

Asian Beauty Creator
AMOREPACIFIC

Development of stable functional cosmetic products using natural ingredient

Amore Pacific R&D center





Introduction

Introduction

- **Organic Cosmetics Certifications**



BDIH – Germany

The Association of Industries and Trading Firms for pharmaceuticals, health care products, food supplements and personal hygiene products



ECO CERT – France

Ecocert is an inspection and certification body established in France in 1991 by agronomists aware of the need to develop environmentally friendly agriculture.



Cosmetique Bio – France

Partnership between ten cosmetic laboratories committed to establishing a Charter for the foundation of an ecological and natural cosmetics industry using ingredients produced by organic farming

• Organic Cosmetics Certifications



ICEA –Italy

The Ethical and Environmental Certification Institute, inspects and certifies firms respectful for the environment, workers' dignity and collective rights



Soil Association– U.K.

The Soil Association was founded in 1946 by a group of farmers, scientists and nutritionists who observed a direct connection between farming practice and plant, animal, human and environmental health.



USDA – U.S.A.

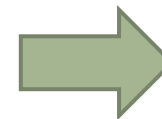
American Organic Certification. The N.O.P. and the Organic Foods Production Act are intended to assure consumers that the organic foods they purchase are produced, processed, and certified to be consistent with American organic standards.

- Organic Cosmetics Certifications

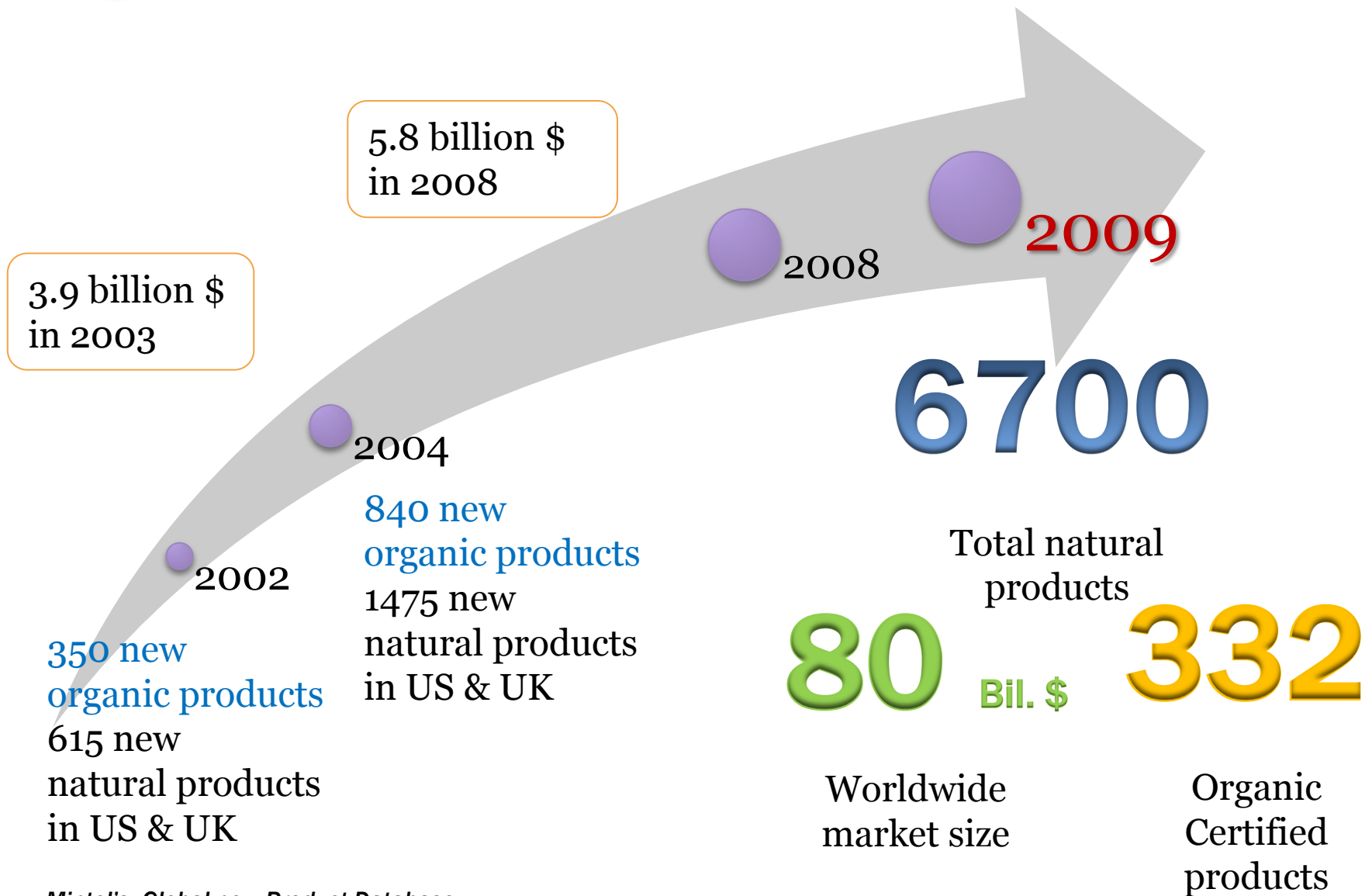


- ✓ Cosmetics contain organic cultured materials
- ✓ Chemical fertilizers/pesticides Free
- ✓ Genetically Modified Organism Free

