



Promois EU-118 type

Acylated derivative of Collagen peptide

1st Edition May 18, 2018

- Benefits

Promois EU-118 type works as multifunctional cosmetic ingredient.

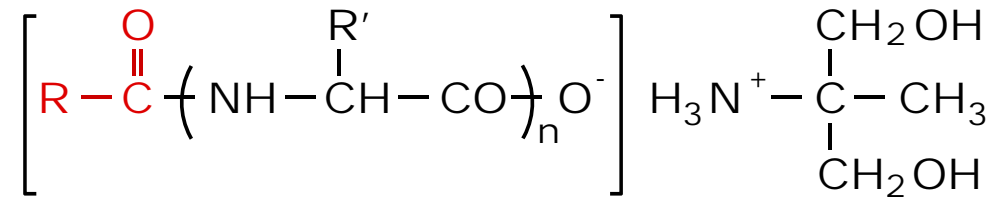
- ➔ Repairing effect
: Replenishes protein and lipids to damaged hair
- ➔ Sensory enhancer
: Gives softness and moisture to hair and skin
- ➔ As solubilizer
: Solubilize less-water soluble materials
(Eg. fragrances and essential oils)
- ➔ 2 choices; water soluble or oil soluble type
: Applicable to wide range of cosmetic products

- Type 1 : Promois EU-118D

- Water-Alcohol soluble

< Chemical Structure >

Promois EU-118D is aminomethylpropandiol (AMPD) salt of isostearoyl condensate of collagen peptide from fish, in 1:2 water-alcohol solution.



RCO : Isostearoyl group

R' : Amino acid side chains

n : Number of amino acids

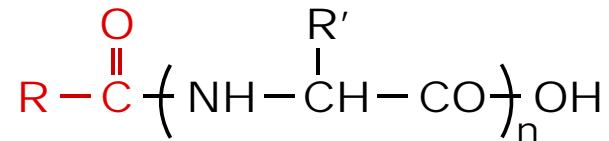
Solvent : Alcohol, Water

INCI name : AMPD-Isostearoyl Hydrolyzed Collagen, Alcohol, Water

- Type 2 : **Promois EU-118(IS)** - Oil soluble

< Chemical Structure >

Promois EU-118(IS) is isostearic acid solution of isostearoyl condensate of collagen peptide from fish.



RCO : Isostearoyl group

R' : Amino acid side chains

n : Number of amino acids

Solvent : **Isostearic acid**

INCI name : Isostearoyl Hydrolyzed Collagen, Isostearic Acid

- Affinity for hair; Feature

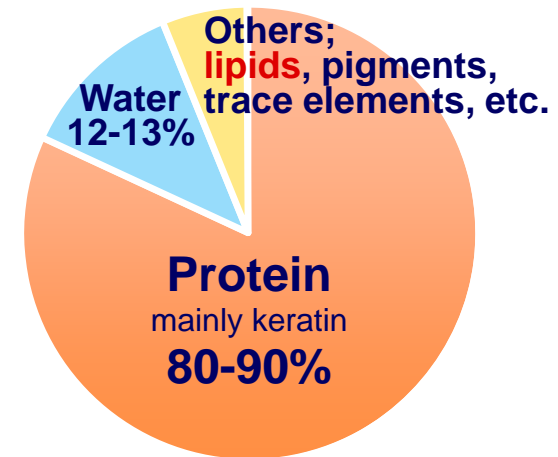
Similar structure ➔ **Excellent affinity!!**

Human hair consists of protein, moisture and lipids.

Especially the outermost layer of human hair cuticle is **protein-lipid complex**, which protects hair from external stresses (washing, UV-rays, combing ...).

