	Soluge	中文名称	Sustainable	Domestically produced		11	
	SOLUBLE COLLAGEN	Shark Fin Atelocollagen	中文名称	Sustainable	Domestically produced		11	
		Tilapia Atelocollagen						11
		Porcine Atelocollagen	中文名称			Domestically produced		11
		Porcine Atelocollagen						11
	SUCCINOYL ATELOCOLLAGEN	Shark Fin Atelocollagen SS						11
		Shark Fin Atelocollagen SS-V	中文名称	Sustainable	Domestically produced			11
		Shark Atelocollagen SS						11
		Porcine Atelocollagen SS				Domestically produced		11
		Porcine Atelocollagen SS-V	中文名称					11
MYRISTOYL SUCCINOYL ATELOCOLLAGEN	Shark Fin Atelocollagen MS	中文名称	Sustainable	Domestically produced			11	
	Porcine Atelocollagen MS	中文名称			Domestically produced		11	
Elastin	HYDROLYZED ELASTIN	Elasocean	中文名称	Sustainable			15	
		Hydrolyzed $\alpha$ -Elastin	中文名称				15	
		Hydrolyzed Elastin						15
Polysaccharides	PHOLIOTA MICROSPORA POLYSACCHARIDES	Pholitect®	中文名称	Sustainable	Domestically produced	Pesticide-free	15	
	APHANOTHECE SACRUM POLYSACCHARIDES	Sacran®	中文名称	Sustainable	Domestically produced	Pesticide-free	15	
Botanical extract	PYRUS COMMUNIS(PEAR) TWIG EXTRACT	LaFrance Koken PE		Sustainable	Domestically produced		17	
	PRUNUS AVIUM(SWEET CHERRY) FRUIT EXTRACT	Cherry Koken	中文名称	Sustainable	Domestically produced		17	
	CUCUMIS MELO(MELON) FRUIT EXTRACT	Melon Koken	中文名称	Sustainable	Domestically produced	Picked young	17	
	CITRULLUS LANATUS (WATERMELON) FRUIT EXTRACT	Suika(Watermelon) Extract Obamazawa	中文名称	Sustainable	Domestically produced	Picked young	17	
Powder	PRUNUS AVIUM (SWEET CHERRY) FRUIT	Cherry Powder Koken		Sustainable	Domestically produced		17	
	PYRUS COMMUNIS(PEAR) FRUIT	LaFrance Powder Koken		Sustainable	Domestically produced		18	
	DIOSPYROS KAKI FRUIT POWDER	Shonai Kaki Powder koken		Sustainable	Domestically produced		18	
Fermented extract	RICE FERMENT FILTRATE (SAKE)	Rice Extract Koken MPN	中文名称	Sustainable	Domestically produced		18	
		Rice Extract Koken BG	中文名称	Sustainable	Domestically produced		18	
		SHONAI BIJIN-Rice Fermented Extract(SAKE)	中文名称	Sustainable	Domestically produced		18	
Oil	ORYZA SATIVA(RICE) BRAN OIL	Squeezed Rice Oil	中文名称	Sustainable	Domestically produced		18	



## COLLAGEN

Collagen is the main component of the dermis and bones of animals. At Koken we manufacture Atelocollagen with high biological compatibility through enzyme treatment of collagen.

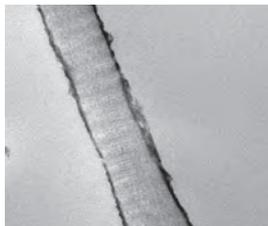
We offer Atelocollagen that is strengthened in terms of compatibility with other cosmetic ingredients, lipophilicity, and permeability in the skin through special processing, including alkali treatment and chemical modification.

Our product lineup contains a variety of Atelocollagen from different sources, such as shark, tilapia, porcine, and bovine to be ready for a wide range of cosmetic products.

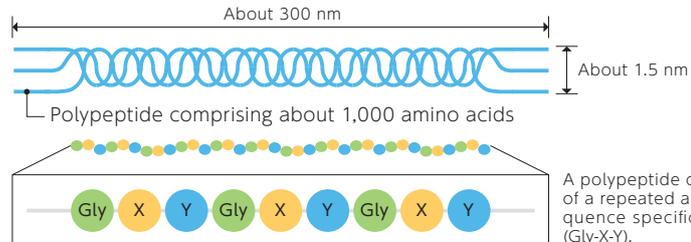
## What is collagen?

Collagen accounts for approximately 25% of all proteins in the body and at least 70% of the dermal layer as the main component. It is present in skin, bones, teeth, corneas, blood vessels, and tendons. Approximately twenty-nine types of collagen exist. In human skin, collagen can be found in the dermis and the basal membrane, functioning as a foundation for the skin and maintaining firmness, elasticity, and water. If the amount or quality of collagen declines, for instance, breaking and adverse cross-linking, then it may cause wrinkles, less elasticity, or sagging in the skin.

Collagen accounts for about 70% of the dermal layer.



In the dermis, collagen exists as elongated protein with a triple-helix structure and a molecular weight of about 300,000



A polypeptide chain consists of a repeated amino acid sequence specific to collagen (Gly-X-Y).