- Organic Cosmetics Certifications in Korea



Organic Cosmetics Market



Organic Cosmetics in Korea

1997

1st
regulation of
Organic
Cultivation



2009

KFDA
Guideline
for Organic
Cosmetics



Rural Development
Administration

Environmentally-friendly
agriculture promotion
Act

2008

1st Organic
Cosmetics
"Innisfree
Eco-Recipe"



2011

1st Organic
Functional
Cosmetics
"Innisfree
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Organic Cosmetics & AMORE PACIFIC

Amorepacific Promise



- Guide-line of Sustainable Product Development for Customers, Environments, Communities

Vision for Sustainability
Management

Vocation

ASIAN BEAUTY CREATOR

Vision for
Sustainability
Management

Asia's most respected global beauty company by 2015

Targets for 2011

10% annual growth in sustainable products
5% annual reduction in greenhouse gas emissions
One of Korea's ten most respected companies

Strategic
Directions

Safe products &
sustainable
Innovation

Reduction of
corporate-wide
environmental impact

Creation of a
workplace where
people want to work

Win-win relationships
with business partners

Strategic social
contributions

Organic Cosmetics & AMORE PACIFIC

Sustainable Product Development of AMORE PACIFIC



Customer - friendly



Environmental -
friendly



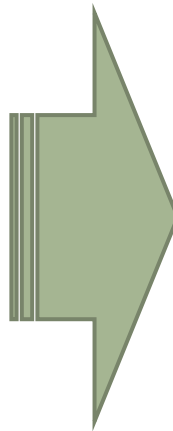
Community - friendly



Organic Cosmetics & AMORE PACIFIC



Pioneer Organic Brand *innisfree*



1st Organic Cosmetics in Korea

Innisfree Eco-Recipe



1st Organic certified
Functional Cosmetics

Innisfree Eco-science



Organic Cosmetics & AMORE PACIFIC

primera

Premium Organic Brand primera



ORGANIENCE LINE



BABY LINE

Organic Cosmetics & AMORE PACIFIC

Baby Organic Brand

HAPPY BATH
NATURAL



1st Organic baby skincare in Korea

Chamomile Baby



Safety and Smart
Organic baby care product

HAPPY BATH Bio bébé



Experiment

Rules for composition of Organic Formulations

10 %

1. Contains more than 10% of Certified ingredients

95 %

2. Contains more than 95% of Certified ingredients on plant ingredients

No
synthetic
ingredients

3. Restrict synthetic ingredient and petrol-chemicals

Formulation problems of Organic Formulations

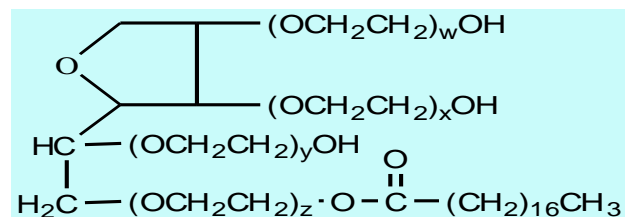
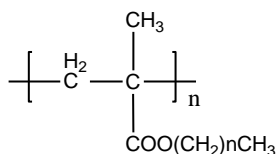
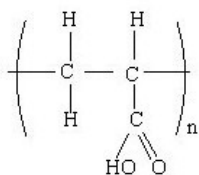
No
synthetic
ingredients



**Lack of
Emulsion Stabilizer & Solubilizer**

Stabilizer / Solubilizer – Synthetic materials

PEGs etc.



10 %

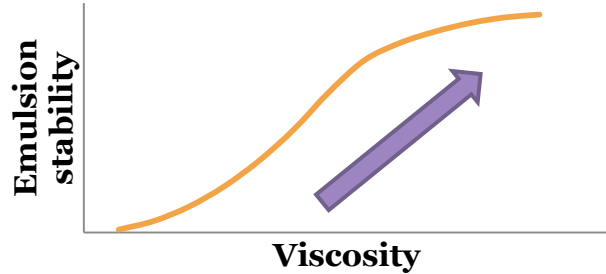


**Organic certified Ingredients contains
many kinds of ionic compounds**

Preservatives – ionic materials

Benzoic acid, Salicylic acid, Sorbic acid and its salt etc.

Formulation problems of Organic Products



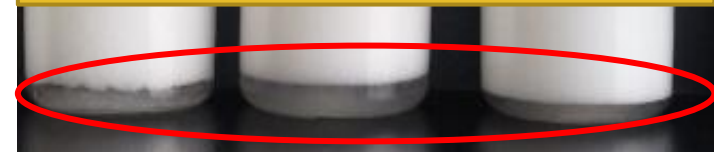
Stability
&
Fluidity



KFDA
Certification
&
Organic Cert.
Conditions



Separation of
unstable emulsions



Objective of Experiments

1. Stable Functional Cosmetic Products

2. Stable Fluid Emulsion Formula

Organic
cosmetics
Certification

Eco-cert

Stability

3month,
-20~45℃

1

Functionality

KFDA

2

Viscosity

5000 ~ 6000
cps



Experiment 1.

