



■ This foam is a dream...

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Introduction

- Amino acid-based surfactants at a glance
- The texture of the foam
 - foam formation, stability & volume
- Additive as foam booster and the relevance of the pH value
- Examples of formulas for various applications
 - shower gel, shampoo, pump foam, paste, emulsion, powder



Amino-acid surfactants

at a glance

Amisoft

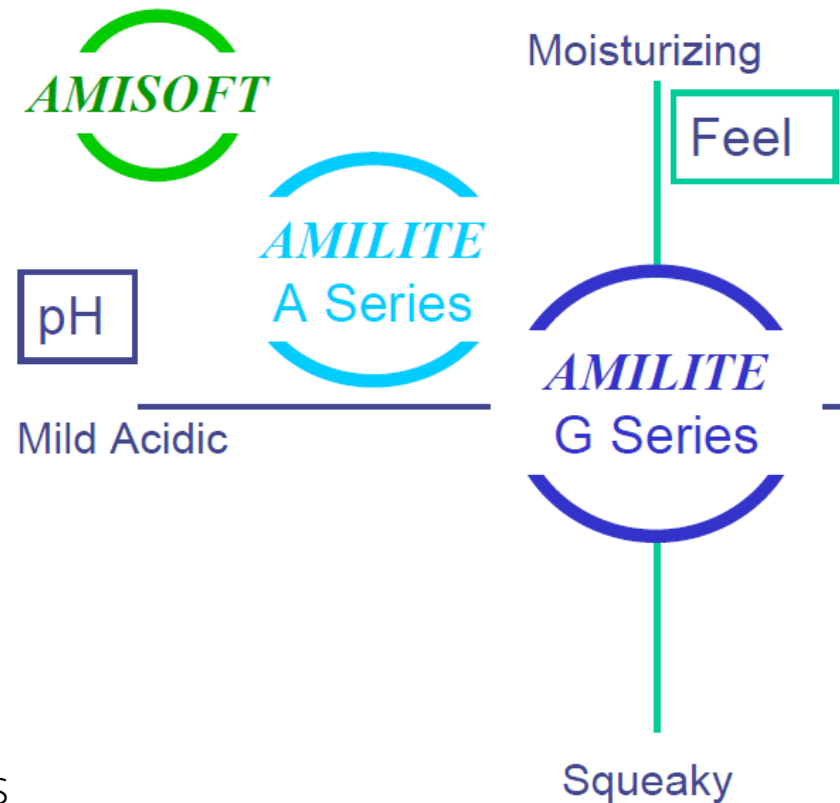
Acyl Glutamate
Lightly conditioning
Soft & creamy
Natrue & Cosmos

Amilite A Series

Acyl Alaninate
Does not weigh down
Light & pleasant to the touch

Amilite G Series

Acyl Glycinate
Cleanses deep down to the pores
Light & clean



The texture of the foam

Foam formation

A brilliant white cream-like foam feels wonderful!

With a beautiful foam, you get a combination of soft creaminess and white fluffiness resulting in a wonderfully airy textural experience.

The **creaminess that you can feel** in the foam is linked to the foam stability. A stable foam also takes up more volume. So action taken to fix air bubbles is relevant here.

With **fluffiness** we mean fine porosity and besides the texture, also the appearance of the foam. Surfactants are an interesting factor here as they foam up quickly and are fine-pored.



The creaminess you can feel

Structural stability

When it comes to feeling the creaminess of the foam, an important aspect is **how quickly the foam that has been formed collapses again**.