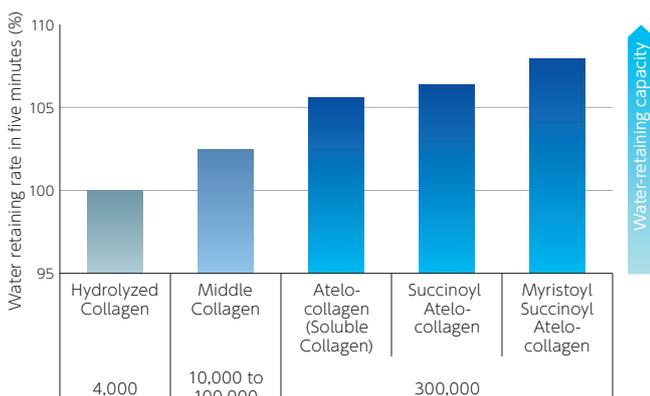
Collagen is rich in proline and hydroxyproline, which features higher water-retaining capacity than other amino acids. It is also characterized by its high hydrophilic property. Hydroxyproline is a special amino acid that plays an important role in maintaining the triple-helix structure, only found in collagen.

## Effects of collagen on the skin

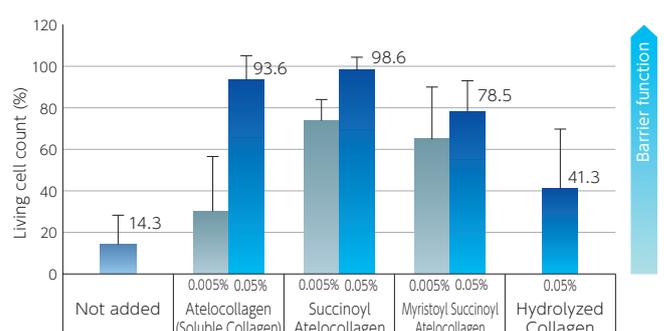
Collagen is a macromolecular protein, containing a large quantity of water-retaining amino acids, with a molecular weight of 300,000. Therefore, collagen prevents the evaporation of water from the skin and excels in moisturizing effect. There are the hydrosoluble collagens that maintain the innate triple-helix structure of the skin (Atelocollagen), Succinoyl Atelocollagen that is manufactured by chemically modifying Atelocollagen to increase the water-retaining capacity, and Myristoyl Succinoyl Atelocollagen with a high affinity to the skin. On the other hand, middle size collagen has a different molecular size and materializes both the high moisturizing capacity and activation of cellular functions. It is expected to upgrade firmness and elasticity from inside the skin, such as stimulating the synthesis of collagen and elastin.

	Variety	Characteristic	Molecular weight	Water-retaining capacity	Penetration power
	Succinoyl Atelocollagen Myristoyl Succinoyl Atelocollagen	Protects the skin from external stimuli. Fills the horny layer with water that boasts good affinity to the skin.	 Approx. 300,000	High	Low
	Soluble Collagen Atelocollagen	Has a high water-retaining capacity and retains water.	 Approx. 10,000 to 100,000	High	Low
	Middle Collagen	Moisturizes both the inside and outside of the skin and activates cellular functions.	 Approx. Hundreds to thousands	Low	High
	Hydrolyzed Collagen	Penetrates through the horny layer to deliver water.		Low	High

### Water-retaining capacity



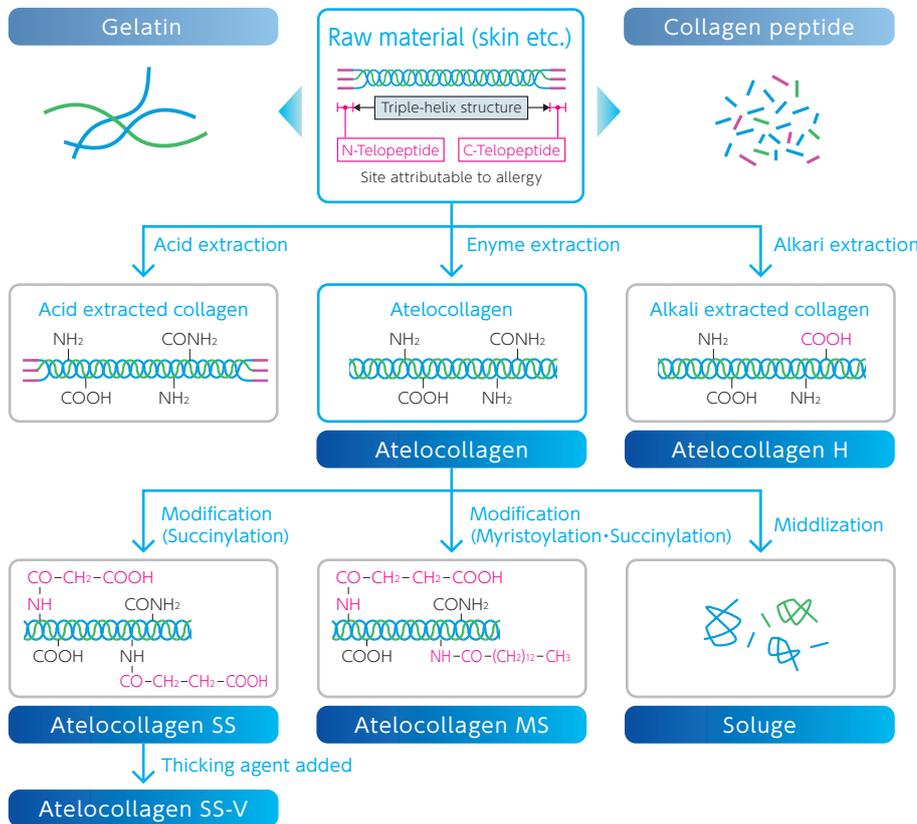
### Barrier function of Atelocollagen



The cell survival rate was assessed after different varieties of collagen were applied to cells, and an external stimulus was given with sodium dodecyl sulfate (SDS). Atelocollagen products showed a higher barrier effect than hydrolyzed collagen. Above all, Succinoyl Atelocollagen exhibited the highest barrier function.