Active ingredient solubilizing

Method and Materials

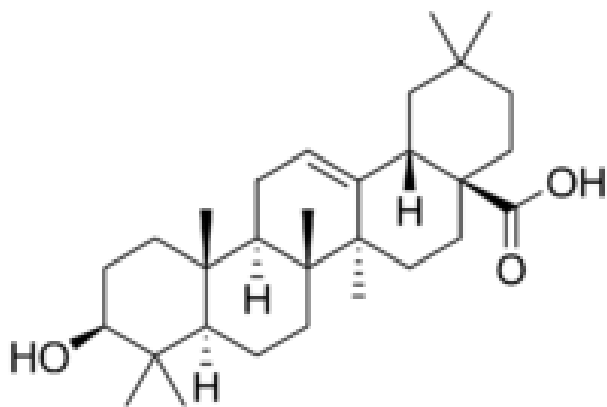
Formulation

(Eco-cert certified ingredient vs common synthetic ingredient)

- : Oleanolic acid 0.05 %
- + Solubilizing agent (0.1 ~ 1.0 %)
- + Natural Thickner (0.1 ~ 1.0 %)

Oleanolic acid

: anti-aging, anti-wrinkle agent

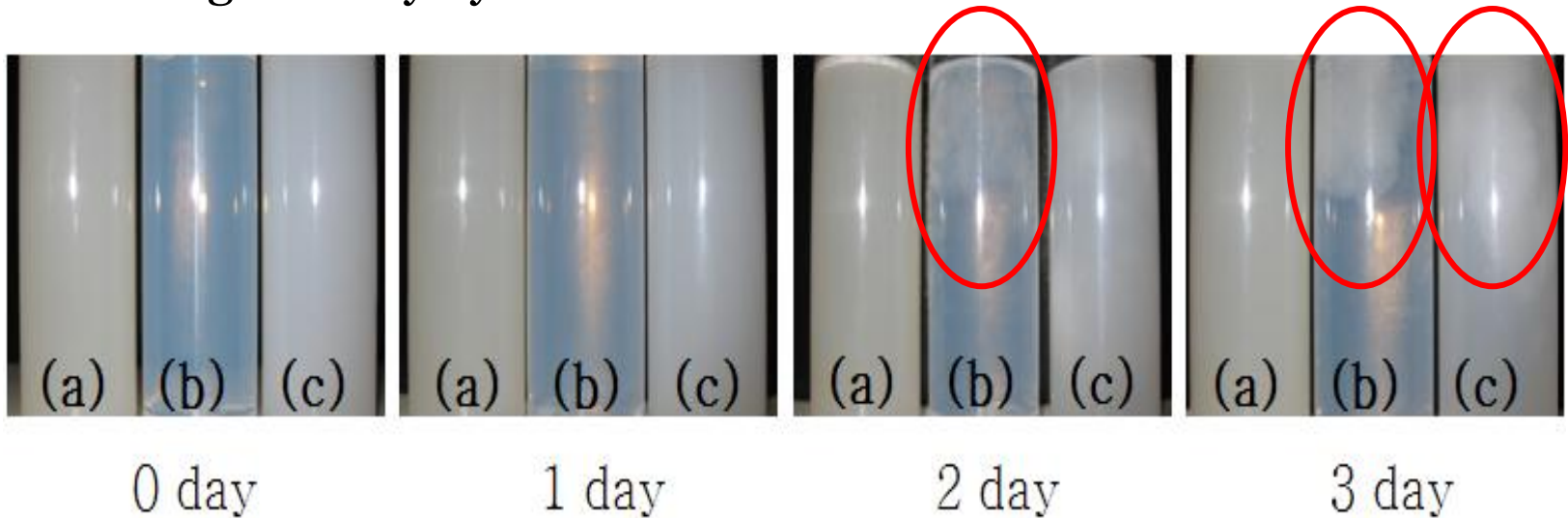


Solubilizing agent

INCI name
Hydrogenated Lecithin
PEG-60 Hydrogenated Castor Oil
Caprylyl/Capryl glucoside