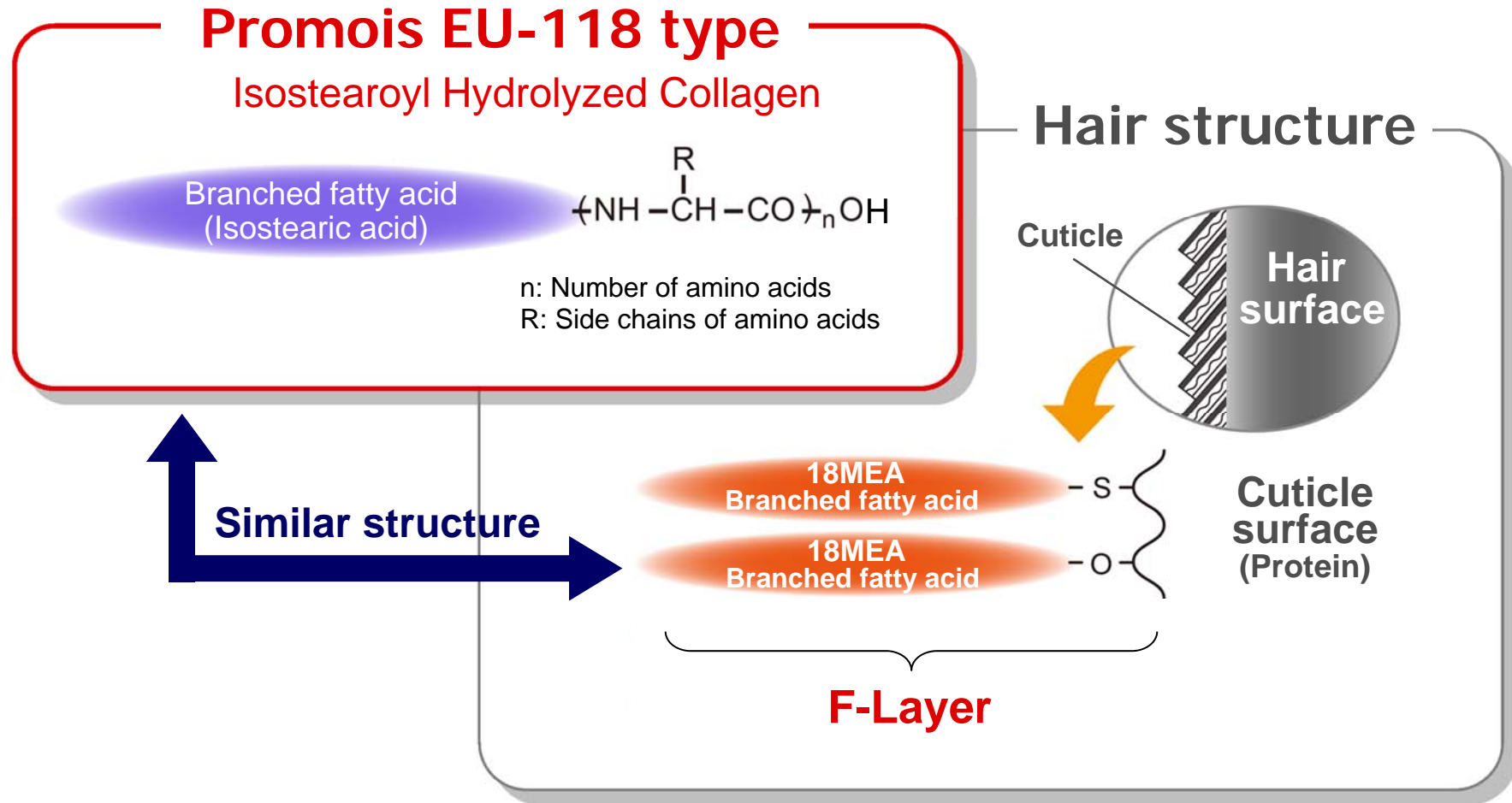
In the same way, **Promois EU-118 type** consists of protein (collagen peptide) and lipid (isostearic acid).

Constituents of human hair *



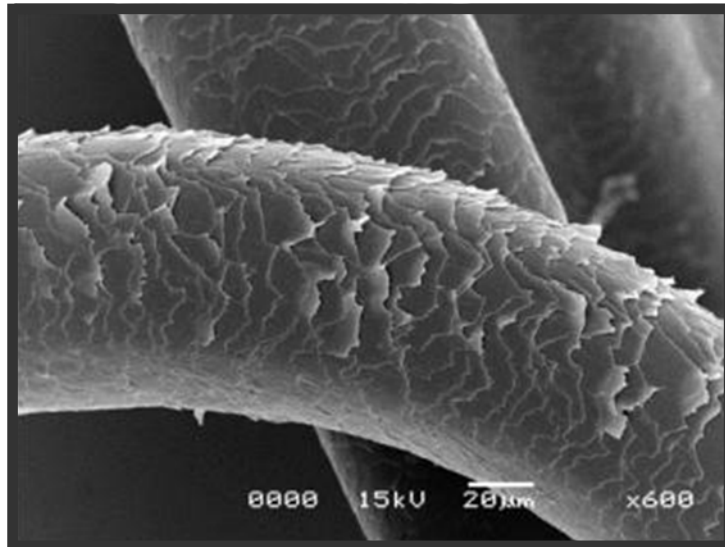
* SCIENCE of WAVE revised edition, Japan Permanent Waving Lotion Industry Association, Shinbiyo Shuppan Co., Ltd., p.175 (2002)