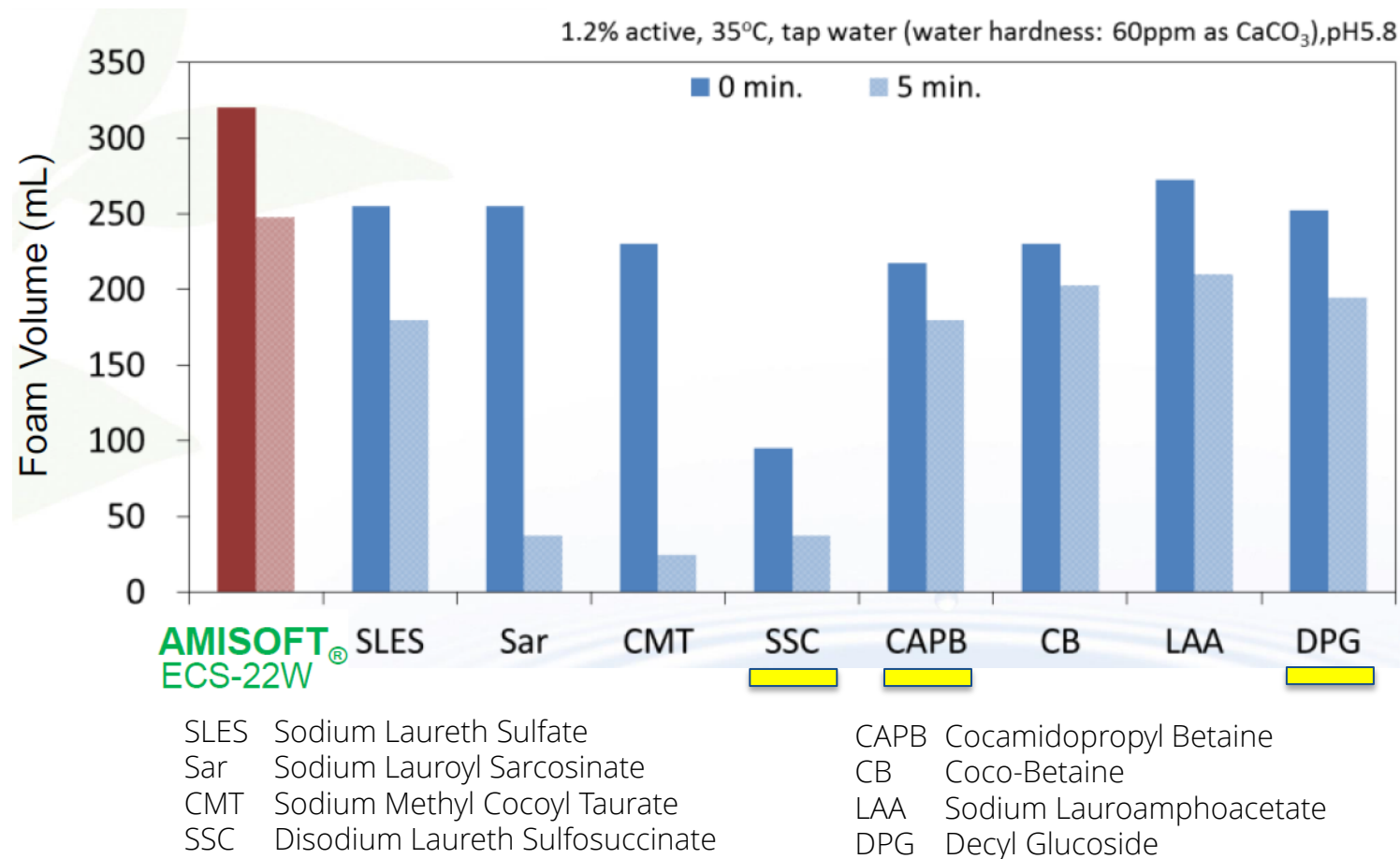
The longer it takes – i.e. the more stable the structure – the creamier it seems to feel.

We also talk about framework structures that fix the air bubbles. The longer a foam remains stable, the better the air-fixing property.

In literature on the subject, we often see a measurement of the immediately resulting foam volume and then another measurement 5 minutes later. In a comparative presentation, it can also be extremely interesting to show a foam stability measurement over a longer period of time.

