

Eat Well, Live Well.



Eat Well, Live Well.



# Amino Acid Based Ingredients for Personal Care



Please contact the AJINOMOTO group, if you have any question about trademark registration.

Japan

**Ajinomoto Co., Inc.**  
15-1 Kyobashi 1-chome, Chuo-ku,  
Tokyo 104-8315, Japan

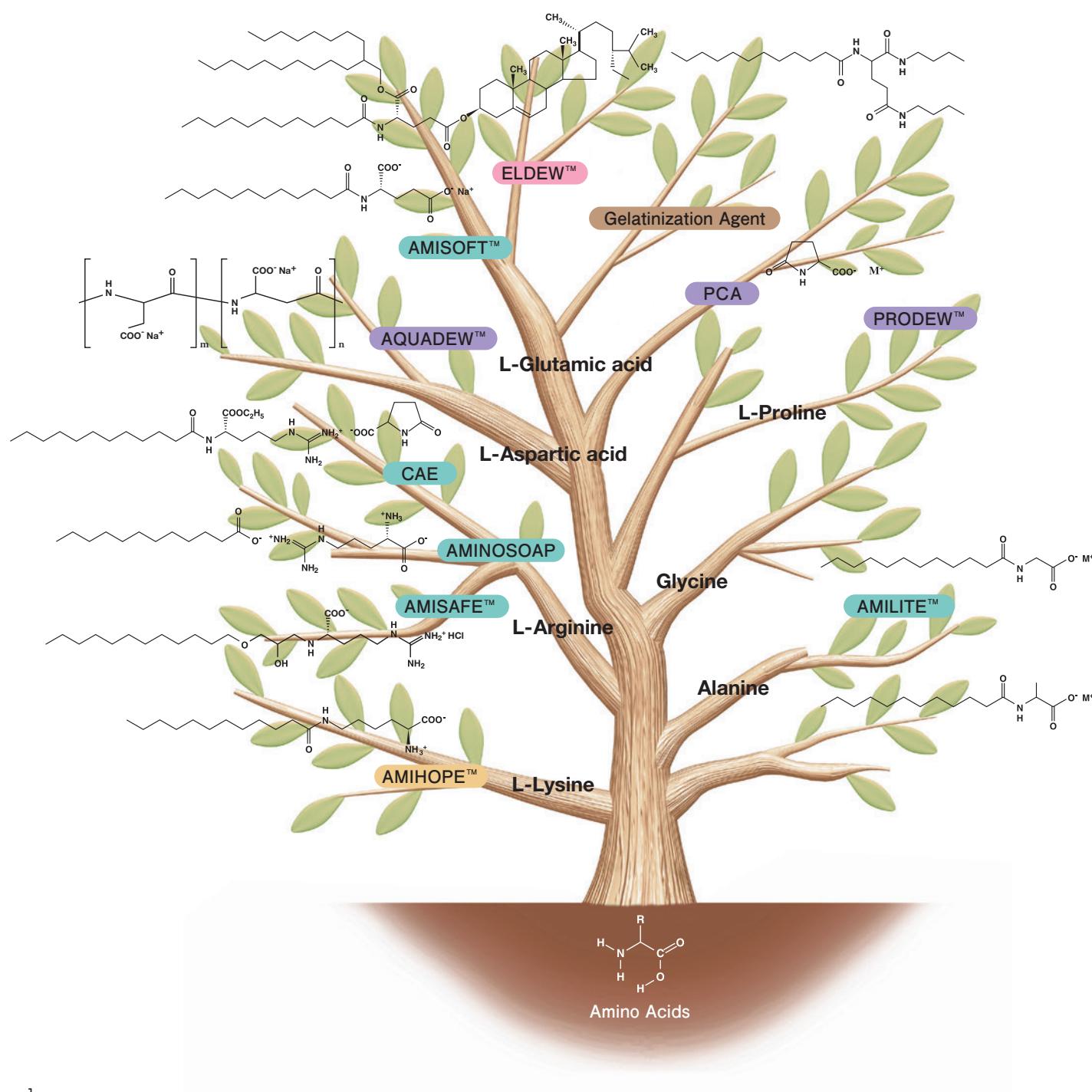
EMEA Countries

**S.A. Ajinomoto OmniChem N.V.**  
Axis Parc  
Rue Emile Francqui, 7  
1435 Mont-Saint-Guilbert, Belgium  
URL : <https://ajiaminoscience.eu/personalcare/>



# To bring the blessings of the earth and the very essence of life to more people, we develop amino acid based personal care ingredients friendly to people and to the earth.

It's no exaggeration to call amino acids "earth-friendly." Amino acids are natural materials born of Mother Earth from the very essence of life and closely related to human physiological functions. Earth-friendly and human-friendly, amino acids have many benefits yet to be explored. The first to market amino acids, Ajinomoto Co. has been a pioneer in personal care ingredients using amino acids, and is committed to exploring the virtually limitless performance characteristics of amino acids and to applying what we learn to the development of ever more beneficial personal care ingredients and products.



## The earth and amino acids

When and where did amino acids come from?

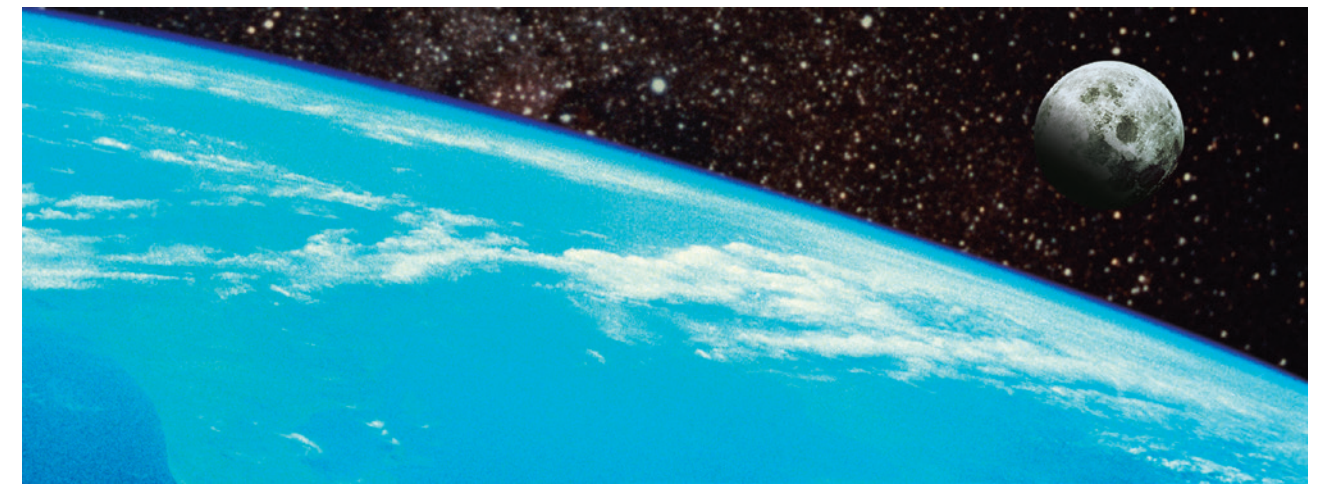
Answering this question touches on the origins of the earth.

Amino acids first formed some four billion years ago.

Water, ammonia, methane, and other substances combined while the planet was still young and temperatures were much higher than today.

Amino acids concentrated in tidal pools were transformed into proteins, while base compounds became nucleic acids. These continued to evolve, ultimately leading to the beginning of life.

It's no exaggeration to call amino acids earth-friendly. They are natural materials born of Mother Earth.



## Life and amino acids

Amino acids are called the source of life for good reason.

Our bodies' muscles, organs, skin, and hair are all made up of proteins, which are in turn made up of unique combinations of 20 types of amino acids. In the body, amino acids are converted through various metabolic pathways to a multiplicity of useful substances.

As the very essence for maintaining life, amino acids are naturally human-friendly.





Ajinomoto Co.'s personal care ingredients are developed from long-term research on amino acids. Our product lineup fits product concepts for a new era.

## THE ESSENCE OF OUR PERSONAL CARE

Ajinomoto Co. launched the world's first mild amino acid based surfactant – AMISOFT™ – in 1972. Its weakly acidic human-friendly features with highly biodegradable environmental-friendly factors added value to facial cleansers, shampoos, and bar soaps. These serve the needs of a new era and contribute to the development of attractive products.

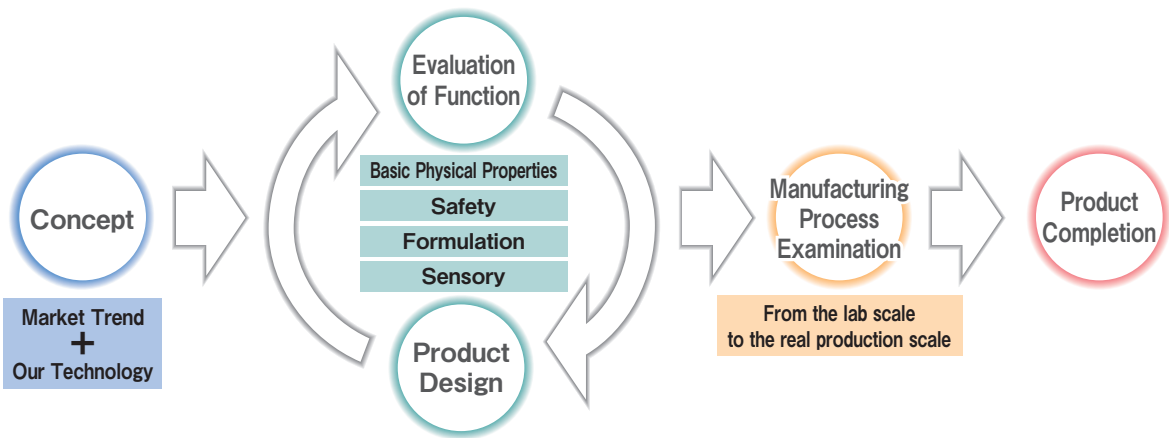
Ajinomoto Co., a pioneer in personal care ingredients using amino acids, has created an original product concept by expanding its product lineup with outstanding techniques and capabilities for developing brand-new unique ingredients.



### R&D capabilities based on a comprehensive knowledge of amino acids

On developing ingredients, we look into market needs to determine concepts using amino acids. Then, in product design and function evaluation, we study basic physico-chemical properties, safety, potential combinations, and sensory considerations before proceeding to manufacture. Ajinomoto Co.'s products globally serve customers by advanced R&D abilities of dedicated staff fully familiar with all ingredients involved.

#### Flow of Material Development



### Rich lineup of personal care ingredients based on carefully considered use and development concepts

Ajinomoto Co.'s personal care ingredients combine human-friendly and environmental-friendly amino acids to meet current market needs.

#### Ajinomoto Co.'s personal care ingredients are :

1. Mild ..... Gentle to skin and hair
2. Multifunctional ..... Uniquely functional and beneficial
3. Highly biodegradable ..... Environmentally-friendly
4. Derived from nature ..... Perfect for natural concept

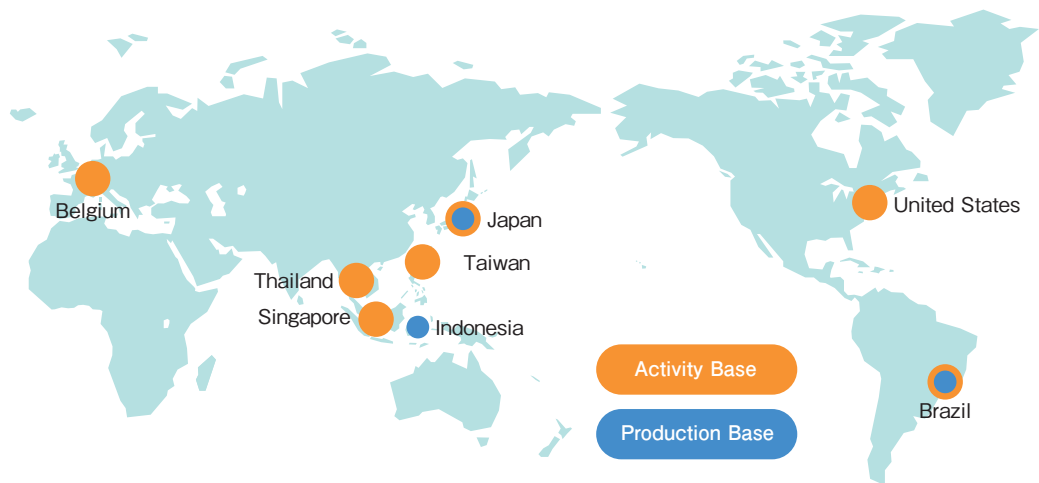
#### Abundant Lineups of Personal Care Material

Main Function	Trade Name
Cleaning agent	AMISOFT™ AMILITE™ AMINOSOAP
Conditioning	AMISAFE™ CAE
Humectants	PRODEW™ AJIDEW™ AQUADEW™
Emollients	ELDEW™
Functional Ingredient	AMIHOPE™
Gelatinization Agent	EB-21 GP-1



### Our high-quality products are provided worldwide through our global network.

As a global pioneer in amino acids and science – AminoScience – Ajinomoto Co. is expanding its R&D, production and sales network to Europe, the US, South America and Asia, thus contributing to the health, nutrition, and beauty of people worldwide. We are continuously developing new ingredients and products of the highest quality.