- Affinity for hair; Structure

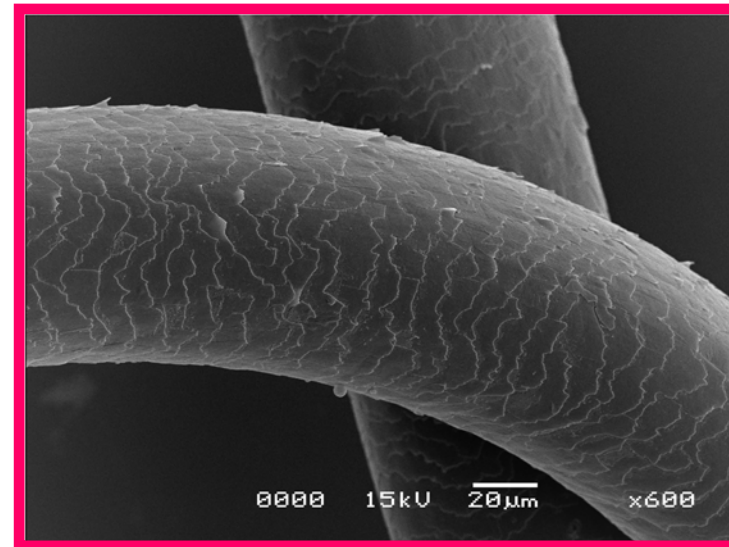


- Repairing effect: Hair-cuticle repair

Control



Promois EU-118D



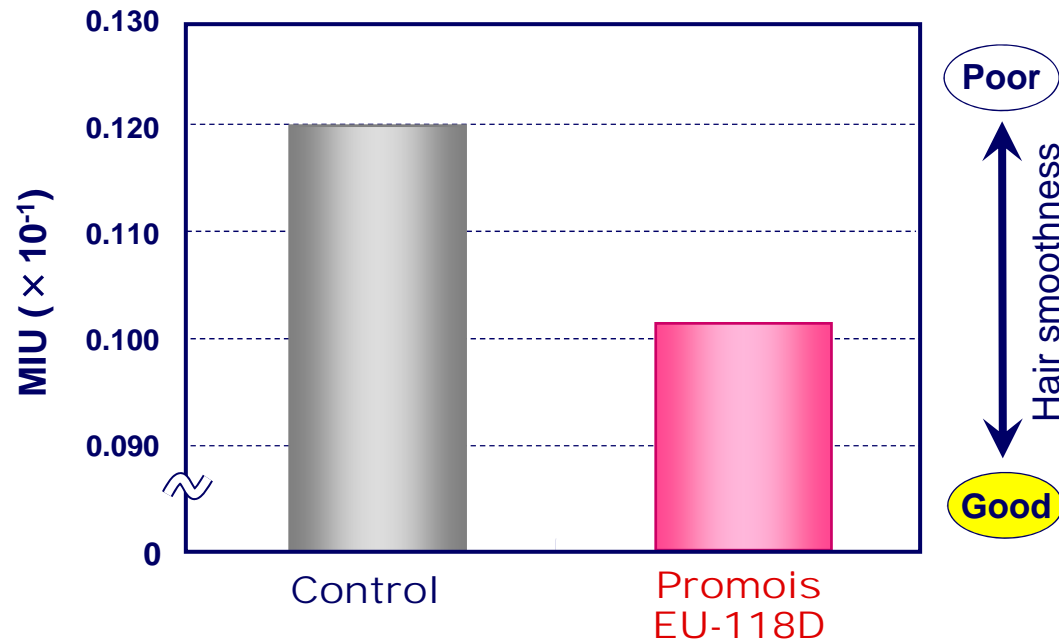
[Experimental method]

Bleached Japanese hair was treated with Promois EU-118D soln. (containing 1.0% active component) at 40 deg C for 10 min, and observed by SEM*.
Control: Hair treated with ion-exchanged water at same condition.