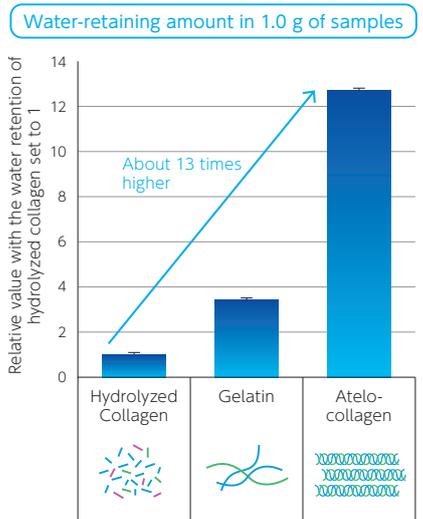
# Varieties of collagen

Koken provides nondenatured macromolecular collagen with an innate triple-helix structure. Our collagen products are processed at a low temperature and are sophisticatedly refined throughout the process from extraction to refinement. That is why our products are odorless. In particular, the technology for removing non-helical regions from collagen consists of extraction methods that are employed in the manufacturing of collagens for medical use. The technology permits Atelocollagen with high biological compatibility that is produced by removing telopeptides attributable to allergy.



**Characteristics of collagens from Koken**

- High purity
- High molecule
- High moisturizing property

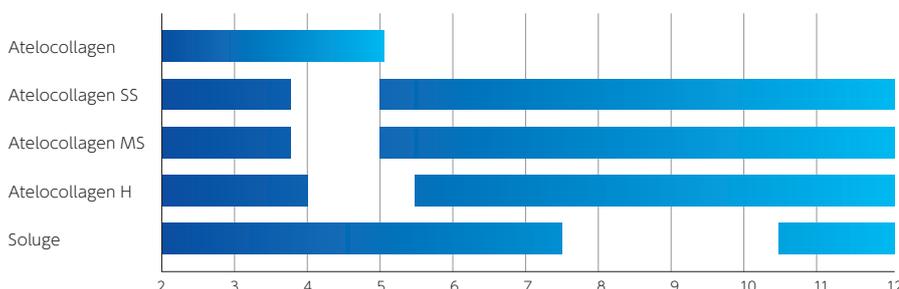


\*Isoelectric point: pH that becomes cloudy

Product name	INCI name	Isoelectric point* (pI)	Acidic	Neutral	Alkaline	Compatibility with other ingredients	Physical properties
Atelocollagen	SOLUBLE COLLAGEN	9.1	●	×	×	+	Basic type
Atelocollagen SS	SUCCINOYL ATELOCOLLAGEN	4.5	△	●	●	++	Collagen that is made by modifying succinic acids to increase compatibility
Atelocollagen SS-V	SUCCINOYL ATELOCOLLAGEN CELLULOSE GUM	4.5	△	●	●	++	Highly stable collagen that prevents decreased viscosity caused by heat
Atelocollagen MS	MYRISTOYL SUCCINOYL ATELOCOLLAGEN	4.5	△	●	●	+++	Amphiphilic collagen with succinic acids and myristic acids modified
Atelocollagen H	SOLUBLE COLLAGEN	5.1	△	●	●	++	Soluble collagen that is easy to dissolve under neutrality conditions
Soluge	ATELOCOLLAGEN	9.5	●	●	△	++++	Middle-sized Atelocollagen with increased solubility and compatibility

Hydrogen ion concentration for dissolution of various collagens

■ : Hydrogen ion concentration for dissolution



Amphiphilicity of Atelocollagen MS



Appearance was observed after 10 g of 0.1% collagen solution was added to 0.1 g foam-type face wash. Vials were shaken 100 times and left for five minutes.

# PRODUCTS LINEUP Collagen

## Shark Fin Atelocollagen

Product number | AFN-221 · AFS-121 ~ 221 · AFV-121 · AFM-521



Rare, domestically produced baby-skin-like collagen. This is natural marine Atelocollagen that contains a 50% baby-collagen-like substance (homotrimer collagen: elastoidin).

Domestically produced material	Sustainable
Marine derived	Moisturizing
Firmness and elasticity	Prevention of wrinkles and sagging
Barrier function	Film formation
Irritation alleviation	Stabilization of emulsification
Improved foaming property	

■ Source: shark (fin) ■ Origin: Kesenuma, Miyagi ■ Main Ingredients INCI name: ①SOLUBLE COLLAGEN ②SUCCINOYL ATELOCOLLAGEN ③MYRISTOYL SUCCINOYL ATELOCOLLAGEN

## Soluge

Product number | AFN-221



Technology for removing non-helical regions from collagen to manufacture collagen for medical use and the industry's first middle size collagen. The sizing process achieved both high moisturizing capacity and activation of cellular functions at the same time. It is characterized by high compatibility with other ingredients, high solubility, and ease of formulation.

Domestically produced material	Sustainable
Marine derived	Moisturizing
Firmness and elasticity	Prevention of wrinkles and sagging
Hair care	

■ Source: shark (skin) ■ Origin: Kesenuma, Miyagi ■ Main Ingredient INCI name: ATELOCOLLAGEN

## Shark Atelocollagen

Product number | ASS-121 ~ 221



Natural marine collagen extracted from the dermis of blue shark harvested in Kesenuma, Miyagi. It is characterized by a less viscous feel than animal-based collagen. It easily penetrates the skin and feels like adhesive.

Domestically produced material	Sustainable
Marine product based	Moisturizing
Firmness and elasticity	Prevention of wrinkles and sagging
Barrier function	Film formation

■ Source: shark (skin) ■ Origin: Kesenuma, Miyagi ■ Main Ingredient INCI name: SUCCINOYL ATELOCOLLAGEN

## Tilapia Atelocollagen H

Product number | ATH-121 ~ 221



Natural fish Atelocollagen extracted from tilapia scales. It has higher thermal stability than other fish-derived collagens because it is highly soluble in neutral solutions and made from tropical fish.