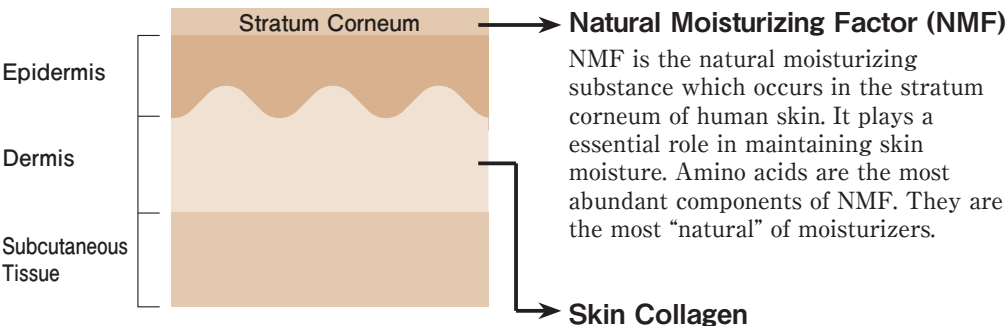
# Amino Acids

As a comprehensive manufacturer of amino acids, Ajinomoto Co. not only conducts a multifaceted range of original scientific research into amino acids, we also provide the world with a remarkable variety of amino acids for foods, medicines, feeds and cosmetics. In every area of our business, the Ajinomoto Co. brand is one you can trust for the highest standards of quality and reliability.



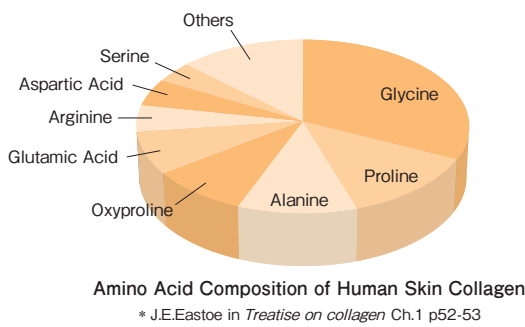
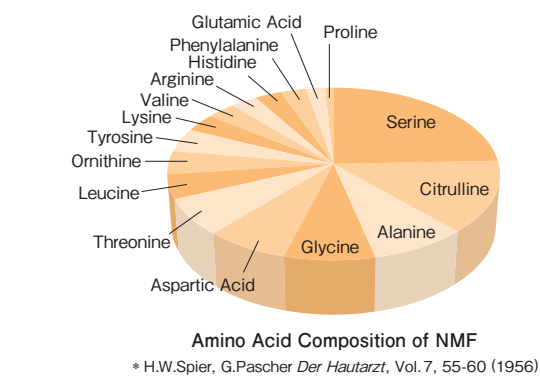
## Skin and Amino Acids

### Structure of Skin



Amino Acids	42%
PCA	12%
Lactic Acid	11%
Urea	7%
Others	28%

Composition of NMF  
\* H.W.Spier, G.Pascher *Der Hautarzt*, Vol. 7, 55-60 (1956)



## Hair and Amino Acids

### Amino Acids as Components of Hair

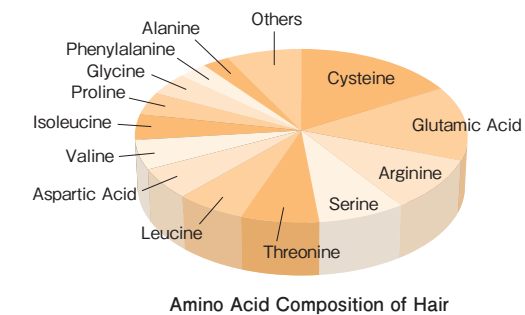
Keratin proteins derived from amino acids account for about 80% of the components which constitute human hair. Other components include water, lipids and melanin.

### The Scalp and Amino Acids

Since the scalp is skin, amino acids are essential to keeping it well-nourished and ready to promote healthy hair growth.

### Hair Growth Efficacy and Amino Acids

Amino acids such as L-Cysteine, L-Methionine and L-Serine are known to promote hair growth.



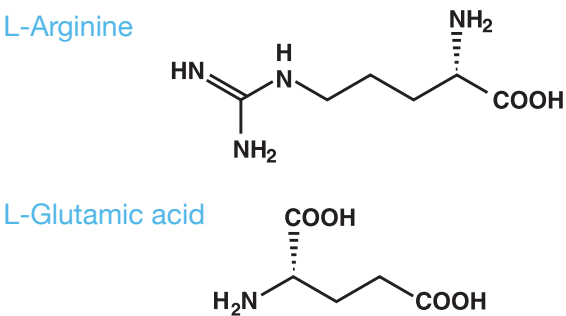
## Cosmetics and Amino Acids

Usage Category	Function	Amino Acids
Cosmetics	Moisturization	Proline, Other Amino Acids
	Neutralization	Base : Arginine Acid : Glutamic Acid, Aspartic Acid
	pH buffering	Sodium Glutamate, Glycine, Aspartic Acid, etc.
	Mitigation of irritation potential	Arginine
Permanent wave	Relaxing	Cysteine
Conditioner	Conditioning	Glycine
Hair nourishment	Hair nourishment*	Serine, Methionine

\* Nogeï Kagaku [Agricultural Chemistry], Vol.48, No.5 (1974)

## Basic and Acidic Amino Acids

L-Arginine is a typical basic amino acid with cellular activatory effect. L-Arginine is also widely used as a mild natural neutralizer. L-Glutamic acid, on the other hand, is a typical acidic amino acid, widely used as a mild neutralizer or a pH adjuster.

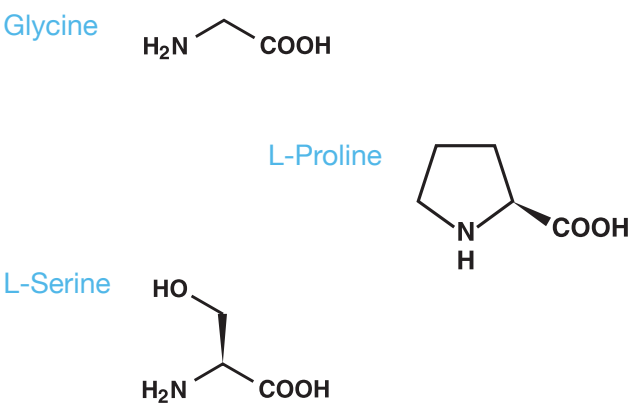


## Neutral Amino Acids

Glycine accounts for about one third of the amino acids which make up human skin collagen. Glycine is also well-suited to hair care products since it works to make hair smoother when “finger-combed” as well as in general enhancing hair aesthetics.

L-Serine, which accounts for about 30% of the amino acids contained in NMF, promotes the formation of the horny layer of the skin.

L-Proline stands out among amino acids for its moisturizing efficacy. Together with L-Serine and PCA, L-Proline is widely used as a moisturizer in skincare products.

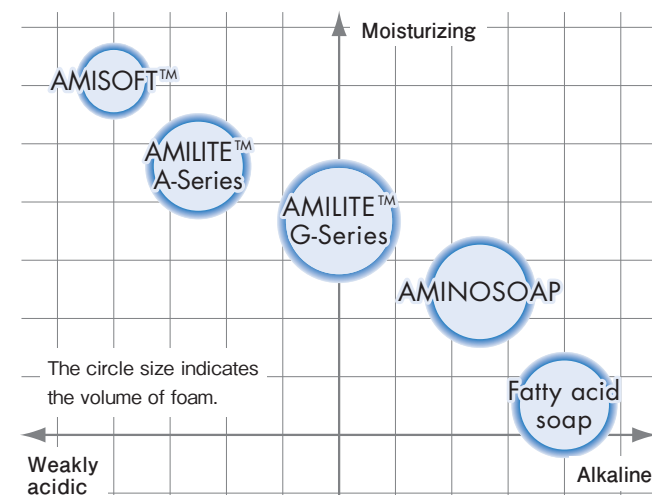




# Anionic Surfactants

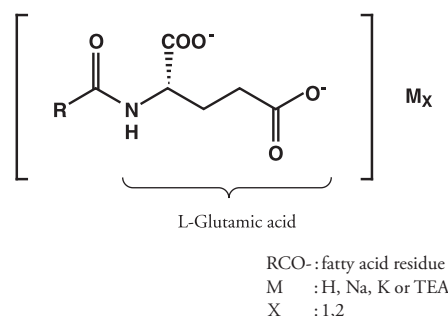
Ajinomoto Co.'s anionic surfactants derived from amino acids include AMISOFT™, notable for its moisturizing effect, and AMILITE™ and AMINOSOAP, which contribute a refreshing effect. Since all these products are hypoallergenic and environmentally friendly, they can be safely used in a wide range of ways, from hair care and skin care cosmetics.

## Image Map of Cleansing Agents



## AMISOFT™

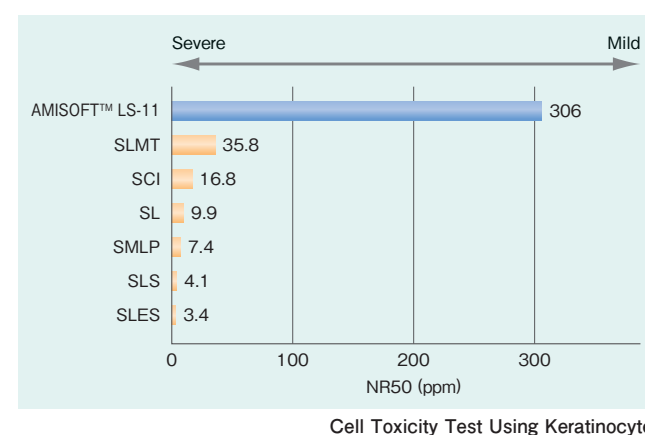
Since Ajinomoto Co. developed AMISOFT™, which is a pioneer product of amino-acid-based weakly acidic surfactant, AMISOFT™ has always been at the forefront of mild surfactant. AMISOFT™ is derived from L-Glutamic acid (an amino acid) and natural fatty acids. Extremely hypoallergenic and well suited as a mild cleansing agent. Their pHs are similar to that of the skin, therefore, they are very mild to the skin. AMISOFT™ doesn't dry out the skin, but leaves it feeling moisturized after washing. AMISOFT™ is available in a variety of products including the compounds of potassium salts, sodium salts, non-neutralized forms (acid type), and compounds varying acyl chain length. You can select the compound most suited to your end products, including bar soaps, facial cleansers, liquid cleanser, etc.



- Very mild and hypoallergenic.
- Weakly acidic similar to the pH level of the skin, leaving the skin no taut feeling.
- Gentle to the hair, without leaving it dry and coarse.

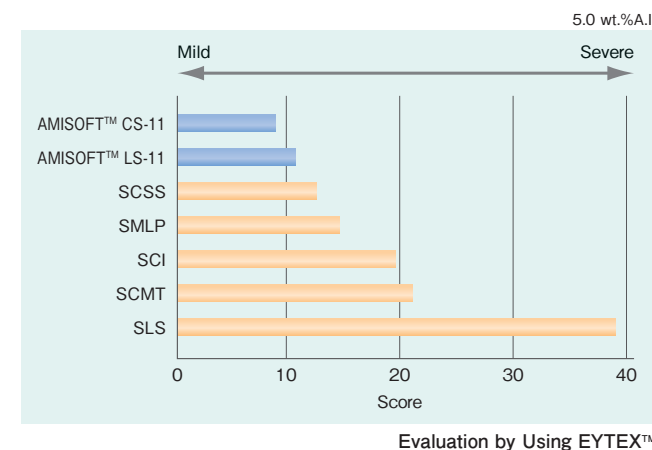
## Cell Toxicity Test

AMISOFT™ has been proven to show very low cell toxicity. After highly toxic cleansing agent contacts cells, it causes the destruction of the cell membrane and will eventually cause cell death. The cell toxicity test is used to determine the potential harshness of the cleansing agent.



## Irritation

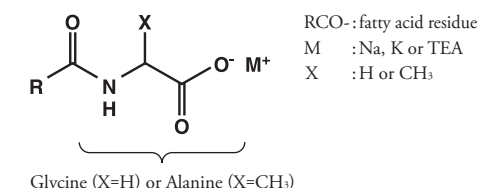
AMISOFT™ has been proven to be mild. Especially, it demonstrates mildness to eye.



AMISOFT™ CS-11 : Sodium Cocoyl Gultamate AMISOFT™ LS-11 : Sodium Lauroyl Gultamate SLMT : Sodium Methyl Lauroyl Taurate SCI : Sodium Cocoyl Isethionate SL : Sodium Laurate SMLP : Sodium Lauryl Phosphate SLS : Sodium Lauryl Sulfate SLES : Sodium Laureth Sulfate SCSS : Sodium Cocoyl Sulfosuccinate SCMT : Sodium Methyl Cocoyl Taurate

## AMILITE™

AMILITE™ is available in two versions : the Glycine-type, which is produced from Glycine and natural fatty acids, and Alanine-type, which is produced from Alanine and natural fatty acids. AMILITE™'s main characteristic is its high foaming ability. It produces creamy rich foam. It is notable for leaving the skin feeling fresh without making it feel taut.



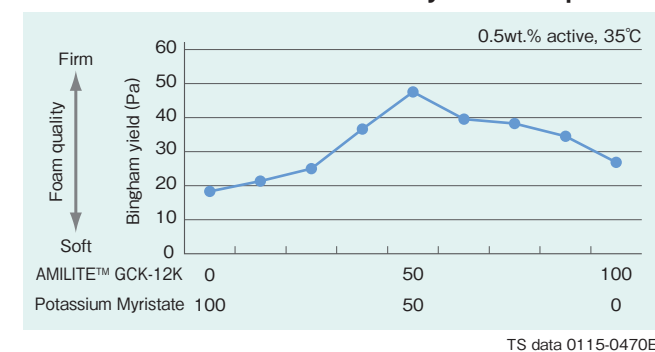
- Glycine and Alanine, both the main components of AMILITE™, are amino acids rich in human collagen and silk proteins, respectively.