* Scanning electron microscope

Promois EU-118D suppresses cuticle lift-up and conditions the texture of damaged hair surface.

- Repairing effect: Hair-cuticle repair



Friction tester: KES-SE (STP) (Kato Tech Co., LTD.)

[Measurement of dynamic frictional coefficient]

Twenty hair fibers were individually and parallelly fixed on the center of glass plate, and the frictional sensor unit was put on the root of hair fiber and moved toward the tip of hair fiber, and the averaged frictional coefficient of hair surface was recorded during the movement of sensor.

Measurement Range: 2 cm, Rate: 0.5mm / sec.
Humidity: 49 \pm 1%, Temp: 22 deg C

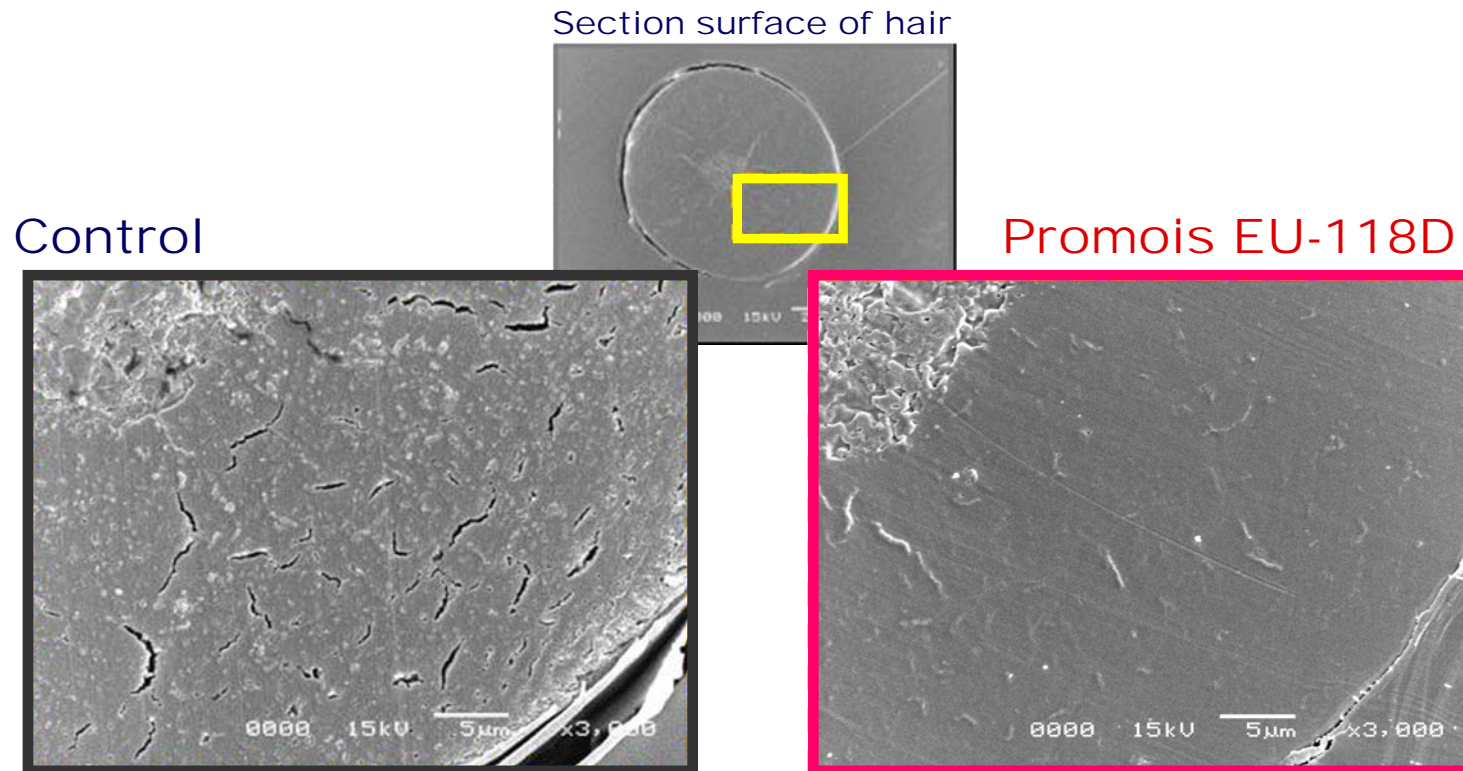
[Experimental method]

Bleached and dyed Japanese hair was treated with Promois EU-118D soln. (containing 1.0% active component) at 40 deg C for 10 min, and averaged frictional coefficient was measured.