Sustainable	Fish-derived	Moisturizing
Firmness and elasticity	Prevention of wrinkles and sagging	Barrier function
Film formation		

■ Source: Tilapia (scale) ■ Origin: Taiwan ■ Main Ingredient INCI name: SOLUBLE COLLAGEN

## Porcine Atelocollagen

Product number | APN-211 ~ 221 · APS-111 ~ 411 · APV-121 ~ 623



Collagen extracted from porcine dermis. As a porcine-derived raw material, we use the dermis of domestically farmed, healthy pigs that have passed inspection under Article 10 of the Slaughterhouse Act. The raw material is closer to humans in the amino acid composition than fish-derived collagen. It is highly stable.

Domestically produced material	Moisturizing
Firmness and elasticity	Prevention of wrinkles and sagging
Barrier function	Film formation
Stability of emulsification	Improved foaming property

■ Source: porcine (skin) ■ Origin: Japan ■ Main Ingredients INCI name: ①SOLUBLE COLLAGEN ②SUCCINOYL ATELOCOLLAGEN ③MYRISTOYL SUCCINOYL ATELOCOLLAGEN

# SPECIFICATION Collagen

## Collagen (shark fin)

Product number	Product name	Main ingredient INCI Name	中文名称	Other ingredients	Property	Package
AFN-221	Shark Fin Atelocollagen 1% PE	SOLUBLE COLLAGEN	可溶性胶原	Citric acid, sodium citrate, phenoxyethanol, water	Solution	1kg
AFS-121	Shark Fin Atelocollagen SS 0.3%PE	SUCCINOYL ATELOCOLLAGEN	琥珀酸端胶原	Disodium phosphate, potassium phosphate, phenoxyethanol, water		
AFS-221	Shark Fin Atelocollagen SS 1% PE			Disodium phosphate, potassium phosphate, phenoxyethanol, cellulose gum, water		
AFV-121	Shark Fin Atelocollagen SS-V 0.3% PE					
AFM-521	Shark Fin Atelocollagen MS 0.8% PE	MYRISTOYL SUCCINOYL ATELOCOLLAGEN	肉豆蔻酸琥珀酸端胶原	Disodium phosphate, potassium phosphate, phenoxyethanol, water		

\*Methylparaben(MP) products are made-to-order.

## Collagen (shark skin)

Product number	Product name	Main ingredient INCI Name	中文名称	Other ingredients	Property	Package
AFN-221	Soluge 1% PE	ATELOCOLLAGEN	缺端胶原	Phenoxyethanol, water	Solution	1kg
ASS-121	Shark Atelocollagen SS 0.3% PE	SUCCINOYL ATELOCOLLAGEN	琥珀酸端胶原	Disodium phosphate, potassium phosphate, phenoxyethanol, water		1kg
ASS-221	Shark Atelocollagen SS 1% PE					

\*Methylparaben(MP) products are made-to-order.

## Collagen (fish-derived)

Product number	Product name	Main ingredient INCI Name	中文名称	Other ingredients	Property	Package
ATH-121	Tilapia Atelocollagen H 0.3% PE	SOLUBLE COLLAGEN	可溶性胶原	Disodium phosphate, potassium phosphate, phenoxyethanol, water	Solution	1kg
ATH-221	Tilapia Atelocollagen H 1% PE					

## Collagen (porcine)

Product number	Product name	Main ingredient INCI Name	中文名称	Other ingredients	Property	Package
APN-211	Porcine Atelocollagen 1% MP	SOLUBLE COLLAGEN	可溶性胶原	Citric acid, sodium citrate, methylparaben, water	Solution	1kg
APN-221	Porcine Atelocollagen 1% PE			Citric acid, sodium citrate, phenoxyethanol, water		
APS-111	Porcine Atelocollagen SS 0.3% MP	SUCCINOYL ATELOCOLLAGEN	琥珀酸端胶原	Disodium phosphate, potassium phosphate, methylparaben, water		
APS-121	Porcine Atelocollagen SS 0.3% PE			Disodium phosphate, potassium phosphate, phenoxyethanol, water		
APS-211	Porcine Atelocollagen SS 1% MP*			Disodium phosphate, potassium phosphate, methylparaben, water		
APS-411	Porcine Atelocollagen SS 2% MP*					
APV-121	Porcine Atelocollagen SS-V 0.3% PE			Disodium phosphate, potassium phosphate, phenoxyethanol, cellulose gum, water		
APV-623	Porcine Atelocollagen SS-V 0.05% PE					
APM-211	Porcine Atelocollagen MS 1% MP	MYRISTOYL SUCCINOYL ATELOCOLLAGEN	肉豆蔻酸琥珀酸端胶原	Disodium phosphate, potassium phosphate, methylparaben, water		1kg
APH-311	Porcine Atelocollagen H 1.5% MP	SOLUBLE COLLAGEN	可溶性胶原			

\*Phenoxyethanol(PE) products and bovine Atelocollagen are made-to-order.

# Importance of domestically produced materials

Koken identifies the power of natural materials to draw new potential from them. Our products are made from domestically produced materials that are selected with consideration for safety and reliability.

## Increased needs for natural and/or domestically produced materials



Today, more consumers want natural cosmetics made with the concept of naturally derived ingredients. We have distributed the raw materials of cosmetics based on domestically produced materials as an Atelocollagen pioneer and a specialist in macromolecular raw materials. With over 30 years of experience in the development of collagen for cosmetic use and natural macromolecules, we have developed new raw materials that satisfy many different needs.