## AMILITE™ G Series

The Glycine-type exhibits a synergistic effect with fatty acids. Consequently, yielding higher quality of elasticity as well as the volume of foam. This effect makes it most suitable for body shampoos or facial cleansing foams.

- Creamy foam which leaves the skin feeling fresh.
- Due to the synergistic effect with fatty acids, the volume maintenance and elasticity of the foam are improved.

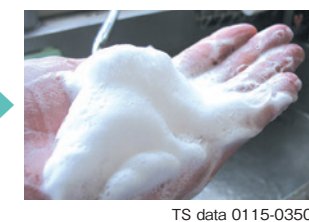
## Foam Quality Improvement by AMILITE™ GCK-12K in Combination with Fatty Acid Soap



## Fatty Acids Improve Foamability of AMILITE™ GCS-11

AMILITE™ GCS-11 provides rich foam quantity and excellent foam quality when combined with fatty acids. It is recommended to use approximately 10% fatty acids on the weight basis of AMILITE™ GCS-11 in order to obtain the most optimized effects.

AMILITE™ GCS-11	10.0%
Lauric acid	0.3%
Myristic acid	0.7%
Water	balance
Citric acid	q.s.
pH=7.0	



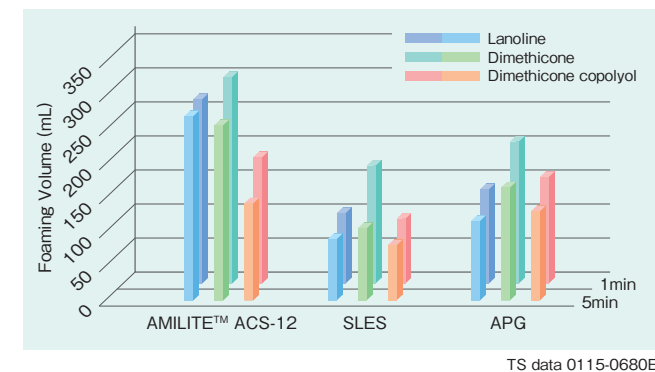
## AMILITE™ A Series

AMILITE™ ACS-12 is a mild cleansing agent derived from Alanine and palm fatty acid, and is suitable for hair shampoos. It has good conditioning ability in the presence of cationic polymer, and it imparts pleasant moisturizing feel after drying.

- The Alanine-type maintains high foaming ability even in the presence of oils such as silicone oil.

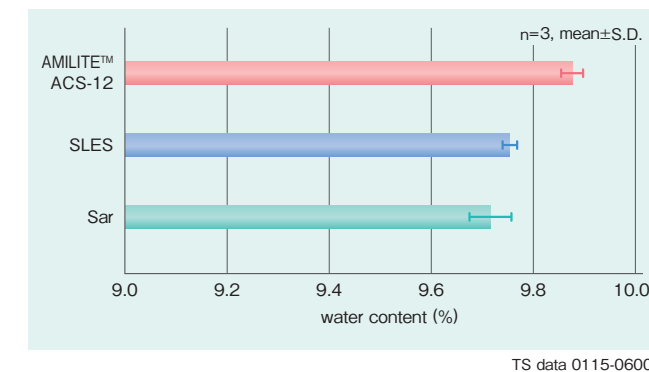
## Foaming Power of AMILITE™ ACS-12 in the presence of oil materials

AMILITE™ ACS-12 has good foaming ability even in the presence of oil materials.



## Effect of AMILITE™ ACS-12 on Hair Moisture Content

AMILITE™ ACS-12 keeps water content and moisturizes the hair.



AMILITE™ GCK-12K : Potassium Cocoyl Glycinate AMILITE™ GCS-11 : Sodium Cocoyl Glycinate AMILITE™ ACS-12 : Sodium Cocoyl Alaninate SLES : Sodium Laureth Sulfate (3E.O.) APG : Decyl Glucoside Sar : Sodium Lauroyl Sarcosinate

# Other Surfactants



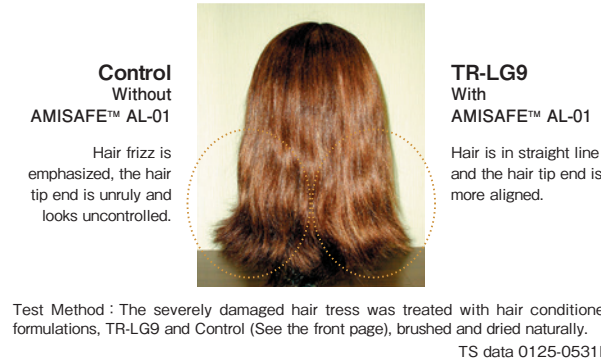
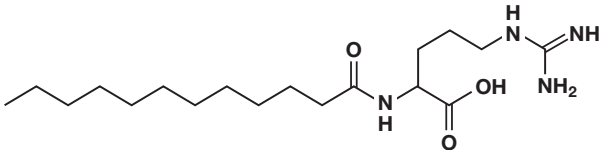
## AMISAFE™ AL-01 Amphoteric Surfactant

AMISAFE™ AL-01 is an amino acid based amphoteric surfactant derived from L-Arginine and fatty acid. AMISAFE™ AL-01 formulated in hair conditioners adsorbs to the hair and improves smoothness, moisturized feel and control of dry hair. These effects are more prominent on hair with severe damage.

### ■ Alleviation of unruly hair

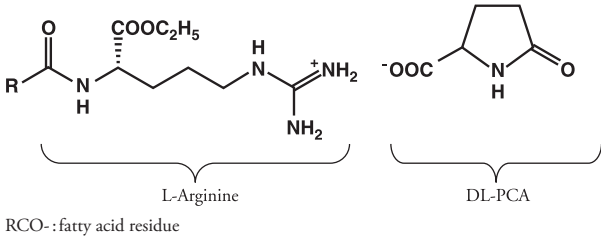
AMISAFE™ AL-01 alleviates unruly hair to leave hair controlled. This effect is more prominent on hair with severe damage.

Test Formulation	Control Without AMISAFE™ AL-01	TR-LG9 With AMISAFE™ AL-01
Stearamonium Chloride (63%)	2.0	2.0
AMISAFE™ AL-01	-	0.2
Hexyldecyl Isostearate	4.0	4.0
Cetearyl Alcohol	2.0	2.0
Lactic Acid (9%)	0.1	0.1
Water	91.9	91.7
Total	100.0	100.0



## CAE Cationic Surfactant

CAE is an amino acid based cationic surfactant derived from L-Arginine, DL-Pyrrolidone Carboxylic Acid, and fatty acid. CAE is a very safe ingredient suitable for cosmetic products. CAE is adsorbed to the hair and acts as a hair conditioner. CAE is biodegradable unlike most cationic surfactants.



### ■ Minimum inhibitory concentration (MIC)

Strains	Minimum inhibitory concentration (MIC)
Escherichia coli	250
Pseudomonas aeruginosa	250
Staphylococcus aureus	7.8
Streptococcus mutans	3.9
Propionibacterium acnes	31.3
Candida albicans	250
Aspergillus niger	500
Trichophyton rubrum	62.5

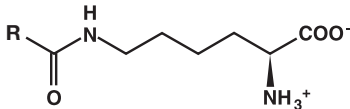
CAE : 1% Solution (μg/mL)

# Functional Powder



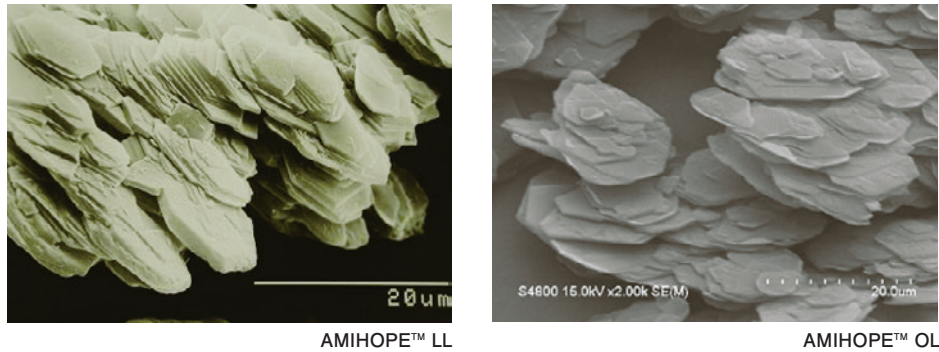
## AMIHOPE™ LL/OL Functional Powder

AMIHOPE™ is an amino-acid derivative made from L-Lysine and a palm fatty acid. Being barely soluble either in water or organic solvents, it can be used as a powdery texture modifier for various cosmetic applications. As a small molecular organic material based on fatty acid, it imparts a soft and silky feel to the skin as well as excellent emolliency, and also can relieve drying feel of inorganic powders. The particles have flat and hexagonal shape, resulting in excellent adherence to skin which provides long wearing properties.



R=C11H23: AMIHOPE™ LL  
R=C7H15: AMIHOPE™ OL  
PCPC INCI name: Lauroyl Lysine  
N-Capryloyl Lysine

### ■ AMIHOPE™ Crystal by SEM



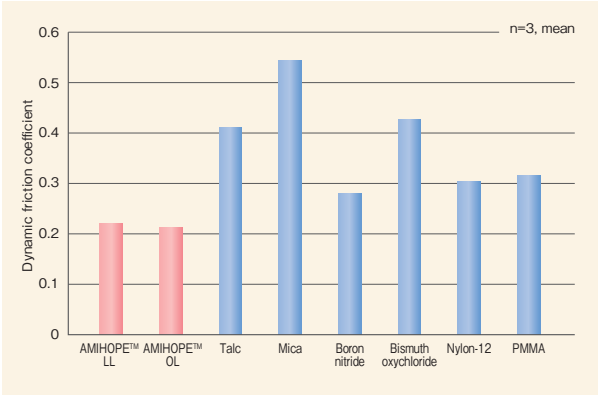
### ■ Physicochemical Properties

Mean particle size	20-30 μm
Refractive index	AMIHOPE™ LL 1.54 ~ 1.55, AMIHOPE™ OL 1.55
Thermal stability	decomposition temperature over 200℃
Solubility	insoluble in any solvents other than strongly alkaline or acid solution

### ■ High Lubricity

The dynamic friction coefficient of AMIHOPE™ LL / OL is extremely low compared with other powders and it possesses an excellent lubricity.

#### Kinematic friction coefficient of powders



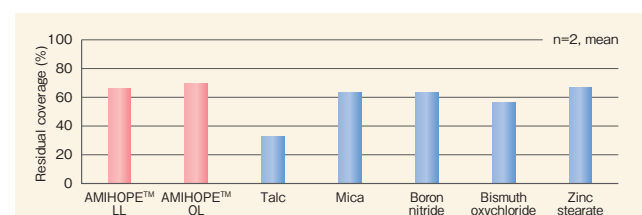
Test Method : A piece of artificial leather (Idemitsu Technofine) was attached on a glass slide and powder was applied. Another piece was attached on to the sensor tip of Friction Tester TL201Ts (Trinity-Lab) and friction was measured. New leathers were used every time for the measurement.



## Adhesion to Skin

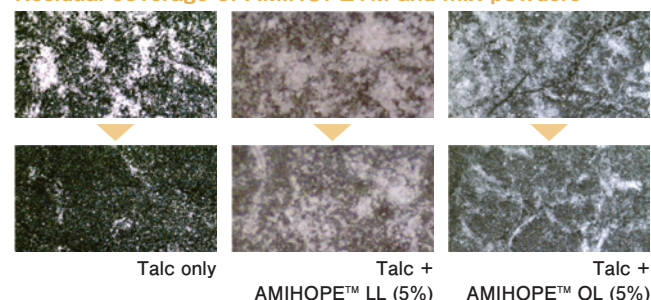
Residual coverage of AMIHOPE™ LL / OL after tape stripping is high compared with other powders and it possesses a high adhesion to skin.

Moreover, it can cover the surface of other powders and increase adhesion to skin.



Test Method : Powder 2mg was applied on to artificial leather (Idemitsu Technofine), 1cm square, and the surface was observed by a microscope (YDU-3F, YASHIMA OPTICAL CO.,LTD.)

## Residual coverage of AMIHOPE™ and mix powders



## AMIHOPE™ in Pressed Powder Foundation

AMIHOPE™ is ideal as a texturizer for pressed powder foundation, apart from excellent lubricity and adhesion to the skin, they also improve resistance to drop test.

- AMIHOPE™ LL imparts rich creamy texture during spreading and outstanding moisturized skin after feel as well.
- AMIHOPE™ OL imparts light, smooth touch during spreading, and good balance of moisturizing and silky feel is obtained afterwards.

## Visual Observation using VISIA™

AMIHOPE™ LL in powdery foundation conceals pores and improves the skin texture.