Result and Discussion

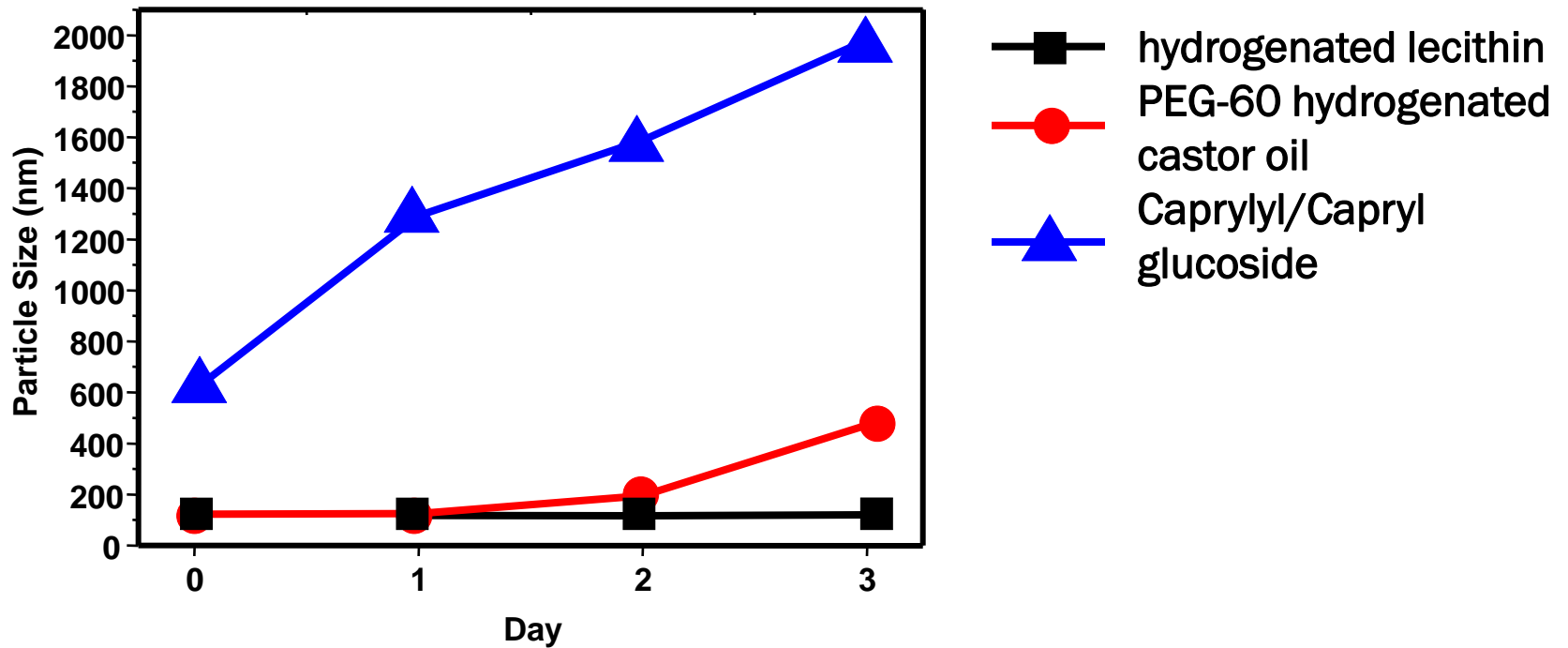
Solubilizing stability by kind of surfactant



hydrogenated lecithin (a), PEG-60 hydrogenated castor oil (b), Caprylyl/Capryl glucoside (c)

Result and Discussion

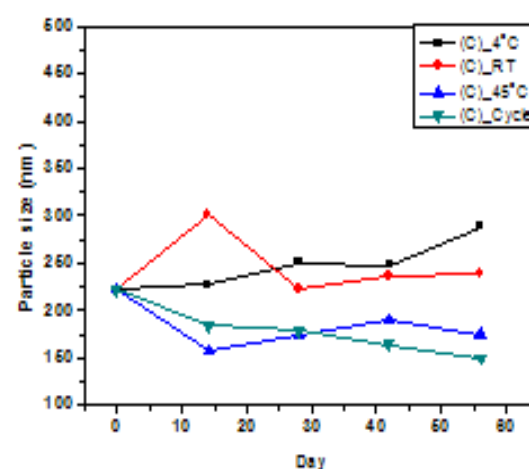
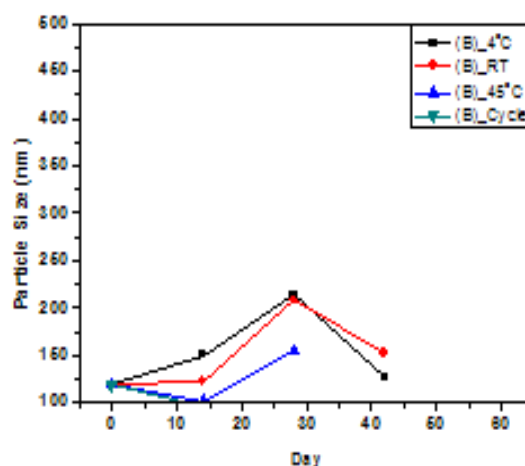
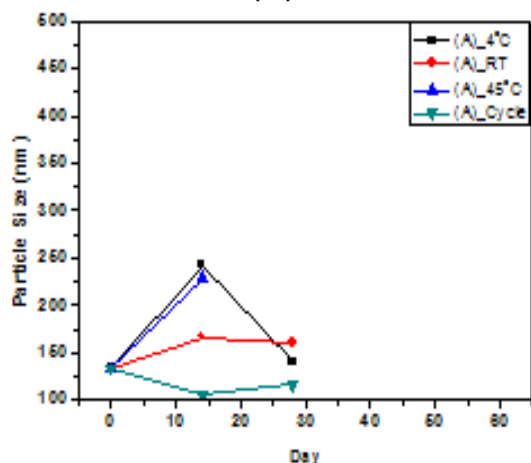
Particle size change by kind of surfactant