Control: Hair treated with ion-exchanged water at same condition.

Promois EU-118D smoothens the damaged hair surface.

- Repairing effect: Hair-cortex repair



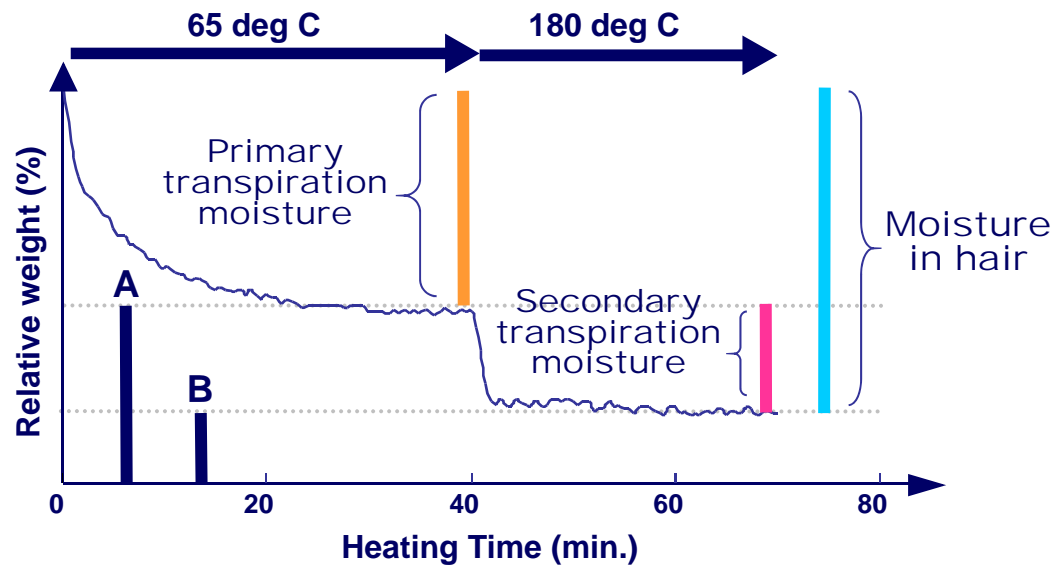
[Experimental method]

3 times-bleached and permed Japanese hair was treated with Promois EU-118D soln. (containing 1.0% active component) at 40 deg C for 15 min, and observed by SEM.

Control: Hair treated with ion-exchanged water at same condition.

Due to its amphiphilic structure, Promois EU-118D refills the damaged and porous cortex (hair-inside) and revitalizes.