## La France pears, the Yamagata specialty, triggered new development



Yamagata University and a local company in Yamagata discovered that La France pears contain  $\beta$ -arbutin and established the methods for extracting and refining the ingredient from branches of the fruit trees. Focusing on the usefulness, Koken developed LaFrance Koken, a raw material for cosmetics, in cooperation with the local company and research institutes. In the past, there were no extracts containing  $\beta$ -arbutin derived from domestically produced materials. This successful development made us aware of new potential for plant-based materials. It triggered the commencement of raw material development based on domestically produced, plant-based materials.

## Eco-friendly, sustainable development of raw materials



LaFrance Koken is an extract drawn from branches that are agricultural waste. It was developed as part of the Yamagata 3Rs (Reduce, Reuse, and Recycle) project for promoting a recycling society. The cosmetic products containing LaFrance Koken aid recycling. We also develop other raw materials using agricultural products that cannot be sold in the consumer market due to their defective appearance and materials that are hardly used and discarded because of limited use applications.

## Pursuit of safety and reliability with clear traceability



We established a production system featuring traceability in cooperation with the local government and the local company in Yamagata, where our plant is located. Follow the production history, including the farmers. This high traceability ensures product development that is safe and reliable for consumers. We try to build a close relationship with producers, local agricultural cooperatives, the local government, and local businesses, and select materials strictly in material development.

## Certain evidence and pursuit of functionality



To address consumers' skin concerns, which is the main purpose of cosmetics, we develop Japanese-made, functional raw materials supported by evidence as well as create the image of safety and reliability. In the long-term research and development with the local government, the local company, and the local research institutes (Yamagata University and Keio University), we discovered the usefulness of a wide range of plants in Yamagata, the fruit kingdom prefecture, as materials for cosmetics, and use them as new, raw materials.

## More potential for domestically produced materials



We also use materials from other areas. Atelocollagen is made from shark harvested in Kesenuma, Miyagi. Sacran is expected to be used for healthcare, extracted from *Aphanothece sacrum*, algae from Kumamoto and Fukuoka. These materials are the results of the endeavors of producers and developers. To meet diverse cosmetic needs, we will do research on a wide range of materials produced in different places of Japan and deliver safe, reliable, and original natural raw materials.



## NATURAL MACROMOLECULE

Natural macromolecules extracted from plants, marine creatures and other materials have functions specific to macromolecules that vary by raw material, for instance, increase in viscosity, gelation, coating formation, stabilization of foam, moisturizing, and improvement in sense of use.

The product lineup includes plant-based Pholitect® and Sacran®, and marine-creature-derived elastin.

# PRODUCTS LINEUP Natural macromolecule

## Pholitect®

Product number | PME-121 · PME-131



Botanical shield polymer was developed with a focus on the high water-retaining capacity of polysaccharides secreted by nameko mushrooms. It alleviates external stimuli with high anti-inflammatory and protective effects.

Domestically produced material	Sustainable	Pesticide-free
Moisturizing	Barrier function	Skin protection
Coating formation	Anti-inflammatory	Irritation alleviation
Improved texture	Stabilization of emulsification	Improved foaming property
Makeup	UV care	

■ Source: Nameko mushroom ■ Origin: Yamagata ■ Main ingredient INCI name: PHOLIOTA MICROSPORA POLYSACCHARIDES

## Sacran®

Product number | —



The macromolecular polysaccharide extracted from Aphanothece sacrum, with the molecular weight of approximately 29,000,000 Aphanothece sacrum is rare algae that is grown in the subsoil water from the Aso Mountains in Kyushu.

Domestically produced material	Sustainable
Pesticide-free	Moisturizing
Barrier function	Coating formation
Anti-inflammatory	Anti-pollution

■ Source: Aphanothece sacrum ■ Origins: Kumamoto and Fukuoka ■ Main ingredient INCI name: APHANTHECE SACRUM POLYSACCHARIDES

## Elastin

Product number | EBA-211 ~ EME-221



The protein reinforces bonding between collagen to make the skin firm and elastic. Decreasing with age, it is said to cause wrinkles and sagging in the skin.

Sustainable	Moisturizing*	Firmness and elasticity
Prevention of wrinkles and sagging	*Elasocean	

■ Main ingredient INCI name: HYDROLYZED ELASTIN

Product name	Source	Extraction method
Elasocean	Fish	Enzymatic extraction
Hydrolyzed Elastin	Bovine (nuchal ligament)	Enzymatic extraction
Hydrolyzed α-Elastin	Bovine (nuchal ligament)	Extraction using oxalic acid (low odor)

# SPECIFICATION Natural macromolecule

### Pholitect®

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index*1	Property	Package
PME-131	Pholitect BG	PHOLIOTA MICROSPORA POLYSACCHARIDES	*	Butylene glycol (plant-derived), water	1	Solution	1kg
PME-121	Pholitect PE		*	Phenoxyethanol, water	0.995		

\*The term "pholiota microspora polysaccharides" may be changed to "polyamino sugar condensate," which is used by INCI. The Chinese term(中文名称) is 多氨基酸多糖化合物.

### Sacran®

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index	Property	Package
—	Sacran B	APHANTHECE SACRUM POLYSACCHARIDES	水前寺紫菜 (APHANTHECE SACRUM) 多糖	Butylene glycol, water	0.7 *1	Solution	1kg
—	Sacran			—	1 *2	Fiber	10g

### Elastin

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index	性状	包装
EME-211	Elasocean 4% MP	HYDROLYZED ELASTIN	水解弹性蛋白	Disodium phosphate, potassium phosphate, methylparaben, water	0.996	Solution	1kg
EME-221	Elasocean 4% PE			Disodium phosphate, potassium phosphate, phenoxyethanol, water	0.993		
EBA-211	Hydrolyzed α-Elastin 4% MP*			Disodium phosphate, potassium phosphate, methylparaben, water	0.996		
EBE-311	Hydrolyzed Elastin 10% MP*			Disodium phosphate, potassium phosphate, methylparaben, water	0.996		

\*Phenoxyethanol(PE) products are made-to-order.