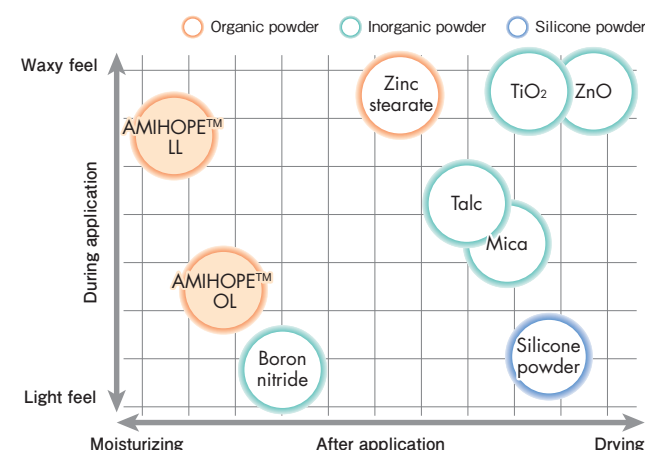
Composition	Control (wt.%)	PFD-18 (wt.%)
AMIHOPE™ LL	-	2.0
Talc (and) Dimethicone/Methicone Copolymer	20.4	18.4
Mica (and) Dimethicone/Methicone Copolymer	52.0	52.0
Pigments and the other powders	16.6	16.6
Emollients	11.0	11.0
	100.0	100.0

Procedure : The foundation was applied to the face and numbers of the flaw were determined by VISIA II (Canfield Scientific).

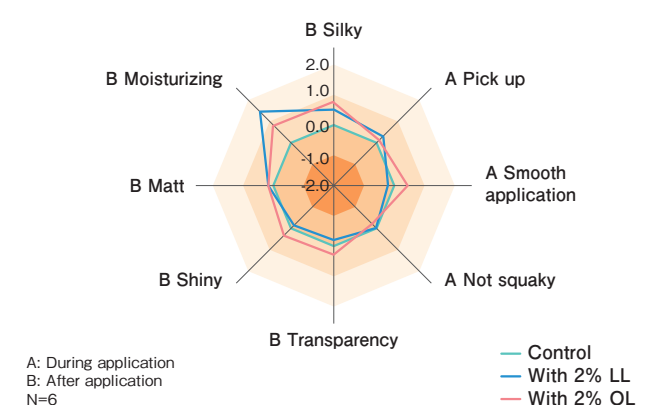
## Excellent Skin Feel

AMIHOPE™ imparts moisturized feel to the skin after application. During application, AMIHOPE™ OL provides light feel whereas AMIHOPE™ LL provides waxy feel.

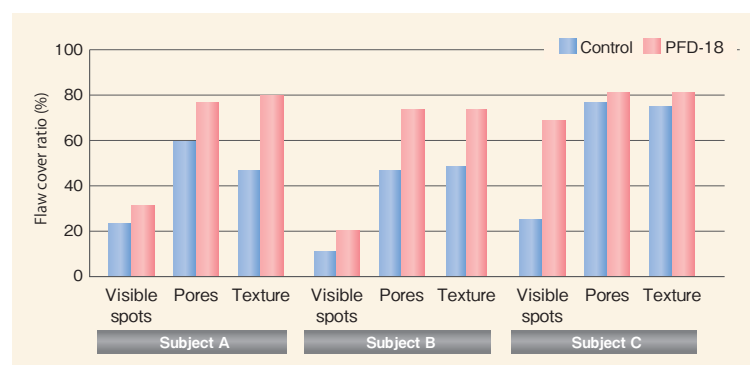
## Sensory Map of Cosmetic Powders



## Sensory Evaluation



Procedure : Pressed powder formulations were evaluated on either back of the hands or the inner side of the forearms in order to be graded on a scale of -2 ~ 2 in comparison with the control formulation.(N=6)

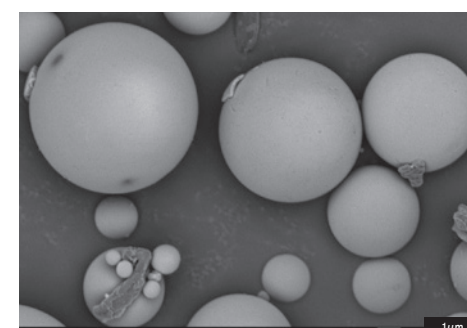


## AMIHOPE™ SB series

AMIHOPE™ SB series are round shaped powders based on nature-derived ingredients. They excel in biodegradability and have better sensory feeling and soft-focus property than the existing natural powders. They can offer a better balance of stability and usability in pressed type formulation and can improve the color difference of color cosmetics products before and after application on skin. AMIHOPE™ SB series can be used both in hot or cold process.

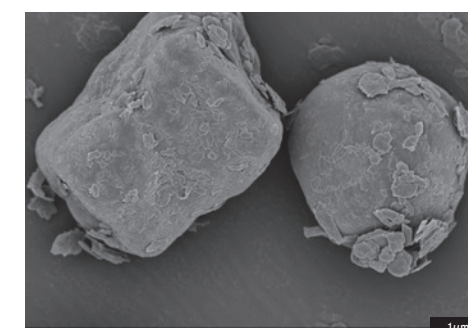
AMIHOPE™ SB-101 is a round shaped powder and provides excellent smooth, even application whereas AMIHOPE™ SB-102 provides moist and silky sensory feeling.

## Structure/Component



PCPC INCI Name:  
Silica, Microcrystalline  
Cellulose, Lauroyl Lysine

AMIHOPE™ SB-101



PCPC INCI Name:  
Zea Mays (Corn) Starch,  
Lauroyl Lysine,  
Microcrystalline  
Cellulose

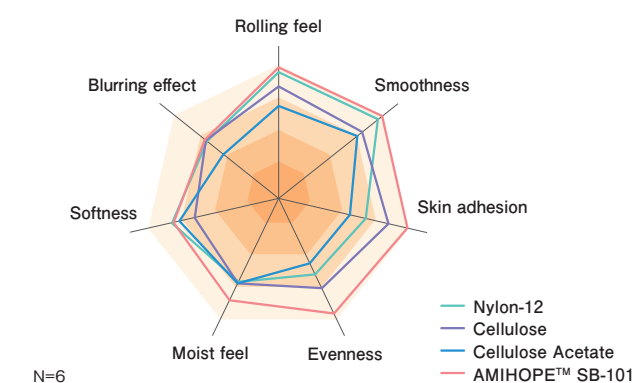
AMIHOPE™ SB-102

## Physicochemical Properties

Intercellular Lipid Model	AMIHOPE™ SB-101	AMIHOPE™ SB-102
Oil absorption	80 g/100 g	25 g/100 g
Mean particle size	5 μm	15 to 16 μm
Solubility	Insoluble in water or oils. Water repelling property.	Insoluble in water or oils. Water repelling property.
Thermal stability	Stable below 200°C	Stable below 200°C
ISO 16128 natural origin index	1	1
Biodegradability	More than 73% (OECD TG301F, after 28days)	More than 67% (OECD TG301F, after 28 days)

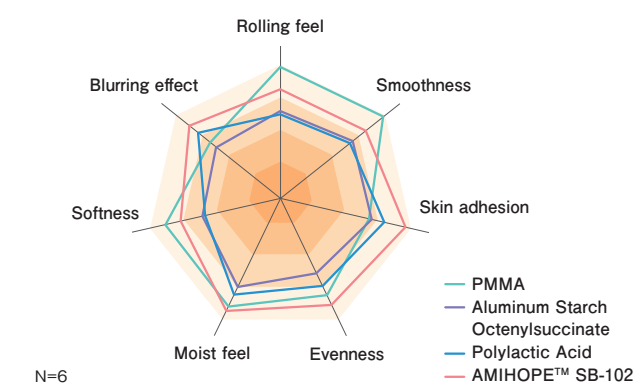
## Sensory Evaluation of AMIHOPE™ SB Series

AMIHOPE™ SB-101 provides better sensory feelings compared to existing natural spherical powders.



N=6

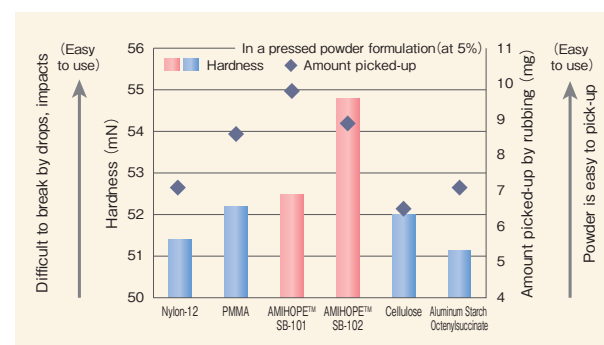
AMIHOPE™ SB-102 provides better sensory feelings compared to existing PMMA-alternative powders.



N=6

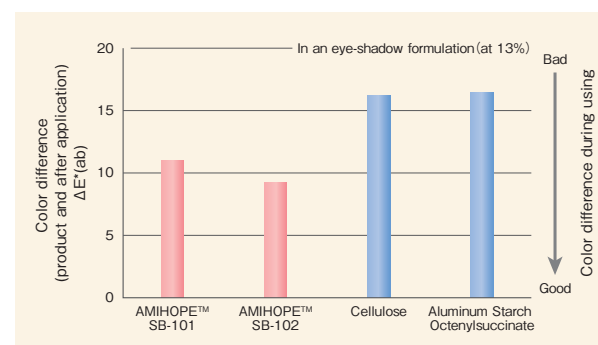
## ■ AMIHOPE™ SB Series Offer Balance in Pressed Formulations Series

AMIHOPE™ SB series provide stronger binding in pressed formulations while providing easy picking-up ability during using.



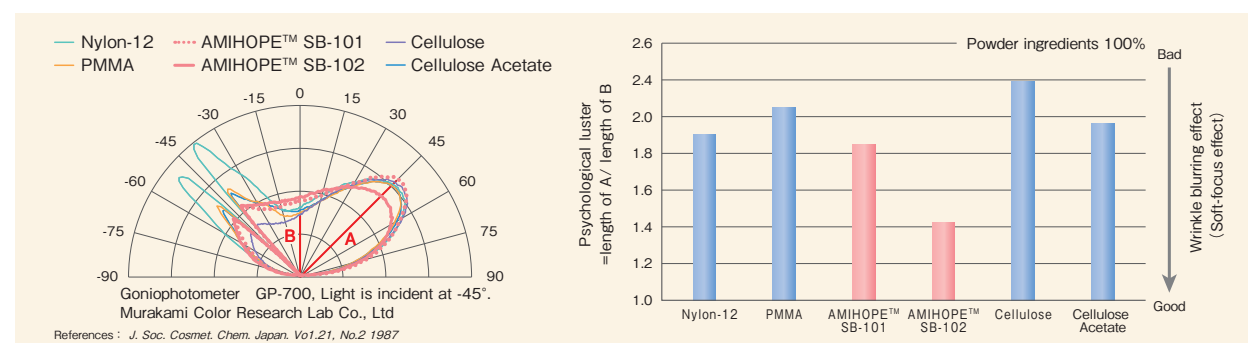
## ■ AMIHOPE™ SB Series Help Good Coloration

AMIHOPE™ SB series help to mitigate the color difference between the color of the product and color after application on skin.



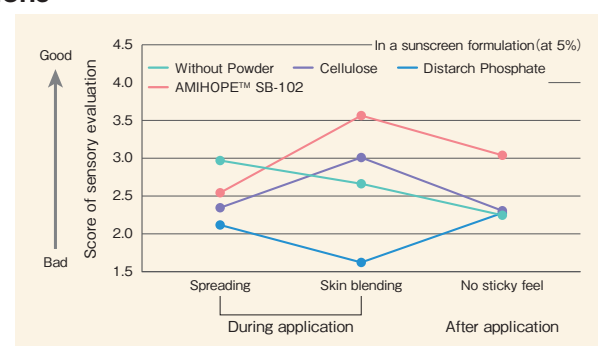
## ■ Soft-focus Evaluation of AMIHOPE™ SB Series

AMIHOPE™ SB series have excellent soft-focus compared to existing spherical powders.



## ■ AMIHOPE™ SB Series in Emulsion Formulations

AMIHOPE™ SB series can improve the skin blending and reduce tackiness of oil rich formulations such as sunscreen lotions.



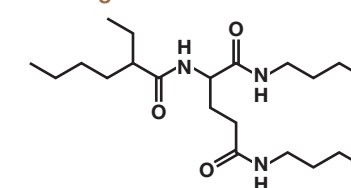
# Gelatinization Agent



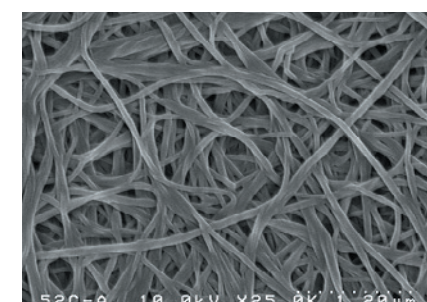
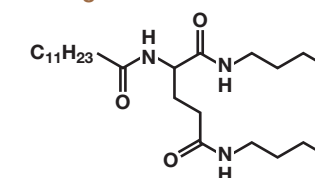
## Gelatinization Agent EB-21 • GP-1

Gelatinization Agent EB-21 and GP-1 are derived from an amino acid L-Glutamic acid and are highly effective small molecular oil gelators. After being dissolved in oils, they form a fiber network of microscopic size upon cooling, which traps oils to turn the liquids into "solid oils" of unique texture. Due to the fact that only 0.5-5% of the agents are required to form oil gels and that size of the fiber structure is very small, EB-21 and GP-1 virtually do not change sensory aspects of the original oils.