Result and Discussion

Change of particle size & formulation stability with introducing oleanolic acid or thickeners (O : Good, \triangle : Normal \times : Bad)

: only hydrogenated lecithin (a), addition of oleanolic acid (b), addition of oleanolic acid & thickeners (c)

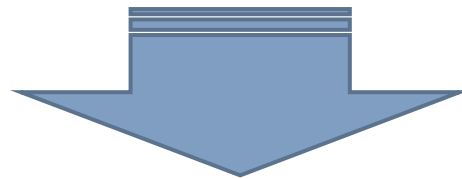


sample	(A)				(B)				(C)			
Temp.	4 °C	RT	45 °C	cycle	4 °C	RT	45 °C	cycle	4 °C	RT	45 °C	cycle
2w	O	O	O	O	O	O	O	O	O	O	O	O
4w	O	\triangle	\times	O	O	O	O	O	O	O	O	O
6w	N/A	N/A	N/A	N/A	O	\triangle	\times	O	O	O	O	O
8w					N/A	N/A	N/A	N/A	O	O	O	O

Conclusion

Stable Functional Formulation

Introducing Hydrogenated Lecithin as a solubilizer



Stability of the formulation

8 WEEKS AT 45 °C

Application

INNISFREE ECOSCIENCE SKIN



- ✓ Natural Ingredients : 99.9 %
- ✓ Natural anti-wrinkle product
- ✓ Synthetic polymer Free
- ✓ PEG surfactant Free
- ✓ Dermatology Tested



Application

PRIMERA TREESAP PRIME SERUM



primera

- ✓ Natural Ingredients: 99.9%
- ✓ Natural dual-functional product (anti-wrinkle, whitening)
- ✓ Synthetic polymer Free
- ✓ PEG surfactant Free
- ✓ Dermatology Tested





Experiment 2.

Stable Fluid Emulsion Formulation

Method and Materials

Formulation

(Eco-cert certified ingredient)

- : Natural O/W Emulsifier (0.1 ~ 10 %)**
- + Natural Thickener (0.1 ~ 5 %)**
- + Natural oil(10 ~ 20 %)**

Natural Surfactant

INCI name
Cetearyl Glucoside
Arachidyl Glucoside
C12-20 Alkyl Glucoside
Polyglyceryl-3 Distearate
Glyceryl stearate citrate
Sodium Stearoyl Glutamate

Natural Thickener

INCI name
Xanthan gum
Dehydroxanthan Gum
Bentonite
Carrageenan
Magnesium Aluminium Silicate
Sodium Magnesium Silicate

Method and Materials

Stability

: -20 °C, 4 °C, 30 °C, 45 °C, RT,
cycling chamber(-10~45 °C, 12hr~12hr)

Viscosity

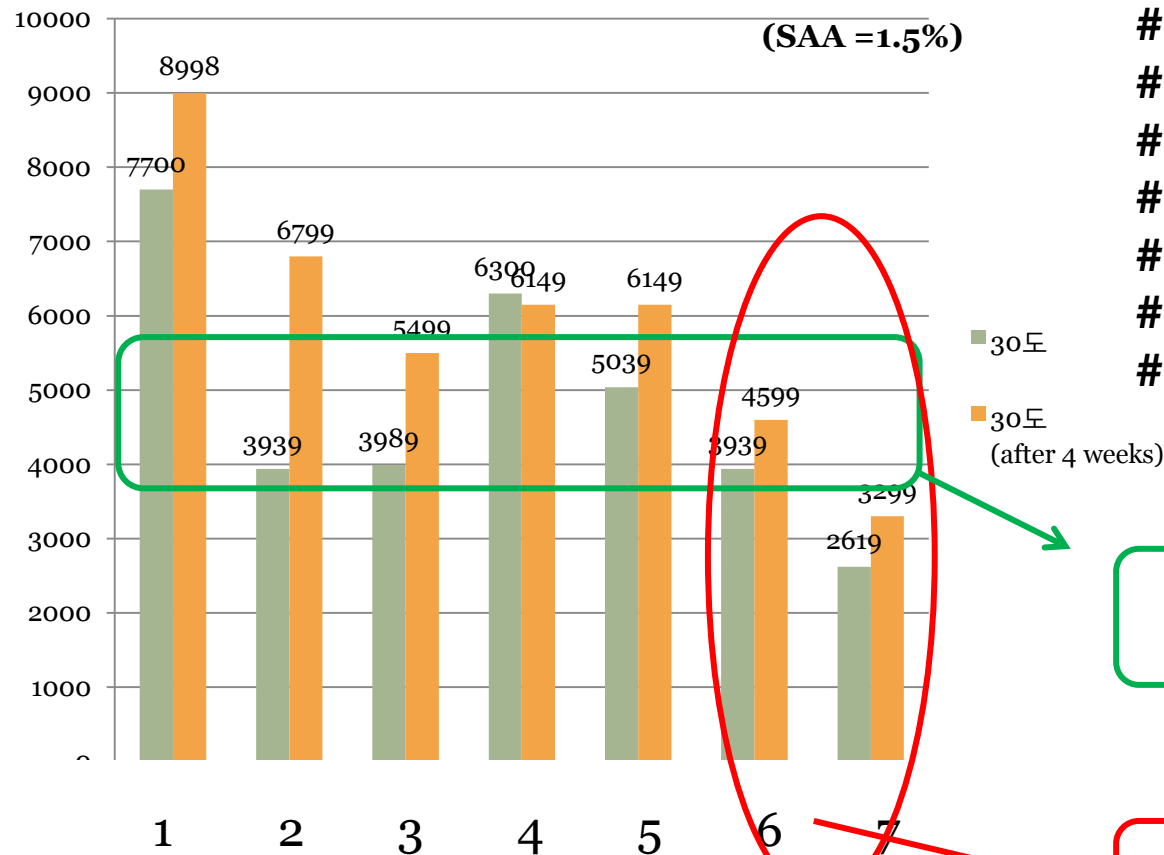
: check viscosity (30 °C, Brookfield rheo-meter)