\*1: ISO 16128, mixing water included. \*2: ISO 16128, mixing water not included. \*Inquire about the naturally derived index for each raw material. 15



## BOTANICAL

Domestically produced  
plant-derived raw materials

Koken uses a variety of manufacturing methods, such as extraction, freeze-drying, fermentation, and pressing, according to the characteristics of the materials and applies plant-based beauty ingredients to cosmetic raw materials. The raw materials have different effects, for example, moisturizing, anti-aging, improvement of skin quality and chapped skin, prevention of sagging, and soft skin scrub.

The raw materials produced in Japan include La France pears, cherries, melons, watermelons, Shonai Kaki persimmons, and rice.



# PRODUCTS LINEUP

Raw materials derived from domestically produced plants

## Cherry Koken



Extract manufactured by hot water extraction

Product number CFE-131

The fruit extract is derived from cherries (Napoleon). It is rich in polyphenol, with an anti-oxidant effect equivalent to vitamin C. It is an eco-friendly raw material that uses inedible cherries from trees for pollination.

Domestically produced material	Sustainable
Moisturizing	Anti-aging
Promotion of NMF production	Improvement of skin quality
Peeling	

■ Source: Cherries (fruit) ■ Origin: Yamagata ■ Main ingredient INCI name: PRUNUS AVIUM (SWEET CHERRY) FRUIT EXTRACT

## LaFrance Koken



Extract manufactured by hot water extraction

Product number LWE-121 · LWE-131

The botanical extract is derived from the branches of La France pear trees that are rich in natural  $\beta$ -arbutin. It suppresses tyrosinase, inhibits melanin production, and has an anti-oxidant effect. More effective than synthesized arbutin, it is an eco-friendly raw material and pruned branches, which are industrial waste, are reused.

Domestically produced material	Sustainable
Moisturizing	Beta-arbutin
Anti-oxidant	Promotion of turnover
	Anti-aging

■ Source: La France pears (branch) ■ Origin: Yamagata ■ Main ingredient INCI name: PYRUS COMMUNIS (PEAR) TWIG EXTRACT

## Melon Koken



Extract manufactured by hot water extraction

Product number MEE-131

The fruit extract is derived from Wakazumi (young picked) melons (Tsuruhime Red). Young picked melons contain more beauty ingredients than ripe fruits. They improve skin texture and smoothness. To be eco-friendly, we use melons picked for fruit thinning that used to be thrown away.

Domestically produced material	Sustainable
Picked young	Moisturizing
Improvement of skin quality	Promotion of turnover
	Texture and smoothness

■ Source: Melon (fruit) ■ Origin: Yamagata ■ Main ingredient INCI name: CUCUMIS MELO(MELON) FRUIT EXTRACT

## Suika(Watermelon) Extract Obanzawa



Extract manufactured by hot water extraction

Product number WME-131

The fruit extract is derived from Wakazumi (young picked) watermelons (Obanzawa Watermelon). It addresses a variety of skin concerns, such as dullness, disturbed turnover, inflammation, decreased barrier function, and skin quality issues, including texture, smoothness, and drying. It promotes synthesizing hair growth genes. Recommended for sculpting or eyelash care. It is an eco-friendly raw material that uses watermelons picked for fruit thinning.

Domestically produced material	Sustainable
Picked young	Moisturizing
Anti-oxidant	Anti-glycation
Promotion of turnover	Promotion of NMF production
Natural moisturizing factor	Improvement of skin quality
Peeling	Hair care
	Sculp care
	Anti-inflammation

■ Source: Watermelon (fruit) ■ Origin: Yamagata ■ Main ingredient INCI name: CITRULLUS LANATUS(WATERMELON) FRUIT EXTRACT

## Cherry Powder Koken



Fruit powder (freeze-drying technique)

Product number CFP-000

These powdered beauty ingredients are contained in fruit and cherry juice (Beni Sayaka), manufactured using a freeze-drying technique. Rich in polyphenol and flavonoid with potential anti-inflammatory and anti-oxidant effects.

Domestically produced material	Sustainable
Anti-aging	Anti-oxidant
Soft skin scrub	Anti-inflammation

■ Source: Cherries (fruit) ■ Origin: Yamagata ■ Main ingredient INCI name: PRUNUS AVIUM(SWEET CHERRY) FRUIT

## LaFrance Powder Koken

Fruit powder  
(freeze-drying technique)

Product number LFP-000



These powdered beauty ingredients are contained in La France fruit and juice, manufactured using a freeze-drying technique. Potential benefits include prevention of skin sagging and an anti-oxidant effect.

Domestically produced material	Sustainable
Prevention of wrinkles and sagging	Anti-aging
Anti-oxidant	Soft skin scrub
	Relaxation

■ Source: La France pears (fruit) ■ Origin: Yamagata ■ Main ingredient INCI name: PYRUS COMMUNIS(PEAR) FRUIT

## Shonai Kaki Powder Koken

Fruit powder(freeze-dried)

Product number SKP-000



Powdered beauty ingredients contained in Shonai Kaki fruits and juice produced in Yamagata are manufactured with a freeze-drying technique. Rich in polyphenols, including catechin that has anti-oxidant and deodorizing effects, they have high cellular proliferation activity to produce anti-aging effects.