### Gelatinization Agent EB-21



### Gelatinization Agent GP-1



\* EB-21 1wt.%  
Mineral Oil 99wt. %

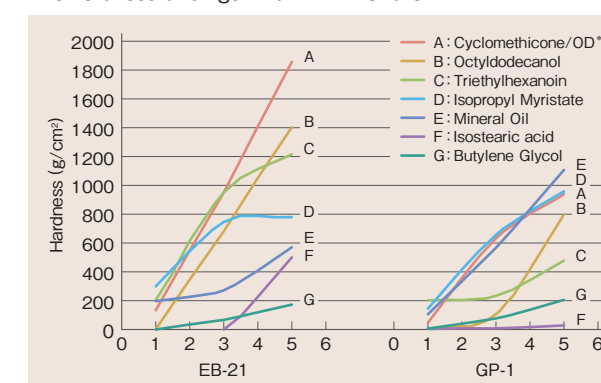
Fiber network of Oil Gel. (SEM)



EB-21 2wt.%,  
GP-1 2wt.%,  
Cyclomethicone 60wt.%,  
Mineral Oil 21wt.%,  
Octyldodecanol 15wt. %

## ■ Gel Hardness

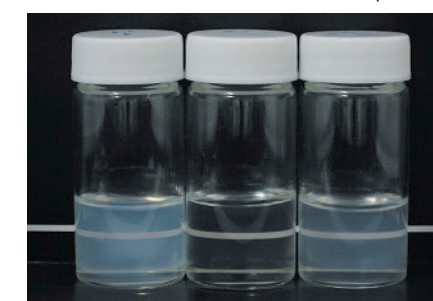
The hardness of oil gel with EB-21 and GP-1



\* 1 Cyclomethicone/Octyldodecanol=80/20 (wt./wt.)  
Hardness : Pudding 40g/cm², Shea oil : 1000g/cm²

## ■ Transparent Oil Gel with EB-21 and GP-1 mixture

EB-21 and GP-1 can make the transparent oil gel.



EB-21 EB-21/GP-1=1/1 GP-1

Total concentration of  
Gelatinization Agent  
1wt. %  
Oil : Mineral Oil



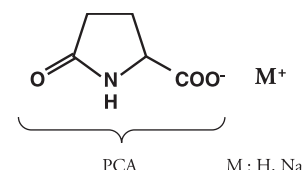
# Humectants

Ajinomoto Co.'s humectants grew out of research into the skin's natural moisturizing factors (NMFs). These products protect the skin from dryness, moisturize, promote elasticity and help keep skin healthy and fresh-looking. Ranging from amino acids to polymers, each with its own particular characteristics. As a result, the most suitable product can be selected to meet the usage demands of a wide range of skincare and hair care products.



## AJIDEW™ NL-50, NL-50N, A-100

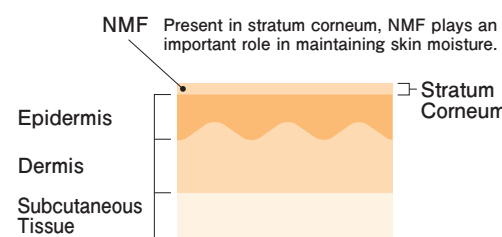
Sodium PCA (Sodium Pyrrolidonecarboxylate) is a natural humectant derived from L-Glutamic acid. Known to be abundant in human skin as a component of NMF (Natural Moisturizing Factor). This humectant helps keep skin and hair looking fresh.



### Composition of NMF

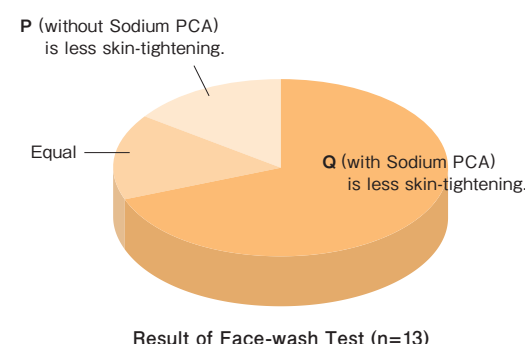
Amino Acids	42%
PCA	12%
Lactic Acid	11%
Urea	7%
Others	28%

\* H.W.Spier, G.Pascher *Der Hautarzt*. Vol.7, 55-60 (1956)



### An efficacy on skin

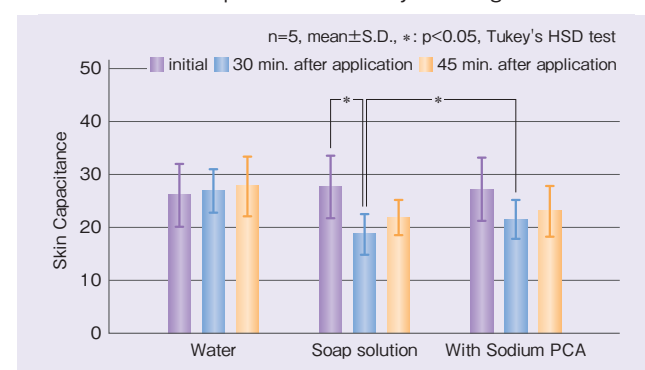
Sodium PCA reduces skin tightness caused by a soap-base cleansing formula.



TS data 1001-0831E

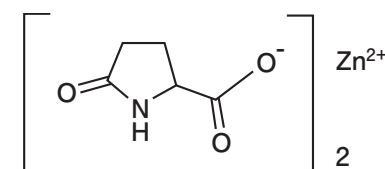
### Effects of Sodium PCA in a Cleansing Formulation

Sodium PCA incorporated into a soap-base formulation suppresses reduction of the skin capacitance caused by cleansing.



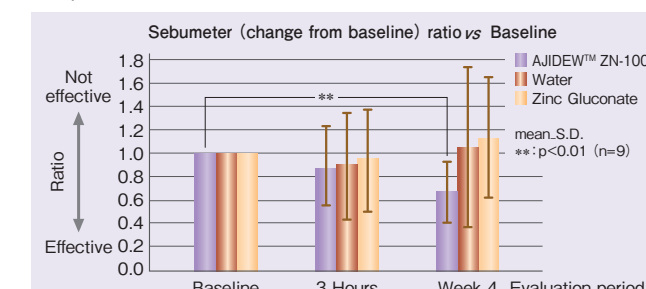
## AJIDEW™ ZN-100, ZN-100N

AJIDEW™ ZN-100, Zinc salt of L-Pyrrolidonecarboxylate (Zinc PCA), is part of Ajinomoto Co.'s line of nature-based functional ingredients. With the combination of zinc and NMF, it suppresses excess sebum secretion, leaving skin feeling clean and refreshed. AJIDEW™ ZN-100 is ideal for the wide range of health and beauty products.



### Freshness to Skin

1wt.% AJIDEW™ ZN-100 solution exhibits a statistically significant decrease in sebum levels on the treated skin at week 4 compared to baseline.



## PRODEW™ 500

PRODEW™ 500 is the amino acid blend, developed to achieve a new technology for hair care. Unlike the case of the skin, the presence and the role of naturally occurring free amino acids in hair are not well known, but amino acids applied externally are known to interact with the hair to produce various cosmetic effects, such as moisturizing, strengthening structure, color-protect on the repair of surface damage. The amino acid component in PRODEW™ 500 is modeled after the constituent amino acids of protein existing in CMC (Cell Membrane Complex).

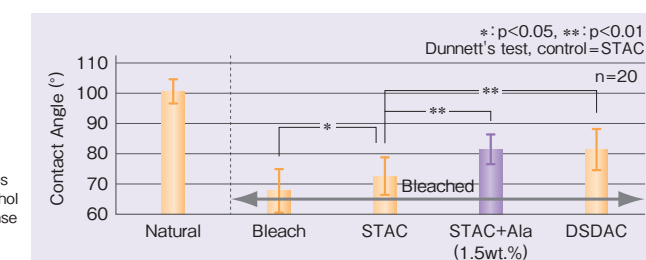
### Damage Care by Various Amino Acids

Alanine in a hair conditioner increases hair surface hydrophobicity. Hair surface hydrophobicity is an index of hair damage from hair dye.

Method: Japanese hair, bleached 4 times  
Cationic surfactant 0.6wt.%, Cetyl alcohol 3.0wt.%, 30sec. application, / 30sec. rinse  
STAC: Steartrimonium Chloride  
DSDAC: Distearylidimonium Chloride

Components	Concentration	Effects
Sodium PCA	20%	Moisturizing, Conditioning, Improvement of Color Retention
Arginine	7%	Moisturizing, Conditioning, Improvement of PCA adsorption
Amino Acids Mix	7%	Damage Care
Sodium Lactate	12%	Moisturizing
Aspartic Acid	4%	pH adjustment
Water	50%	

\* The Composition of Amino Acids Mix  
The composition of "Amino Acids Mix" is modeled after the constituent amino acids of protein in Cell Membrane Complex (CMC)

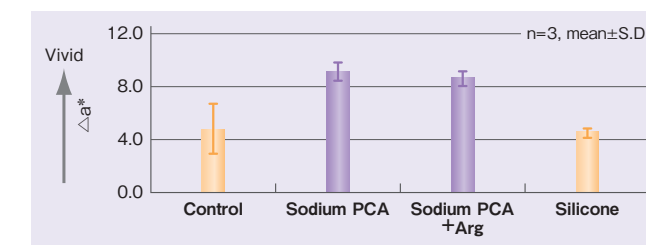
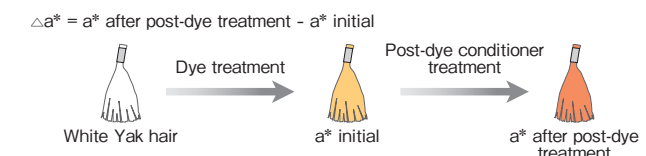


### Effects of Sodium PCA for Oxidative Color

Color development of red semi permanent hair dye was improved by post-dye treatment with a hair conditioner containing Sodium PCA.

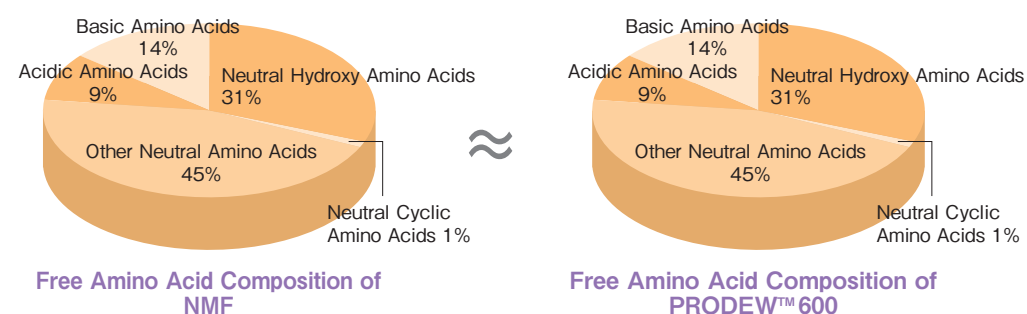
Test Formulation: Hair Conditioners	Control	Sodium PCA	Sodium PCA +Arg	Silicone
Cetrimonium Chloride	2.5	2.5	2.5	2.5
(active)	0.5	0.5	0.5	0.5
Ceteareth-20	4.0	4.0	4.0	4.0
Cetyl alcohol	-	2.0	1.0	-
Sodium PCA	-	-	0.4	-
Arginine	-	-	-	2.0
Amodimethicone. emulsion*	0.2	0.2	0.2	0.2
Methylpraben	pH3.0	pH3.0	pH3.0	pH3.0
Citric acid	balance	balance	balance	balance
Total	100.0	100.0	100.0	100.0

\* Dow Corning 2-8177 Emulsion



## PRODEW™ 600

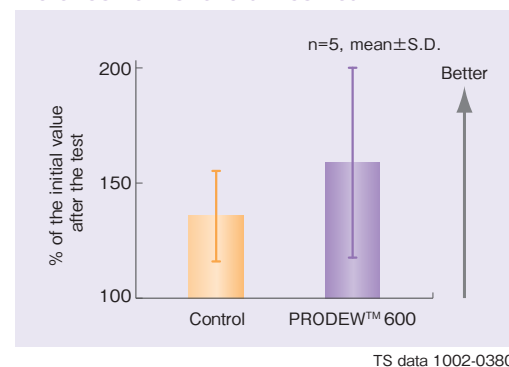
PRODEW™ 600 is a highly effective moisturizer formulated with NMF (Natural Moisturizing Factor) components. The amino acid composition of PRODEW™ 600 is almost the same as the amino acid composition in NMF. PRODEW™ 600 gives the moisturizing effect to the skin by supplying amino acids to the stratum corneum. In addition, since preservatives, such as Parabens, are not used, it is possible to formulate PRODEW™ 600 into personal care products with preservative-free concept.



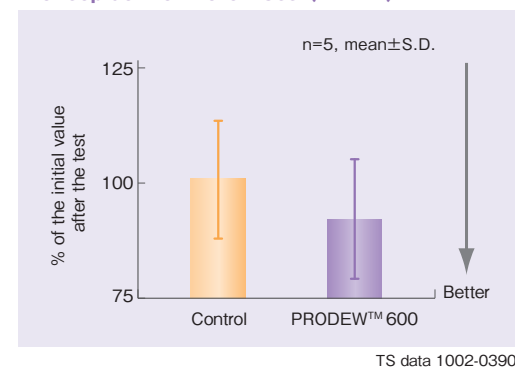
## Improvement of Skin Condition ; Long-term test (Cheeks)

Skin capacitance and skin barrier function are improved by a skin toner and a skin cream including PRODEW™ 600.

