

Oil products for using by heat to improve damaged hair

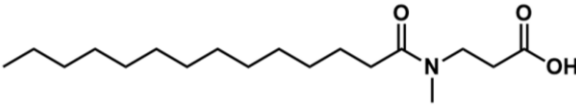
SOFTILT® AH-ME is an amino acid-based paste oil.

It can be used as an ingredient to give the hair “Bounce”, “Moisture retention”, and “Smoothness” after application, and the effects can be sustained by heat.

1 Product Features

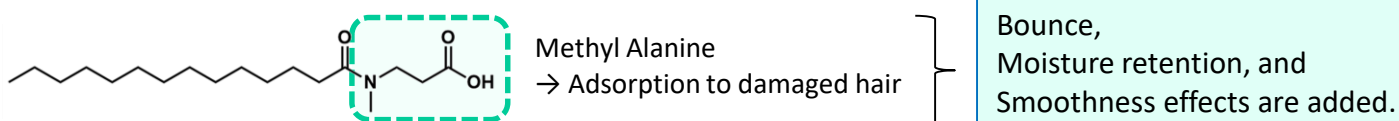
- **Component derived from N-methyl-β-alanine, an amino acid**
It has the natural amino acid β-alanine structure.
- **Provides hair with “Bounce”, “Moisture retention”, and “Smoothness” effects**
The β-alanine structure adsorbs to damaged hair.
This gives it a high degree of bounce, moisture retention, and smoothness.
- **Heat boosting effect**
The effects are enhanced and sustained by heat.
- **Can be used as wax**
Gives a full-bodied feel when formulated.

2 Information

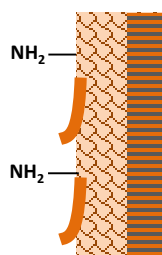
INCI	Myristoyl Methyl Beta-Alanine, Cetyl Ethylhexanoate	
中文INCI	肉豆蔻酰甲基 β-氨基丙酸、鲸蜡醇乙基己酸酯	
Properties	Characteristics: White to light yellowish paste-like solid, slightly odoriferous	
	Active ingredient : 50%	Melting point: approx. 70°C
Structure (active ingredient)		

3 Functionality

Concept of Functional Expression

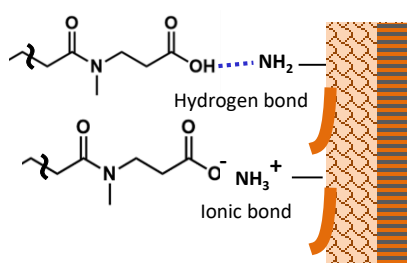


(i) Damaged hair



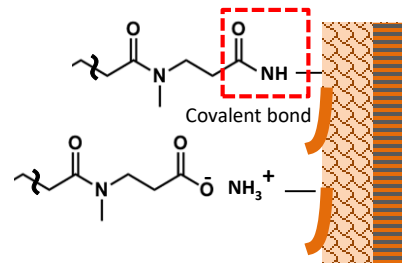
Damaged hair has amino groups exposed on the surface.

(ii) Adsorption to hair



Myristoyl Methyl Beta-Alanine adsorbs to amino groups on the surface of damaged hair.
→ Provides bounce, moisture retention, and smoothness.