Domestically produced material	Sustainable
Anti-aging	Anti-oxidant
Soft skin scrub	Promotion of turnover
	Odor elimination

■ Source: Persimmon fruit ■ Origin: Yamagata ■ Main ingredient INCI name: DIOSPYROS KAKI FRUIT POWDER

## Rice Extract Koken

Fermented extract

Product number RFF-111 · RFF-121



The fermented extract of sake is made from rice produced in Mie. Sake contains a variety of amino acids and organic acids, made using the power of fermentation of rice koji (malted rice) and yeast. It is expected to condition the skin environment similar to a sake bath.

Domestically produced material	Sustainable
Moisturizing	Improvement of barrier function
Natural moisturizing factor	Skin conditioning
Promotion of blood circulation	Dullness
Peeling	Radiance
	Improvement of redness

■ Source: Rice plant ■ Origin: Mie ■ Main ingredient INCI name: RICE FERMENT FILTRATE (SAKE)

## SHONAI BIJIN-Rice Fermented Extract(SAKE)

Fermented extract

Product number RFF-221



The rice fermented extract of Shonai Bijin, Jun-mai-shu is made from rice produced in Yamagata. We employ the traditional Kimoto zukuri (brewing) method that fully utilizes the fermentation power of natural materials. Rich in amino acids, peptides, glucose, and organic acids, it is expected to have moisturizing, peeling, skin-softening, and blood circulation promoting effects.

Domestically produced material	Sustainable
Media coverage accepted	Moisturizing
Improvement of barrier function	Natural moisturizing factor
D-amino acid	Skin conditioning
	Promotion of blood circulation
	Care for cold constitution and blood flow
Dullness and stiffness	Peeling
	Radiance
Improvement of redness	Suppression of sebum

■ Source: Rice plant ■ Origin: Yamagata ■ Main ingredient INCI name: RICE FERMENT FILTRATE (SAKE)

## Squeezed Rice Oil

Functional oil

Product number RBS-105



The plant-derived oil is pressed from the bran of domestically grown rice and physically refined without chemicals. Contains  $\gamma$ -oryzanol, which brightens the skin and absorbs UV rays, and anti-oxidants vitamin E and Super Vitamin E.

Domestically produced material	Sustainable
Moisturizing	Emollient
Brightening	Barrier function
	Anti-aging
Hair care	Anti-oxidation
	UV care

■ Source: Rice bran ■ Origin: Japan ■ Main ingredient INCI name:ORYZA SATIVA(RICE) BRAN OIL

# SPECIFICATION Raw materials derived from domestically produced plants

## Botanical extract (hot water extraction)

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index*1	Property	Package
CFE-131	Cherry Koken BG	PRUNUS AVIUM (SWEET CHERRY) FRUIT EXTRACT	欧洲甜桃 (PRUNUS AVIUM) 果提取物	Butylene glycol, water	0.5	Solution	1kg
LWE-131	LaFrance Koken BG	PYRUS COMMUNIS (PEAR) TWIG EXTRACT	—		0.7		
LWE-121	LaFrance Koken PE		—	Phenoxyethanol, water	0.997		
MEE-131	Melon Koken BG	CUCUMIS MELO (MELON) FRUIT EXTRACT	甜瓜 (CUCUMIS MELO) 果提取物	Butylene glycol, water	0.7		
WME-131	Suika (Watermelon) Extract Obanzawa BG	CITRULLUS LANATUS (WATERMELON) FRUIT EXTRACT	西瓜 (CITRULLUS LANATUS) 果提取物	Butylene glycol, water	0.7		

\*We are able to receive special orders for products that do not contain water.

## Fruit powder (freeze-drying technique)

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index*2	Property	Package
CFP-000	Cherry Powder Koken	PRUNUS AVIUM (SWEET CHERRY) FRUIT	—	Maltodextrin, sucrose, Zea mays (corn) starch, Elaeis guineensis (palm) oil	1	Powder	100g
LFP-000	LaFrance Powder Koken	PYRUS COMMUNIS (PEAR) FRUIT	—	Cyclodextrin, sucrose, Zea mays (corn) starch, Elaeis guineensis (palm) oil	1		
SKP-000	Shonai Kaki Powder Koken	DIOSPYROS KAKI FRUIT POWDER	—	Maltodextrin, sucrose, Zea mays (corn) starch, Elaeis guineensis (palm) oil	1		

## Fermented extract

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index*1	Property	Package
RFF-111	Rice Extract Koken MPN	RICE FERMENT FILTRATE (SAKE)	稻米发酵产物滤液	Sodium methylparaben	0.999	Solution	1kg
RFF-121	Rice Extract Koken BG			Butylene glycol (plant-derived)	1		
RFF-221	SHONAI BIJIN-Rice Fermented Extract (SAKE) BG						

## Functional oil

Product number	Product name	Main ingredient INCI name	中文名称	Other ingredients	Naturally-derived index*2	Property	Package
RBS-105	Squeezed Rice Oil	ORYZA SATIVA (RICE) BRAN OIL	稻 (ORYZA SATIVA) 糠油	—	1	Solution	16.5kg

\*1: ISO 16128, mixing water included: \*2: ISO 16128, mixing water not included \*Inquire about the naturally derived index for each raw material.



## FREEZE DRY

### Freeze-dried products

Koken commenced the consigned manufacturing of freeze-dried cosmetic products in 1991, earlier than competitors in Japan, applying the freeze-drying technique cultivated in the production of collagen for medical use.

We manufacture and sell freeze-dried products and provide them as OEM, pursuing the innate power of the perception of collagen.

## The research and development section and the production system

Koken has a research and development section and a production section at Tsuruoka Plant in Yamagata. A system connects the research and development section that discusses formulation and the production section that engages in consigned production. It allows us to develop products and carry out consigned business promptly according to customers' needs.