### Water content of stratum corneum



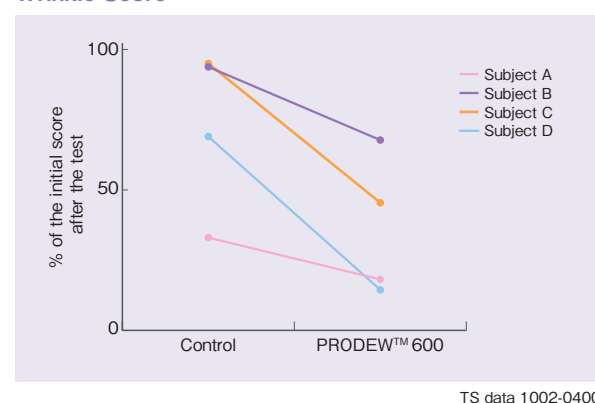
### Transepidermal water loss (TEWL)



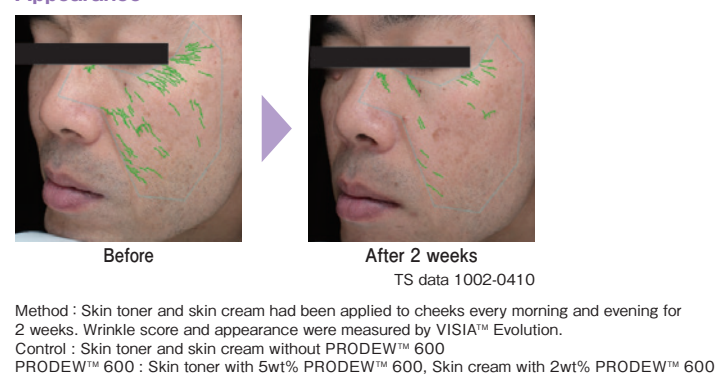
## Anti-wrinkle effect ; Long-term test (Cheeks)

Fine wrinkles are decreased by a skin toner and a skin cream including PRODEW™ 600.

### Wrinkle Score



### Appearance

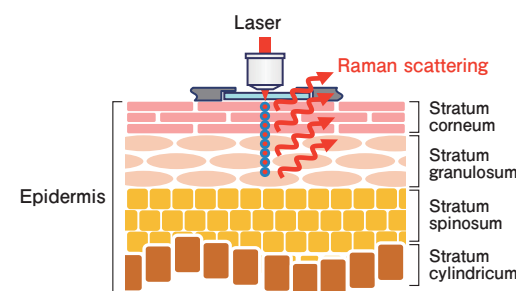


## Penetration into stratum corneum

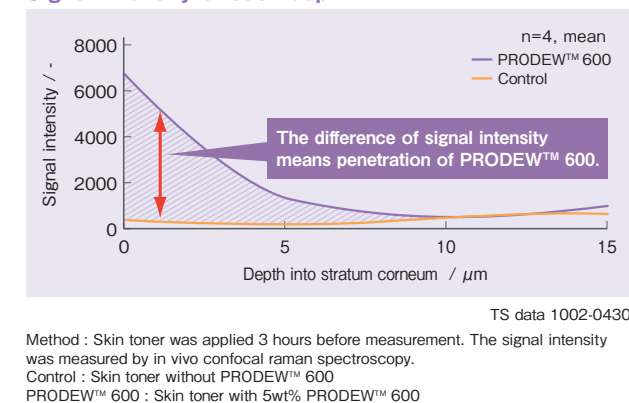
Raman peak derived from PRODEW™ 600 is detected from the skin surface to the depth of the stratum corneum around 10 μm.

### Figure of confocal raman spectroscopy

Since Raman scattered light of the target component can be measured at each depth of the skin by in vivo confocal Raman spectroscopy, it is possible to evaluate the skin penetration of applied substances.



### Signal intensity of each depth

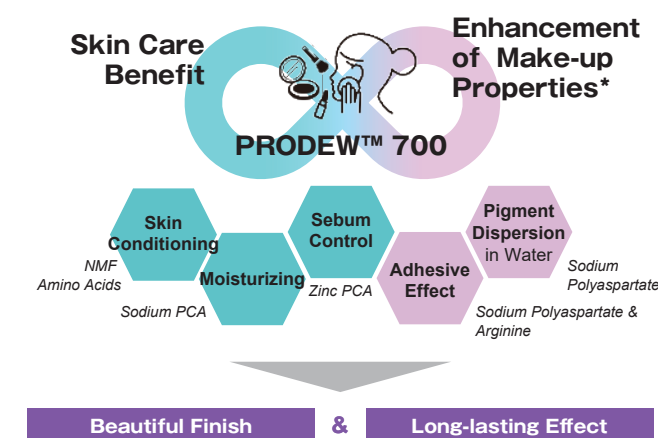


## PRODEW™ 700

PRODEW™ 700, an amino acid derivatives blend, is highly effective for skin conditioning and enhancement of make-up properties\*, designed for improving the beautiful finish and long-lasting effect of facial make-up products. The combination of skin care benefit (incl. skin conditioning effect, moisturizing effect, sebum control effect) and enhancement of make-up properties (film adhesion effect and pigment dispersion in water) can significantly help accomplish a beautiful finish and long-lasting effect for facial make-up products. PRODEW™ 700 contains the amino acid of NMF (Natural Moisturizing Factor) and no preservative, which is a good choice for products claiming for "Skin-Caring Make-up", "Paraben-Free", and so on.

\*Physical effects such as covering, hiding, and obscuring by color etc.

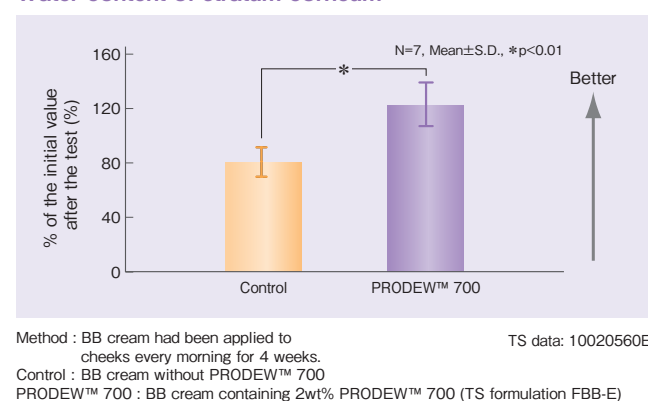
## Product design



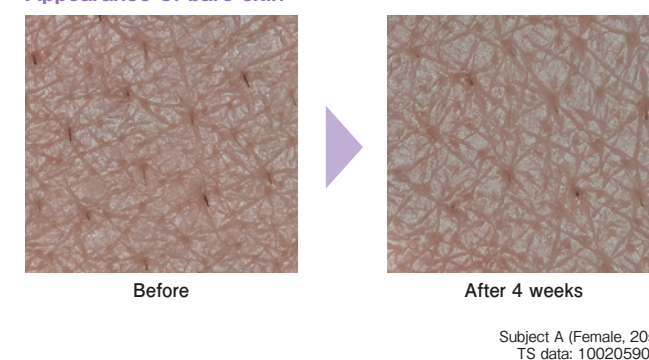
## Skin conditioning during make-up

Skin capacitance and the texture are improved by a facial make-up product with PRODEW™ 700.

### Water content of stratum corneum



### Appearance of bare skin

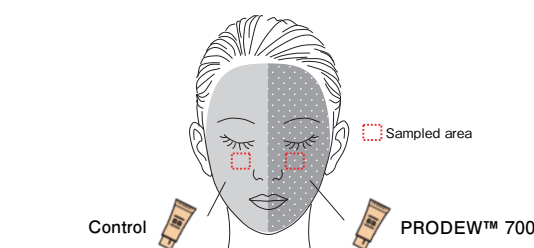




## Improving make-up appearance

Long-term use of make-up containing PRODEW™ 700 improves make-up film's adhesion, evenness, and coverage, then achieves beautiful finish look of make-up.

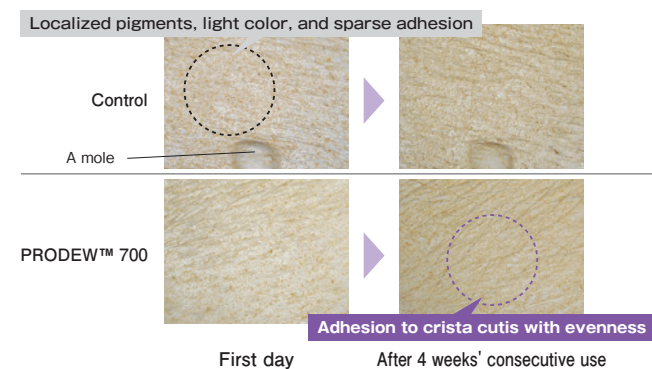
### Observation of make-up film right after applying



Method : BB cream had been applied to cheeks every morning for 4 weeks. A make-up film of a part under the eye was sampled with silicone replica and observed by microscope.

Control : BB cream without PRODEW™ 700

PRODEW™ 700 : BB cream containing 2wt% PRODEW™ 700 (TS formulation FBB-E)

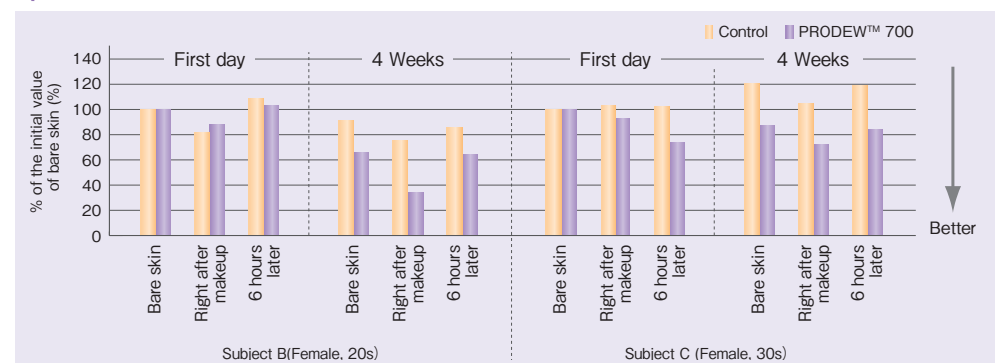


Subject E (Female, 40s) TS data: 10020620E

## Improving long-lasting effect of make-up

PRODEW™ 700 in a facial make-up product gives resistance to make-up smudge to skin, and makes the make-up look beautiful and last overtime. After long-term use of a facial make-up product containing PRODEW™ 700, the spots score decreased right after applying and 6 hours later, too.

### Spots score



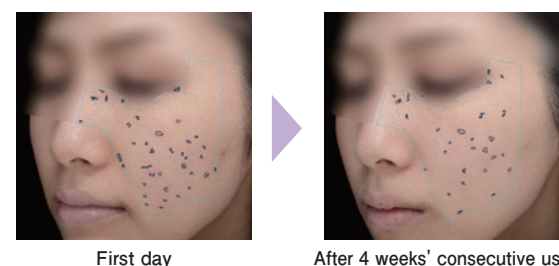
Method : BB cream had been applied to cheeks every morning for 4 weeks. Spots score and appearance were obtained VISIA Evolution.

Control: BB cream without PRODEW™ 700

PRODEW™ 700: BB cream containing 2wt% PRODEW™ 700 (TS formulation FBB-E)

TS data: 10020650E

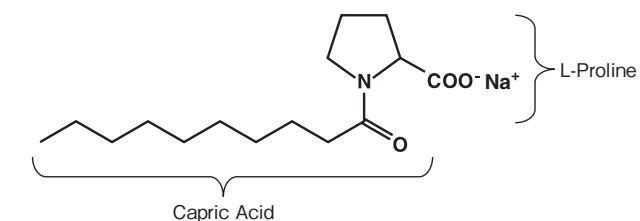
### Appearance 6 hours after applying BB cream with PRODEW™ 700



Subject B (Female, 20s)  
TS data: 10020640E

## PRODEW™ P-DS-12

PRODEW™ P-DS-12 is an amino acid based humectant derived from L-Proline and fatty acid. It has a good moisturizing effect and can work as a booster for antimicrobials.



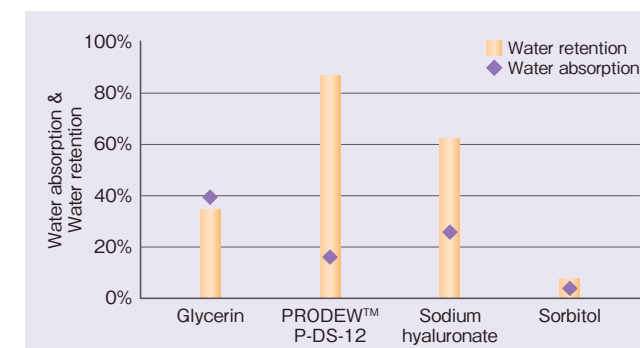
### Hygroscopicity

PRODEW™ P-DS-12 has a good moisturizing property. PRODEW™ P-DS-12 exhibits good water retention property in comparison with sodium hyaluronate and sorbitol.

Test method

Water absorption : a dried material was kept at 25°C , 65%RH for 14 days and weight increase (A) was measured.

Water retention : following the water absorption measurement the material was kept at 25°C , 35%RH for 14 days and weight change from the original dry status (B) was measured. Water retention was determined as B/A x 100 (%).

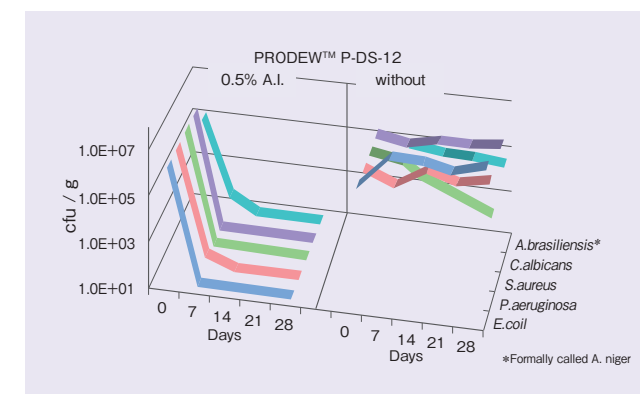


### Challenge test

In the skin toner formulation NTON-CP-2, combination of PRODEW™ P-DS-12 and alcohol is effective against the 5 strains.