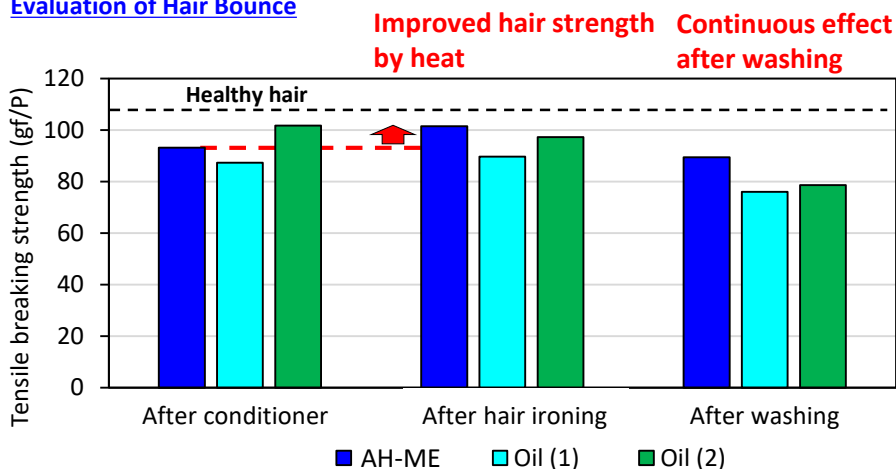
(iii) Enhancement by heat



The adsorbed Myristoyl Methyl Beta-Alanine binds by heat.
→ Enhanced performance

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Evaluation of Hair Bounce



Measurement conditions

Measuring equipment: Tensile rupture tester

Method: The damaged hair is treated in the

following order: conditioner → hair iron

→ washing with sodium laureth sulfate.

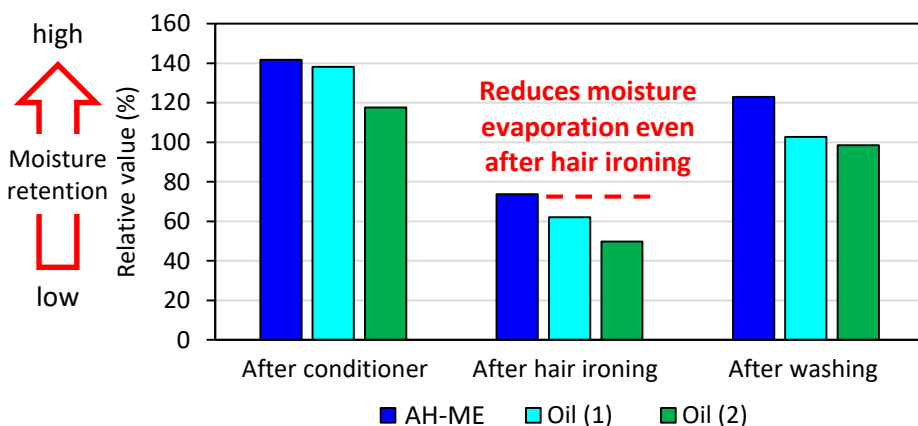
A hair iron set at 200°C was passed through the hair for about 2 seconds 200 times.)

Prescription : Listed in Table.

INCI	wt%
Behentrimonium Chloride	1.0
Cetyl Alcohol	2.0
Stearyl Alcohol	1.0
Behenyl Alcohol	0.2
Other oils, alcohol, etc.	9.2
Myristoyl Methyl Beta-Alanine or Oil (1) or Oil (2)	4.0
Water	Balance
Total	100.0

Strength is improved by heat. Effects sustain even after washing.

Evaluation of Hair Moisture Retention



Measurement conditions

Measuring equipment: Halogen heater

Operation Procedure: Same as the procedure for hair bounce.

Calculation Method

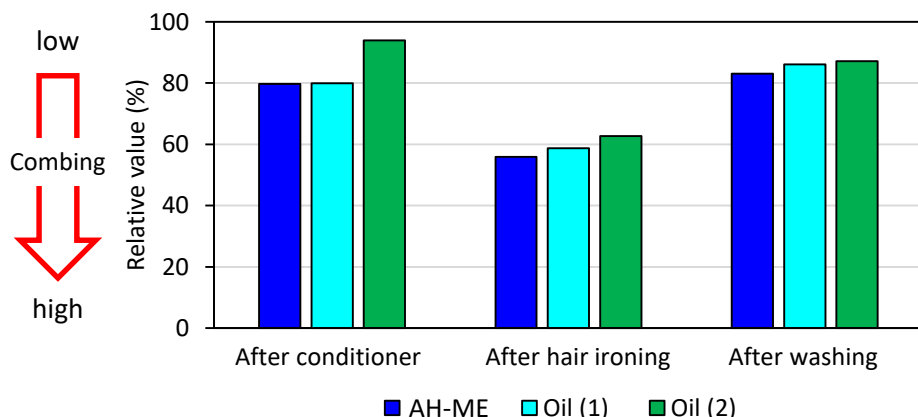
Relative value (%)

= (moisture retention in the hair at each step / moisture retention of hair before conditioner) × 100

*Moisture retention = ((amount of water evaporated at 105°C) - (amount of water evaporated at 60°C))

Higher moisture retention than other oils due to the adsorption of SOFTILT® AH-ME on hair and its moisturizing effect.