Safety

: treated the emulsion on forearm and check safety

Result and Discussion

Stability of Emulsions by kind of surfactant



- #1 : Alkyl Glucoside
- #2 : Alkyl Glucoside 2
- #3 : Alkyl Glucoside 3
- #4 : Polyglyceryl fatty acid
- #5 : Glyceryl fatty acid
- #6 : hydrogenated lecithin
- #7 : Ionic Surfactant

Optimal viscosity
for fluid emulsion

Unstable at High Temp.

Stability of Emulsions by kind of surfactant
(Surfactant = 1.5%)

Result and Discussion

Stability of Emulsions by amount of surfactant

#1 : Alkyl Glucoside 1

#2 : Alkyl Glucoside 2

#3 : Alkyl Glucoside 3

#4 : Polyglyceryl fatty acid

#5 : Glyceryl fatty acid

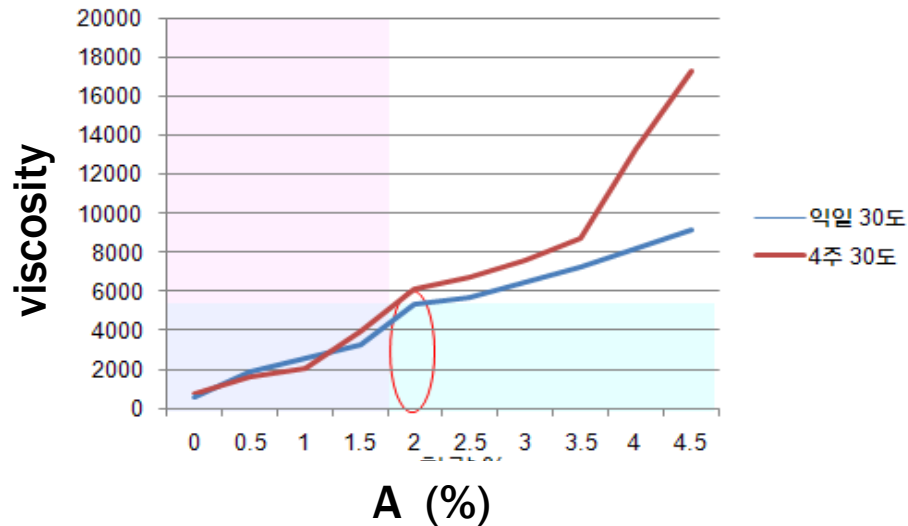
Except 2 unstable
surfactants.

Surfactant content(A) :
0~4.5%

Ingredient	wt %
Surfactant	A
GLYCERYL STEARATE	0.5
Behenyl alcohol	1
Helianthus Annuus (Sunflower) Seed Oil	3
Dicaprylyl Ether	1
Phytosqualane	5
Coco-caprylate/caprata	1
Butyrospermum Parkii (Shea Butter) Extract	1
Glyceryl Caprylate	0.1
Glycerin	2
Propanediol	12
XANTHAN GUM	0.3
LAVANDULA ANGUSTIFOLIA FLOWER WATER	6.5
WATER	to 100

Stability of Emulsions by kind of surfactant
(Surfactant =1.5%)