	(wt%)	(wt%)
SODIUM HYALURONATE	0.10	0.10
WATER	balance	balance
SORBITOL	5.00	5.00
AJIDEW™ NL-50 (50%)	3.00	3.00
GLYCERIN	5.00	5.00
ALCOHOL	2.00	2.00
PRODEW™ P-DS-12 (30%)	1.67	-
SODIUM CITRATE	0.20	0.20
CITRIC ACID	pH 5.5	pH 5.5
	100.00	100.00

Test method : TS Formulation No. NTON-CP-2; please refer to TS Formulation sheet for detail



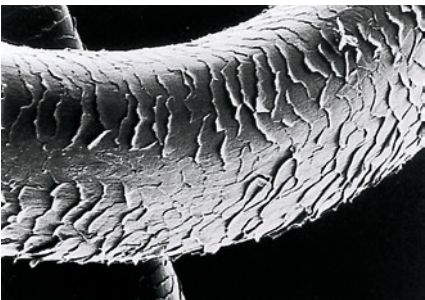
Preservation by 2.0% alcohol was not efficient, however, addition of 0.5%A.I. PRODEW™ P-DS-12 boosted the preservative efficacy.

AQUADEW™ SPA-30B

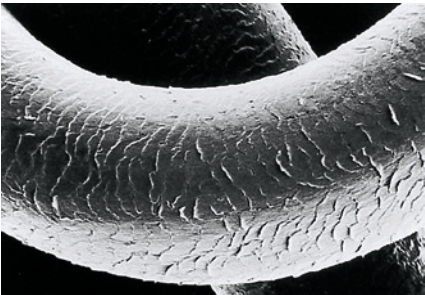
AQUADEW™ SPA-30B is an anionic polymeric humectant derived from Aspartic acid. It is superior to other humectants in its hygroscopic properties as well as its moisturizing efficacy, AQUADEW™ SPA-30B affinity for skin is so strong, it can actually be felt. AQUADEW™ SPA-30B leaves skin feeling moist, smooth to the touch and completely unsticky. It also moisturizes hair and increases manageability, AQUADEW™ SPA-30B protects cuticles and helps prevent hair breakage and splitting.

Hair Protection Effect of AQUADEW™ SPA-30B

AQUADEW™ SPA-30B protects cuticles and helps reduce hair breakage and splitting.

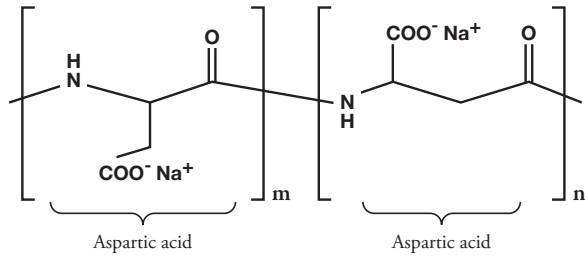


Without treatment



Treated with 1 wt.%A.I., AQUADEW™ SPA-30®

Treatment procedure : Hair was treated with 1 wt.%A.I. at 40°C for two minutes, dried at 25°C 40% RH, then bent and observed.



Efficacy of AQUADEW™ SPA-30B for Manageability

AQUADEW™ SPA-30B prevents hair fly.



After washing hair with LES (weather : rainy)



After treatment with 0.5 wt.%A.I. of AQUADEW™ SPA-30® (weather : rainy)

※AQUADEW™ SPA-30 is the predecessor of AQUADEW™ SPA-30B and consists of 30% sodium polyaspartate and 70% water.

Emollients

Ajinomoto Co.'s emollients arose out of research into amino acids and the mechanisms of skin moisturization. In healthy skin, an appropriate moisture balance is maintained by NMF, a hydrophilic component, and intercellular lipids or lipophilic components in the horny layer. These two components work according to two different moisturizing mechanisms. Intercellular lipids form lamella liquid crystals with a two-molecular membrane to function as a barrier, maintaining moisture and preventing invasion of foreign bodies from the outside.

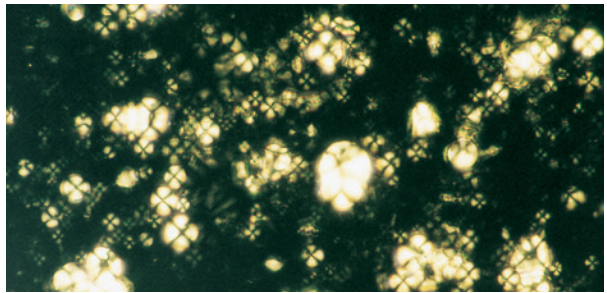
Many scientists believe that Cell Membrane Complex (CMC) – a substance found between the cortical cells in the inter-cuticle cortex – also plays an important role in conditioning and maintaining healthy hair.

At Ajinomoto Co., we designed a new series of amino acid emollients based on intercellular lipid model of skin and Cell Membrane Complex (CMC) of hair. We call it ELDEW™.

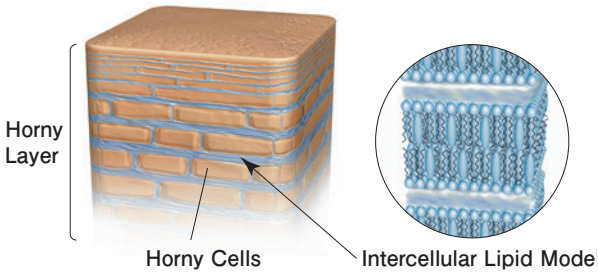
ELDEW™ PS Series, CL Series

The ELDEW™s are emollient derived from L-Glutamic acid, natural fatty acid, higher alcohol and phytosterol or cholesterol. Our research has confirmed that ELDEW™ forms lamella liquid crystals identical to ceramide. As a result, ELDEW™, a ceramide-like amino acid derivative, yields emollient efficacy comparable to that of a ceramide.

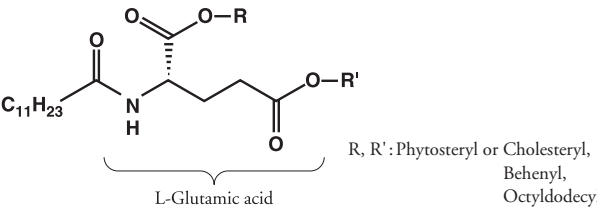
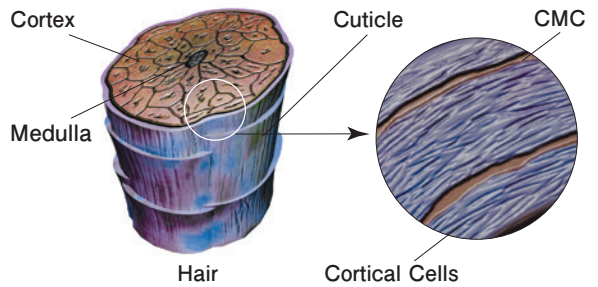
Polarization Microscope Image of a Model of Intercellular Lipids Combined with ELDEW™



Schematic of Intercellular Lipid Model



Schematic of Hair Cell Membrane Complex (CMC)



Components

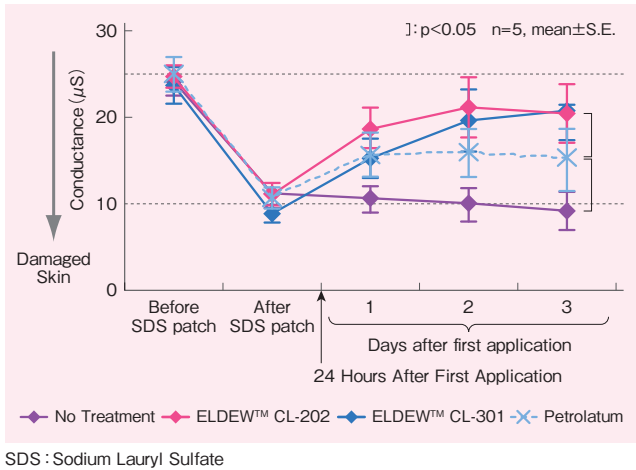
Intercellular Lipid Model	wt.%A.I.
ELDEW™ PS-203	18
Squalene	7
Triolein	25
Cholesterol Sulfate	2
Cholesterol	14
Phosphatidylethanolamine	5
Pristane	4
Fatty Acid Mixture	25



## Skin and ELDEW™

### Rough-skin Recovery Efficacy of ELDEW™

Because of its high affinity for the skin, ELDEW™ starts to moisturize effectively as soon as it is applied. Further, this efficacy persists over long periods of time. Applied to SDS-induced rough skin, ELDEW™ helps skin recover its ability to retain moisture, thus improving rough skin conditions.

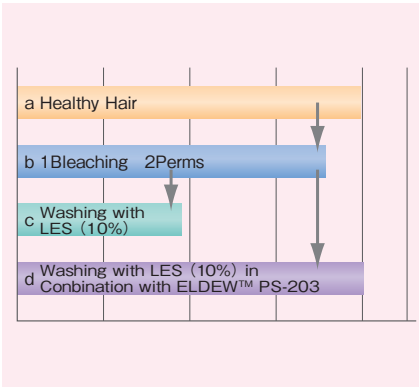


## Hair and ELDEW™

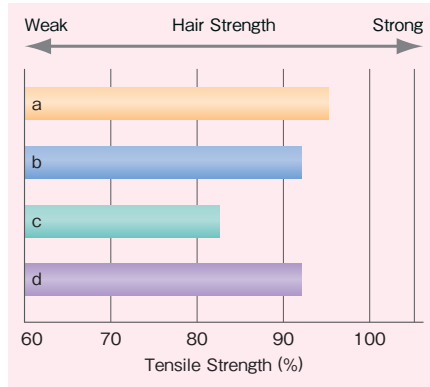
### Efficacy of ELDEW™ for Improving Hair Strength (Tensile Strength)

Working as a CMC-like substance, ELDEW™ conditions and maintains healthy hair as well as helping to repair hair that has been damaged due to coloring or perming.

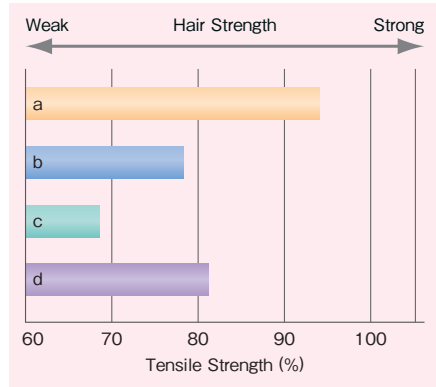
#### Processing Image



#### 1: Bleaching



#### 2: Perm



## Applications

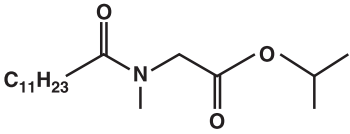
ELDEW™ offers a wide variety of cosmetic applications. Its emollient efficacy makes it suitable for skincare products such as emulsions and essences, while its conditioner efficacy makes it a candidate for hair care products such as rinses and treatments. In addition, the high pigment

dispersibility of ELDEW™ results in applications that include makeup products such as foundations and lipsticks. ELDEW™ improves the “feel” of a wide range of products.

ELDEW™ is a product co-developed with Nippon Emulsion Co., Ltd.

## ELDEW™ SL-205

ELDEW™ SL-205 is a new, highly polar emollient derived from amino acids and based on our proprietary amino acid technology. Possessing the ability to readily dissolve challenging substances, such as organic UV filters and active ingredients, ELDEW™ SL-205 delivers a soft but not oily feeling. All these properties combine to give formulators greater flexibility in developing new types of formula and product.



### Dissolving Property I

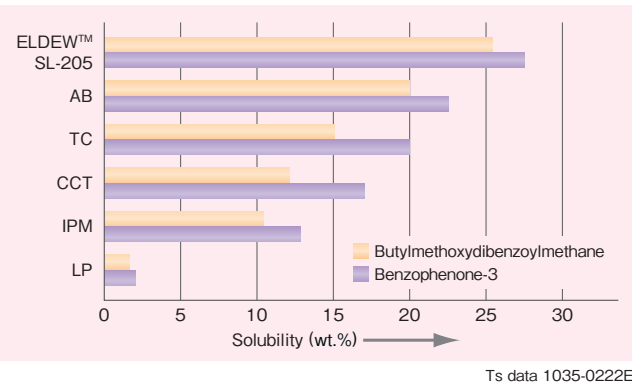
ELDEW™ SL-205 can dissolve low-solubility ceramide, etc.

	Ceramide (mixture)			$\gamma$ -Orizanol			Cholesterol		
	0.05 %	0.10 %	0.15 %	2.0 %	5.0 %	10.0 %	2.0 %	5.0 %	10.0 %
ELDEW™ SL-205	S	S	S	S	S	S	S	S	S
CCT	I	I	I	S	S	I	S	I	I
IPM	I	I	I	S	I	I	S	I	I
LP	I	I	I	I	I	I	I	I	I

CCT : Caprylic/Capric Acid Triglyceride, IPM : Isopropyl Myristate, LP : Liquid Paraffin  
Ceramide,  $\gamma$ -Orizanol and Cholesterol were solubilized at 80-90°C, then each solution was stood for 3 days at 5°C. Solubility was observed visually.  
(S : Soluble I : Insoluble)

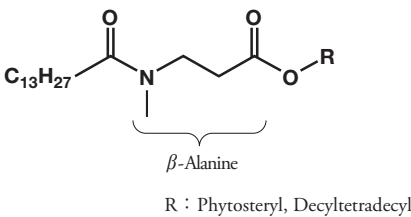
### Dissolving Property II

ELDEW™ SL-205 can dissolve low-solubility organic UV filters.