Sakata Plant was constructed as facilities specialized in the consigned freeze-drying business in 2012. It allows us to reduce lead time and offer great flexibility in lot sizes from small to large. Taking advantage of the industry's largest freeze-dryer, we concentrate on primary processing of raw materials (mass-production accepted) in addition to OEM business for freeze-dried cosmetics.

Having introduced the quality management system compliant with ISO 9001 and arranged a superb quality control environment, we pursue high added value and quality of raw materials and cosmetic products using a freeze-drying technique.



Sakata Plant in Yamagata (automated plant specialized in the OEM business using a freeze-drying technique)

Tsuruoka Plant in Yamagata

## Strengths of Koken

### High-quality product proposals

Products are expected to have higher restorability and dissolubility at re-dissolution if they are processed into a spongy porous form. Our facilities permit replacement of air with nitrogen inside and automatic capping of bottles, preventing oxidation. Based on 30 years of success, we will support your business from planning and proposals to formula design.

### Support to planning and formulation

- We will propose formulas suitable for freeze-dried cosmetics containing the requested ingredients.
- We are ready to design formulas containing a high concentration of collagen based on the advantages of a collagen manufacturer.
- Our support covers proposals of containers suitable for freeze-dried products, containers with a proven track record, and commercialization of products using containers that meet customer needs.
- We welcome requests or inquiries about primary processing for mass-production of cosmetics and novel formulas in addition to bottling.



### Consignment business flow



## Freeze-dried raw materials

### ■ Aqua Gel

Aqua Gel is available as a soluble sheet or cube. It is dissolved in water and turns into gel. It contains naturally derived ingredients such as alginic acids, soluble collagen, and squalene. The freeze-drying technique allows triple-helix collagen (raw collagen) to be kept in a fresh state. Preservative-free, the lightness adds convenience to products. Easily carry a product when travelling or going out.

\*An anti-wrinkle functionality test has been conducted on Koken Perfect Aqua Gel Sheet  
Sold separately as packaging for aqua gel sheet(bulk) and cubic.



Product number	Product name	Package	Ingredients (INCI name)
ATP7205	Koken Perfect Aqua Gel Sheet 2pcs/set	50sets/box	<ul style="list-style-type: none"> <li>• ALGIN</li> <li>• PROPYLENE GLYCOL ALGINATE</li> <li>• SOLUBLE COLLAGEN</li> <li>• SQUALANE</li> <li>• POLYGLYCERYL-10 LAURATE</li> </ul>
ATP7405	Koken Perfect Aqua Gel Sheet 4pcs/set		
—	Koken Perfect Aqua Gel Sheet 2pcs/set(bulk) *without aluminium package	100sets/bag	
—	Koken Perfect Aqua Gel Sheet 4pcs/set(bulk) *without aluminium package		
CTP9901	Cubic Koken Aqua Gel	475pcs/bottle	
—	Aluminum flat bag with a notch (100×120 mm)	100sets/bag	
—	80-pack container for KPAGS (20×20 mm)	80pcs/bag	

#### Property/Package



Aqua Gel Sheet  
Size:  
20(L) x 20(W)  
x 1(H) mm  
Weight: 8 ~ 9mg



Cubic  
Size: 8(L) x 8(W) mm  
Weight: 10mg



#### Special orders to be accepted (ingredients and shapes)



Add ingredients freely and/or customize base formulas. For sheet types, we are able to accept special orders, such as for the eye area, round shapes, and heart shapes.



### What is freeze-drying?

Freeze-drying is the technique for manufacturing dried products by evaporating water from raw materials under a low temperature while they are frozen. It is widely used, from food processing to medical device processing. The low-temperature processing permits stable storage of thermally unstable raw materials. Freshness can be maintained because resulting products lack moisture that can cause bacterial growth.

## Freeze-dried cosmetics OEM business (cosmetic products)

We undertake the consigned FD processing business for double-form cosmetics that are prepared before use and re-melted when using by freeze-drying these cosmetics as lotions and serums containing collagen and/or raw materials with inferior temporal stability.

Examples of ingredients:

Triple-helix collagens, vitamins, and growth factors (GFs)



### Production process

Manufacturing products in a clean environment, we offer great flexibility in lot sizes from small to large.



Prepare solution/Fil containers



Freeze-drying



Labeling/Testing



Shipment

## OEM business for mass production (primary processing of raw materials)

We undertake the consigned FD processing business for raw materials that require drying without heating. We will fill trays with solution, freeze-dry it, and deliver a large quantity of each product.

Examples of consigned businesses (including prototypes):

Surfactants, polysaccharides, and vitamin C derivatives

\*We do not accept consigned powder processing.



## Advantages of freeze-dried cosmetics

### 1 Makes full use of functions of beauty ingredients

The functions of ingredients can be maintained by removing moisture and replacing the air with nitrogen for ingredients vulnerable to heat (collagen and growth factors) and ingredients that are easily oxidized and have low temporal stability (vitamin C). Beauty ingredients can be delivered to the skin as the most effective condition is maintained if cosmetic products remain fresh until use.

### 3 Concept of special care

Design formulas based on the concept of intensive care because freeze-dried cosmetics can contain a high concentration of raw materials that are difficult to use in general serums that are less stable and include water. Dissolve a product before use to feel the freshness and have a special feeling about the product.

### 2 No preservatives needed

The use of preservatives can be suppressed because freeze-dried cosmetics do not contain water associated with bacterial proliferation. Freshness can be maintained until products are used. Design cosmetic products that only contain beauty ingredients while removing ingredients that add stress to the skin.



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