Result and Discussion



Alkyl Glucoside Surfactant 1

Viscosity increasing tendency

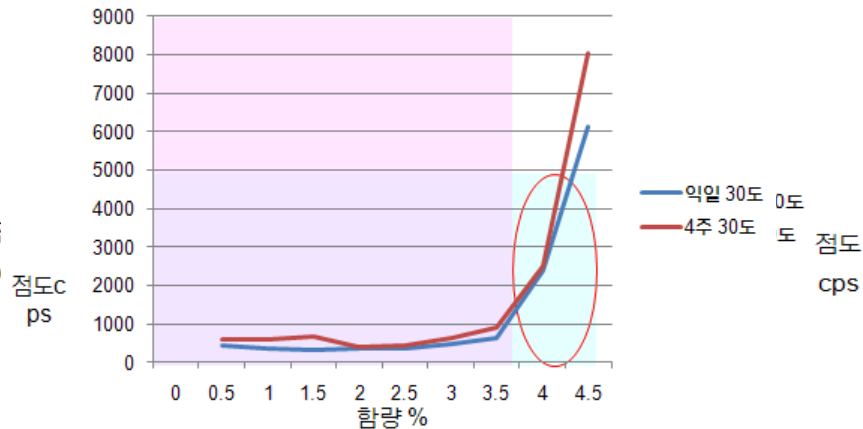
proportional increase

Emulsion Stability

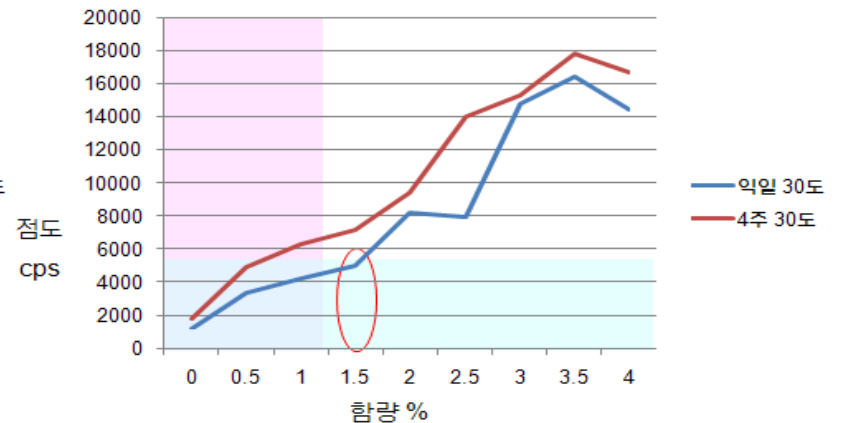
$A > 1.5 \%$

A (%)	surfactant	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5
viscosity	30 °C	562.4	1850	2539	3299	5319	5709	6419	7218	8218	9108
	30 °C (4weeks)	709.8	1610	2040	3959	6099	6739	7548	8728	13297	17246
stability	1 week	X	X	X							
	3 weeks	X	X	X	X						