## ELDEW™ APS-307

Ajinomoto Co. has been researching and developing cosmetic ingredients using our extensive knowledge of amino acids and skin science. Ajinomoto Co. first developed the ELDEW™ CL series and the PS series which are efficacious emollients, derived from L-Glutamic acid and sterols. We then developed ELDEW™ APS-307 light, waxy emollient derived from  $\beta$ -Alanine and phytosterol. It has an excellent moisturizing skin feel without stickiness.



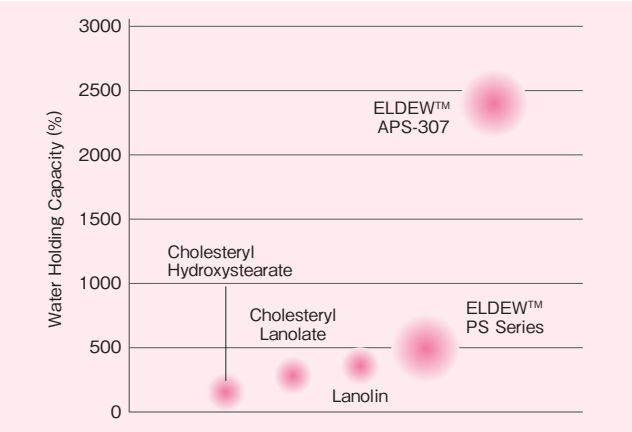
### Water-holding capacity

ELDEW™ APS-307 has a significant water-holding capacity giving it excellent moisturizing properties and making it suitable for a variety of cosmetic applications.

ELDEW™ APS-307 after mixing with water.



Method : Water was gradually mixed into 10g of the sample until homogeneous. Sample was left overnight at room temperature and then excess water was eliminated. The amount of water in the 10g sample was measured.



Amino Acid-Based Ingredients for Personal Care

■ Anionic Surfactant

Product Name	Product Code	Chemical Name	CAS No.	Physical Form	Packaging	PCPC INCI Name	Composition (%)
AMISOFT™	CT-12 CT-12S	Triethanolamine N-Cocoyl-L-Glutamate, Water	68187-29-1	30% Aqueous Solution	18kg Can 200kg Drum	TEA-Cocoyl Glutamate	30.0
						Water	70.0
	CS-22	Sodium N-Cocoyl-L-Glutamate, Water	68187-30-4 (Disodium)	25% Aqueous Solution	18kg Can 200kg Drum 1t Container	Disodium Cocoyl Glutamate	20.0
			68187-32-6 (Sodium)			Sodium Cocoyl Glutamate	5.0
	ECS-22SB	Sodium N-Cocoyl-L-Glutamate, Water	68187-30-4	30% Aqueous Solution	25kg Drum 220kg Drum	Disodium Cocoyl Glutamate	30.0
						Water	70.0
	ECS-22W	Sodium N-Cocoyl-L-Glutamate, Water	68187-30-4	30% Aqueous Solution	25kg Drum 220kg Drum	Disodium Cocoyl Glutamate	30.0
						Water	70.0
	CS-11 CS-11 (F)	Sodium N-Cocoyl-L-Glutamate	68187-32-6	Powder, Flake	15kg Carton	Sodium Cocoyl Glutamate	100.0
	LS-11 LS-11 (F)	Sodium N-Lauroyl-L-Glutamate	29923-31-7 42926-22-7	Powder, Flake	15kg Carton	Sodium Lauroyl Glutamate	100.0
	MS-11 MS-11 (F)	Sodium N-Myristoyl-L-Glutamate	38517-37-2 71368-20-2	Powder, Flake	15kg Carton	Sodium Myristoyl Glutamate	100.0
	GS-11P	Sodium N-Acyl-L-Glutamate	38517-23-6 (Stearoyl) 68187-32-6 (Cocoyl)	Powder	15kg Carton	Sodium Stearoyl Glutamate, Sodium Cocoyl Glutamate	100.0
HS-11P HS-11P (F)	Sodium N-Stearoyl-L-Glutamate	38517-23-6	Powder, Flake			15kg Carton	
AMILITE™	ACS-12	Sodium N-Cocoyl-L-Alaninate, Water	90170-45-9	30% Aqueous Solution	18kg Can 200kg Drum 1t Container	Sodium Cocoyl Alaninate	30.0
						Water	70.0
	GCK-12K	Potassium N-Cocoyl Glycinate, Water	301341-58-2	30% Aqueous Solution	18kg Can 200kg Drum	Potassium Cocoyl Glycinate	30.0
						Water	70.0
	GCK-12H	Potassium N-Cocoyl Glycinate, Potassium Cocoate, Water	1170699-53-2	30% Aqueous Solution	25kg Drum 220kg Drum	Potassium Cocoyl Glycinate	21.0
						Potassium Cocoate	9.0
	GCS-11	Sodium N-Cocoyl Glycinate	90387-74-9	Powder	15kg Carton	Water	70.0
						Sodium Cocoyl Glycinate	100.0
	GCS-12K	Sodium N-Cocoyl Glycinate, Water	90387-74-9	30% Aqueous Solution	18kg Can 200kg Drum 1t Container	Sodium Cocoyl Glycinate	30.0
						Water	70.0
	ET-CS-12	Sodium N-Cocoyl-L-Glutamate	68187-30-4	25% Aqueous Solution	18kg Can 200kg Drum	Disodium Cocoyl Glutamate	16
			68187-32-6			Sodium Cocoyl Glutamate	4
Sodium N-Cocoyl-L-Threoninate		90583-79-2	Sodium Cocoyl Threoninate			5	
Water		—	Water			75	

■ Cationic Surfactant

CAE	–	DL-Pyrrolidonecarboxylic Acid Salt of L-Cocoyl Arginine Ethyl Ester	95370-65-3	Powder	1kg Carton 5kg Carton	PCA Ethyl Cocoyl Arginate	100.0
-----	---	---	------------	--------	--------------------------	---------------------------	-------

■ Amphoteric Surfactant

AMISAFE™	AL-01	N <sup>o</sup> -Lauroyl-L-Arginine	42492-22-8	Powder	3kg Carton	Lauroyl Arginine	100.0
	LL-DS-22	Disodium Na, Na <sup>+</sup> -sebacoylbis (N <sup>o</sup> -Lauroyl-L-Lysinate)	–	10% Aqueous Solution	18kg Poly Can	Disodium Sebacoyl Bis-Lauremidolysine	10.0
						Water	90.0

■ Functional Powder

AMIHOPE™	LL	N <sup>o</sup> -Lauroyl-L-Lysine	52315-75-0	Powder	1kg and 10kg Cartons	Lauroyl Lysine	100.0
	OL	N <sup>o</sup> -Capryloyl-L-Lysine	23735-96-8	Powder	1kg and 10kg Cartons	N-Capryloyl Lysine	100.0
	SB-101	Silicon dioxide	7631-86-9	Powder	1kg and 10kg Cartons	Silica	64
		Cellulose	9004-34-6			Microcrystalline Cellulose	27
		N <sup>o</sup> -Lauroyl-L-Lysine	52315-75-0			Lauroyl Lysine	9
	SB-102	Starch	9005-25-8	Powder	1kg and 10kg Cartons	Zea Mays (Corn) Starch	87
		N <sup>o</sup> -Lauroyl-L-Lysine	52315-75-0			Lauroyl Lysine	8
		Cellulose	9004-34-6			Microcrystalline Cellulose	5

■ Gelatinization Agent

Gelatinization Agent	EB-21	N-2-Ethylhexanoyl-L-Glutamic acid Dibutylamide	861390-34-3	Powder	15kg Carton	Dibutyl Ethylhexanoyl Glutamide	100.0
	GP-1	N-Lauroyl-L-Glutamic acid Dibutylamide	63663-21-8	Powder	15kg Carton	Dibutyl Lauroyl Glutamide	100.0

Product Name	Product Code	Chemical Name	CAS No.	Physical Form	Packaging	PCPC INCI Name	Composition (%)
--------------	--------------	---------------	---------	---------------	-----------	----------------	-----------------

■ Humectant

AJIDEW™	A-100	DL-Pyrrolidone Carboxylic Acid	149-87-1	Powder	25kg Fiber Drum	PCA	100.0
	NL-50 NL-50N	Sodium L-Pyrrolidonecarboxylate, Water	28874-51-3	50% Aqueous Solution	25kg Drum 250kg Drum 1250kg Container	Sodium PCA	50.0
						Water	50.0
AQUADEW™	ZN-100 ZN-100N	Zinc Salt of L-Pyrrolidonecarboxylate	15454-75-8	Powder	4kg Carton 25kg Fiber Drum	Zinc PCA	100.0
						Sodium Polyaspartate	30.0
						Butylene Glycol	8.0
						Disodium EDTA	0.1
PRODEW™	SPA-30B	Ethylenediaminetetraacetic acid, disodium salt	139-33-3	Aqueous Solution	20kg Can	Water	61.9
						Sodium Polyaspartate	30.0
						Butylene Glycol	8.0
						Disodium EDTA	0.1
	P-DS-12	Sodium N-Decanoyl-L-Proline, Water	1364318-34-2	30% Aqueous Solution	18kg Can	Sodium Caproyl Proline	30.0
						Water	70.0
						Sodium PCA	15.00
						Sodium Lactate	12.00
						Arginine	8.00
						Aspartic Acid	5.20
						PCA	4.27
						Glycine	1.28
						Alanine	1.20
						Serine	0.80
						Valine	0.64
						Proline	0.40
PRODEW™	500	Sodium L-Pyrrolidone Carboxylate	28874-51-3	50% Aqueous Solution	25kg Drum	Threonine	0.40
						Isoleucine	0.40
						Histidine	0.16
						Phenylalanine	0.16
						Water	balance
						Sodium PCA	9.75
						Sodium Lactate	5.00
						PCA	3.78
						Serine	1.12
						Alanine	1.06
						Glycine	1.00
						Glutamic Acid	0.43
	600	DL-Pyrrolidone Carboxylic Acid	149-87-1	50% Aqueous Solution	22kg Drum	Lysine HCl	0.34
						Threonine	0.32
						Arginine	0.29
						Proline	0.04
						Water	balance
						Sodium PCA	12.00
						Sodium Polyaspartate	10.00
						Butylene Glycol	10.00
						Betaine	7.50
						Zinc PCA	5.00
						Sodium Citrate	2.50
						Arginine	2.00
PRODEW™	700	Sodium L-Pyrrolidonecarboxylate	28874-51-3	50% Aqueous Solution	2kg Drum 24kg Drum	Serine	0.77
						Lysine HCl	0.14
						Glutamic Acid	0.09
						Water	balance
						Sodium PCA	12.00
						Sodium Polyaspartate	10.00
						Butylene Glycol	10.00
						Betaine	7.50
						Zinc PCA	5.00
						Sodium Citrate	2.50
						Arginine	2.00
						Serine	0.77
ELDEW™	PS-203	Di (Phytosteryl-2-Octyldodecyl) - N-Lauroyl-L-Glutamate	220465-88-3	Liquid	1kg Plastic Bottle 15kg Can	Phytosteryl/Octyldodecyl Lauroyl Glutamate	100.0
						Phytosteryl/Octyldodecyl Lauroyl Glutamate	100.0
						Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate	100.0
						Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate	100.0
	PS-203R	Di (Phytosteryl-2-Octyldodecyl) - N-Lauroyl-L-Glutamate	220465-88-3	Liquid	1kg Plastic Bottle 15kg Can	Phytosteryl/Octyldodecyl Lauroyl Glutamate	100.0
	PS-306R	Di (Phytosteryl-2-Octyldodecyl) - N-Lauroyl-L-Glutamate	245443-09-8	Wax	1kg Plastic Bottle 15kg Can	Phytosteryl/Octyldodecyl Lauroyl Glutamate	100.0
	SL-205	Isopropyl N-Lauroyl Sarcosinate	230309-38-3	Liquid	15kg Can	Isopropyl Lauroyl Sarcosinate	100.0
	APS-307	(Phytosteryl-Decyltetradecyl) -N-Myristoyl-N-Methyl-β-Alaninate	1085852-72-7	Wax	1kg Plastic Bottle 15kg Can	Phytosteryl/Decyltetradecyl Myristoyl Methyl Beta-Alaninate	100.0

■ Emollient

ELDEW™	PS-203	Di (Phytosteryl-2-Octyldodecyl) - N-Lauroyl-L-Glutamate	220465-88-3	Liquid	1kg Plastic Bottle 15kg Can	Phytosteryl/Octyldodecyl Lauroyl Glutamate	100.0
	PS-203R	Di (Phytosteryl-2-Octyldodecyl) - N-Lauroyl-L-Glutamate	220465-88-3	Liquid	1kg Plastic Bottle 15kg Can	Phytosteryl/Octyldodecyl Lauroyl Glutamate	100.0
	PS-306R	Di (Phytosteryl-2-Octyldodecyl) - N-Lauroyl-L-Glutamate	245443-09-8	Wax	1kg Plastic Bottle 15kg Can	Phytosteryl/Behenyl/Octyldodecyl Lauroyl Glutamate	100.0
	SL-205	Isopropyl N-Lauroyl Sarcosinate	230309-38-3	Liquid	15kg Can	Isopropyl Lauroyl Sarcosinate	100.0
	APS-307	(Phytosteryl-Decyltetradecyl) -N-Myristoyl-N-Methyl-β-Alaninate	1085852-72-7	Wax	1kg Plastic Bottle 15kg Can	Phytosteryl/Decyltetradecyl Myristoyl Methyl Beta-Alaninate	100.0

ELDEW™ PS Series and APS Series contain 0.01% of Tocopherol.