Evaluation of Hair Smoothness



Measurement conditions

Measuring equipment: Friction feeling tester

Operation Procedure: Same as the procedure for hair bounce.

Calculation Method

Relative value (%)

= (dynamic friction coefficient of hair in each process / dynamic friction coefficient of hair before conditioner) × 100

Adsorption of SOFTILT® AH-ME to the hair improves combing efficiency compared to other oils.

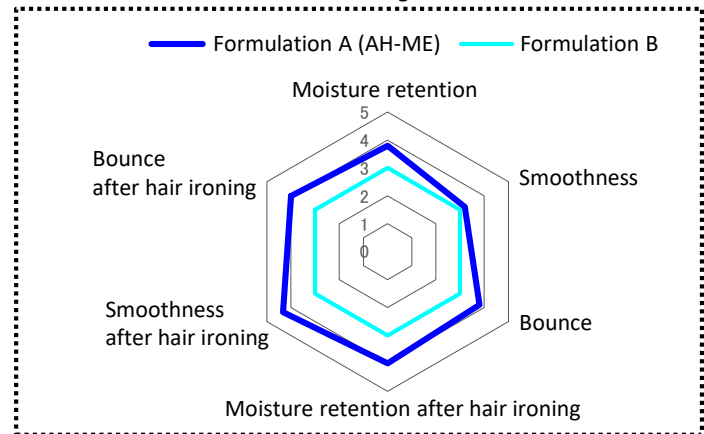
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Sensory Evaluation

Simplified formulation

INCI	wt%	
	Formulation A	Formulation B
Behentrimonium Chloride	1.0	1.0
Cetyl Alcohol	2.0	2.0
Stearyl Alcohol	1.0	1.0
Behenyl Alcohol	0.2	0.2
Other oils, alcohol, etc.	9.2	9.2
Myristoyl Methyl Beta-Alanine	2.0	-
Oil (1)	-	2.0
Water	Balance	Balance
Total	100.0	100.0

*Average of 7 men and women total



In sensory evaluation, the effect of heat was also felt.

4 Example of Formulation (Conditioner)

● Conditioner for using by heat to improve damaged hair

Phase	Ingredients	INCI	wt%
A	-	Water	81.4
	-	Guar Hydroxypropyltrimonium Chloride	0.5
	-	Hydroxyethylcellulose	0.1
B	-	Propylene Glycol	4.0
	CATION™ VB-M Flake	Behentrimonium Chloride, Isopropyl Alcohol	1.2
C	SOFTILT® AH-ME	Myristoyl Methyl Beta-Alanine, Cetyl Ethylhexanoate	4.0
	-	Shea Butter	3.0
	-	Cetyl Ethylhexanoate	1.5
	-	Cetyl Alcohol	2.0
	-	Stearyl Alcohol	1.0
	-	Behenyl Alcohol	0.2
	NONION™ S-40	PEG-75 Stearate	0.1
D	LIPIDURE®-C	Polyquaternium-64, Water	1.0
Total			100.0

<Method>

- (1) Add the phase A to water little by little at room temperature to pre-dispersion.
- (2) Add the phase B sequentially to phase A and stir at 80°C until uniform.
- (3) Weigh Phase C separately and stir at 80°C until uniform.
- (4) While stirring at 80°C, add phase C to phase A+B and stir until uniform.
- (5) Mix with a homo mixer (6,000 rpm) at 80°C for 5 minutes.
- (6) Add Phase D and stir until uniform.
- (7) Cool to room temperature with stirring.



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