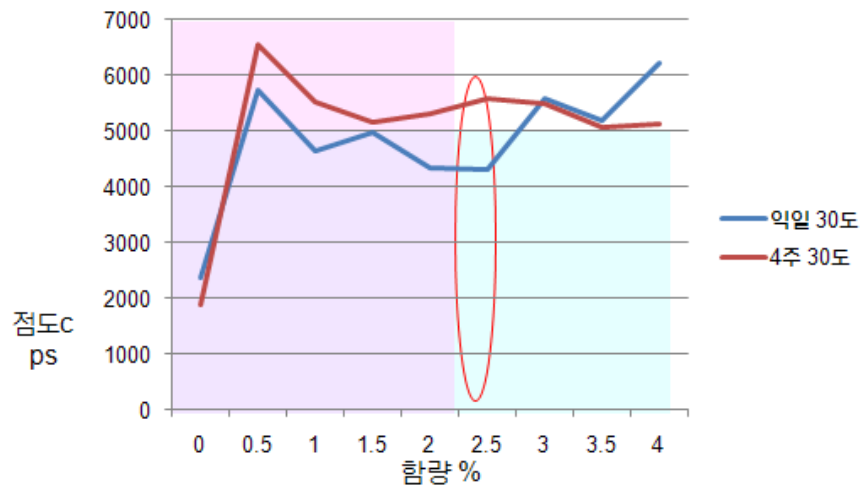
Result and Discussion



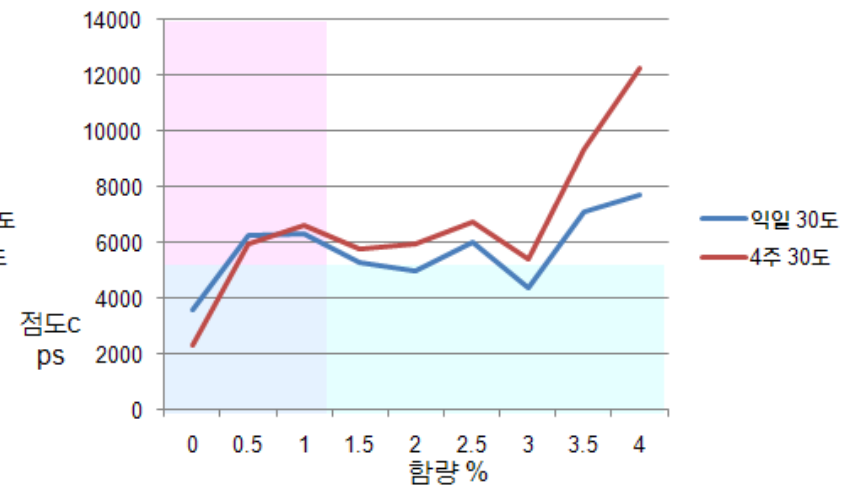
Glyceryl Fatty acid Surfactant



Alkyl Glucoside Surfactant 2



Alkyl Glucoside Surfactant 3



Polyglyceryl Surfactant

Result and Discussion

Viscosity increasing tendency

proportional increase

#1 : Alkyl Glucoside 1

#2 : Alkyl Glucoside 2

include linear viscosity area

#3 : Alkyl Glucoside 3

#4 : Polyglyceryl fatty acid

#5 : Glyceryl fatty acid

Minimum Surfactant % for Emulsion Stability

#1 : Alkyl Glucoside 1 1.5 %

#2 : Alkyl Glucoside 2 1 %

#3 : Alkyl Glucoside 3 2 %

#4 : Polyglyceryl fatty acid 1 %

#5 : Glyceryl fatty acid 4 %

Viscosity increasing tendency



Emulsion Stability

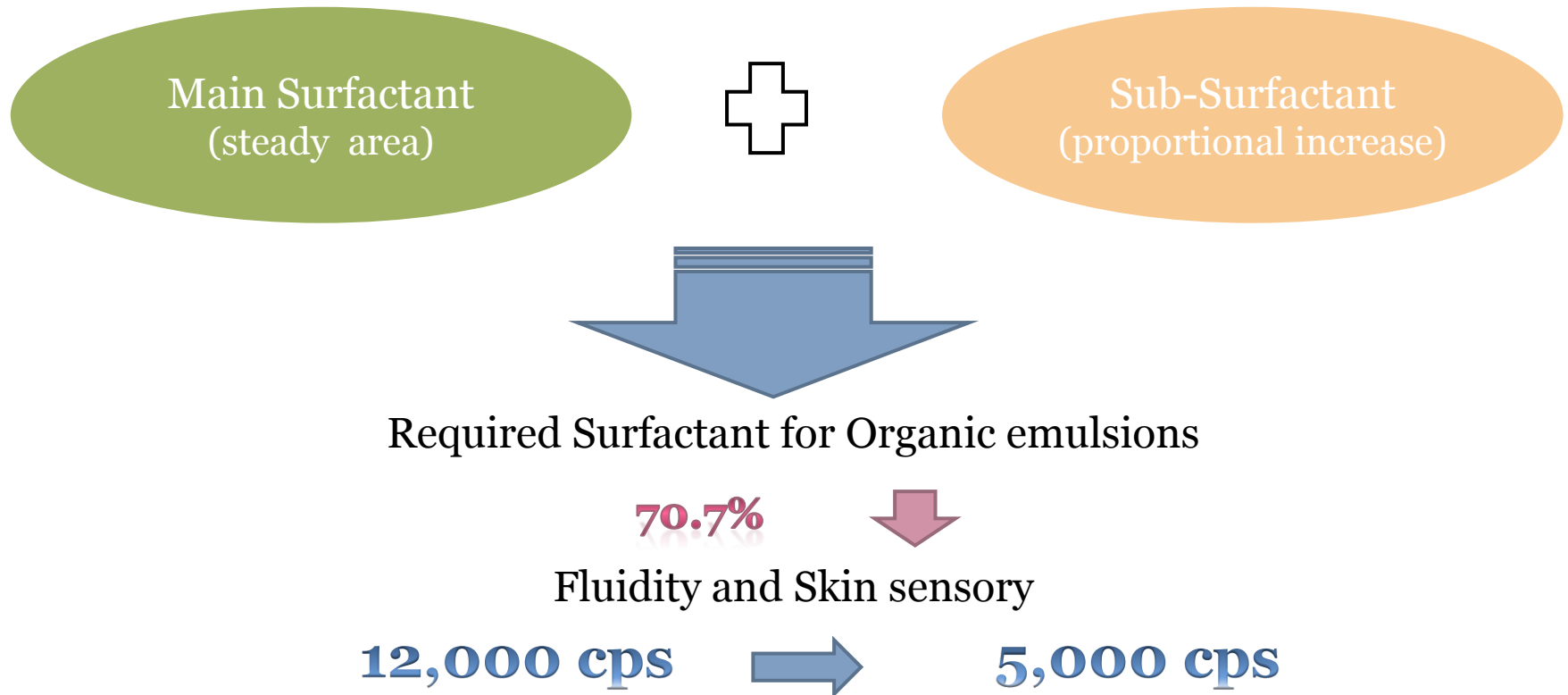


**Optimal Organic Fluid
Formulation**

Conclusion

Optimal Organic Fluid Formulation

Combination of Surfactant



Application

HAPPY BATH Bio bébé Soothing Lotion



- ✓ Natural Ingredients : 99.25%
- ✓ Synthetic polymer Free
- ✓ PEG surfactant Free
- ✓ Fluid Emulsion
- ✓ Dermatology Tested



Creating a Beautiful Life



The background is a solid dark blue color with a subtle, repeating pattern of lighter blue floral and leaf motifs. The pattern includes various flower shapes, some with multiple petals, and elongated leaves, all rendered in a slightly different shade of blue than the background.

Thank you for
your attention

Asian Beauty Creator

AMOREPACIFIC