- Repairing effect: Hair-cortex repair



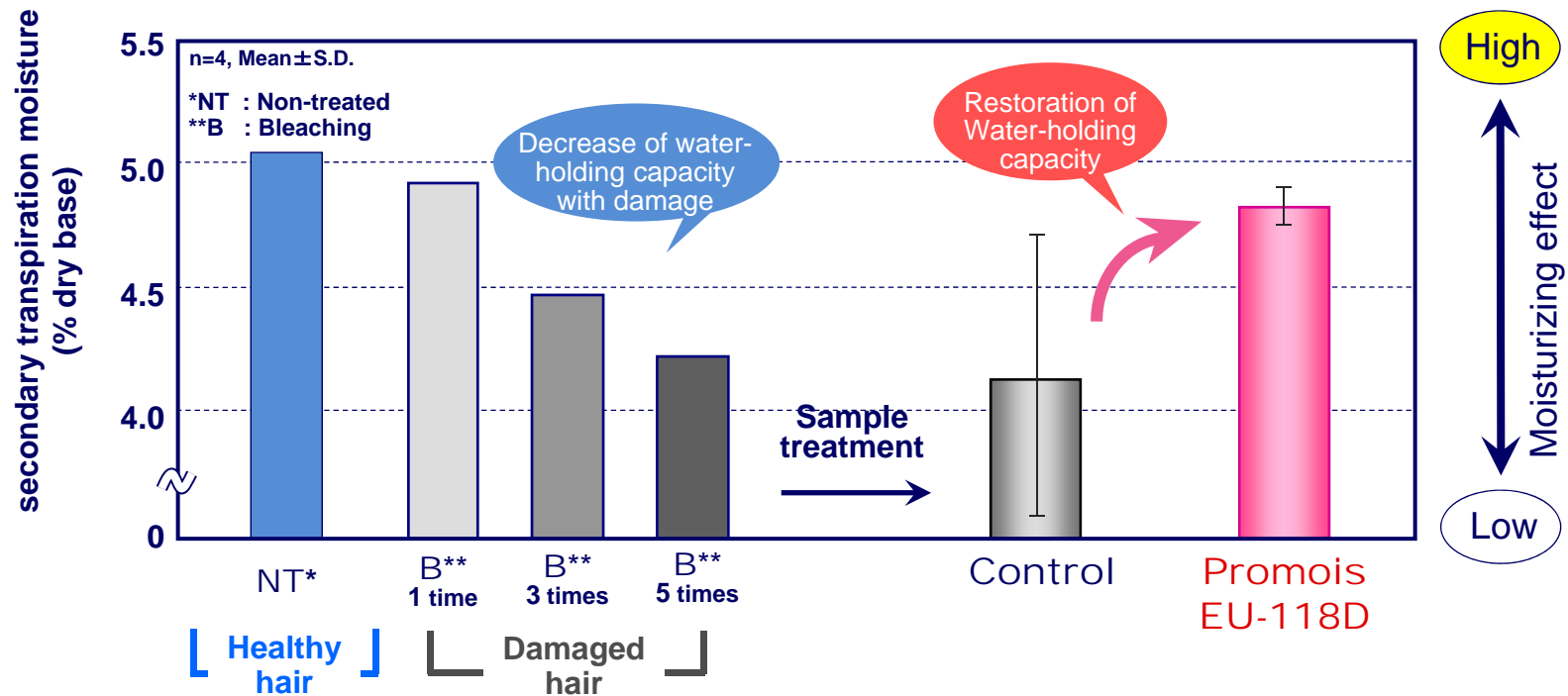
Electric moisture balance
EB-340MOC (Shimadzu Co., Ltd.)

[Measurement of secondary transpiration moisture; moisture-keeping ability of hair]

Moisturizing effect was evaluated by measurement of moisture inside of the hair. The sample hair was heated at 65 deg C (assumed the temperature of hair-dryer) for 40 min, and then the hair was heated at 180 deg C (assumed the temperature when whole hair moisture transpires) for 30min. As shown in Figure, based on the difference of weights between A and B, the secondary transpiration moisture was calculated according to the following equation.

$$\text{Secondary transpiration moisture (\% dry base)} = \frac{(A - B)}{B} \times 100$$

- Repairing effect: Hair-cortex repair



[Experimental method]

Damaged hair (5 times bleached) was three times repeated treatment processes which were soak and shake in Promois EU-118D soln. (containing 1.0% active component) at 40 deg C for 10 min, washing with running water and drying with a dryer, and then secondary transpiration moisture was measured. Control: Hair treated with ion-exchanged water at same condition.

Through replenishment with **Promois EU-118D, damaged hair can restore water-holding capacity.**

- As solubilizer

1.0% active component solutions of tested materials were used in this test.

Maximum content of solubilized fragrance oils (%)

	Promois EU-118D		PEG-40 Hydrogenated Castor Oil	
	5 deg C	RT *1	5 deg C	RT *1
Linalool	0.8 %	0.6 %	0.4 %	0.2 %
Phenethyl alcohol	1.4 %	1.2 %	2.0 %	1.6 %
Peppermint Oil	0.32 %	0.28 %	NS *2	0.12 %
Rosemary Oil	0.36 %	0.28 %	0.04 %	0.04 %

*1 RT: Room Temperature

*2 NS: Not Solubilized

Promois EU-118D exhibits good solubilizing power to less water-soluble materials such as fragrances / essential oils.

- Product information

Basic information

	Promois EU-118D	Promois EU-118(IS)
INCI name	AMPD-Isostearoyl Hydrolyzed Collagen, Alcohol, Water	Isostearoyl Hydrolyzed Collagen, Isostearic Acid
CAS No.	169590-82-3, 64-17-5, 7732-18-5	111174-63-1, 30399-84-9
Number-average molecular weight	600	500
Active component	25%	3%
Solvent	Water (25%) , Alcohol (50%)	Isostearic acid (97%)

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