Foam volume measurements

immediately and after 5 minutes



Visual foam stability

in a long-term comparison

- 10 pumps (5% surfactant, 95% water, adjusted to pH value approx. 6)



Cocamidopropyl
Betaine

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Disodium Cocoyl
Glutamate

Visual foam stability

After 2 minutes



CAPB

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Amisoft ECS-22W

Visual foam stability

After 4 minutes



CAPB

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Amisoft ECS-22W

Visual foam stability

After 8 minutes



CAPB

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Amisoft ECS-22W

Visual foam stability

After 15 minutes



CAPB

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Amisoft ECS-22W

Visual foam stability

After 30 minutes



CAPB

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Amisoft ECS-22W

Visual foam stability

After 1 hour 45 minutes



CAPB

Decyl Glucoside

Disodium Laureth
Sulfosuccinate

Amisoft ECS-22W

Amisoft ECS-22W

in short form

- INCI: Disodium Cocoyl Glutamate, Water
- Anionic surfactant, 30% clear solution
- Natrue- and COSMOS-compliant
- Ultra-mild, free of preservatives
- Cost-effective (with NaCl and free fatty acids)
- Excellent foaming properties at pH value 5.0 – 6.5
- Properties
 - creamy & fine-pored foam
 - excellent foam stability
 - nice to the touch (also when washing hair)

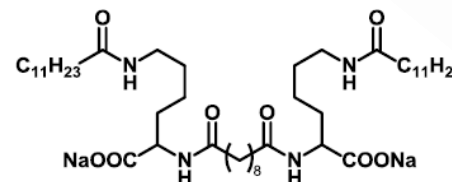


Foam booster I

Effect of Amisafe LL-DS-22

A new type of gemini surfactant as foam booster
in the form of a 10% clear, watery solution

INCI: Disodium Sebacoyl Bis-Lauramidolysine



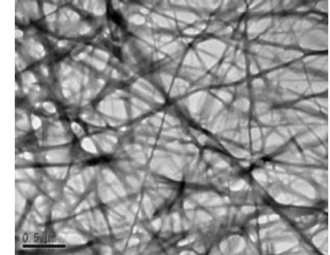
AMISAFE®
LL-DS-22



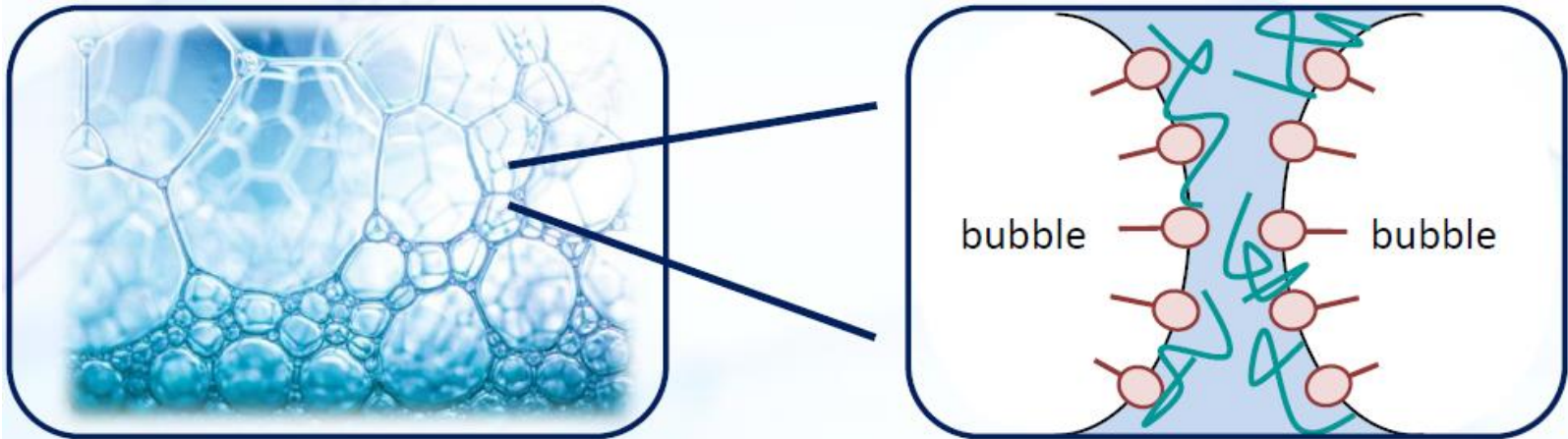
Foam booster I

Effect of Amisafe LL-DS-22

By pH regulation, the Amisafe molecules form into a fibre network. This stabilizes air bubbles and consequently increases foam volume.



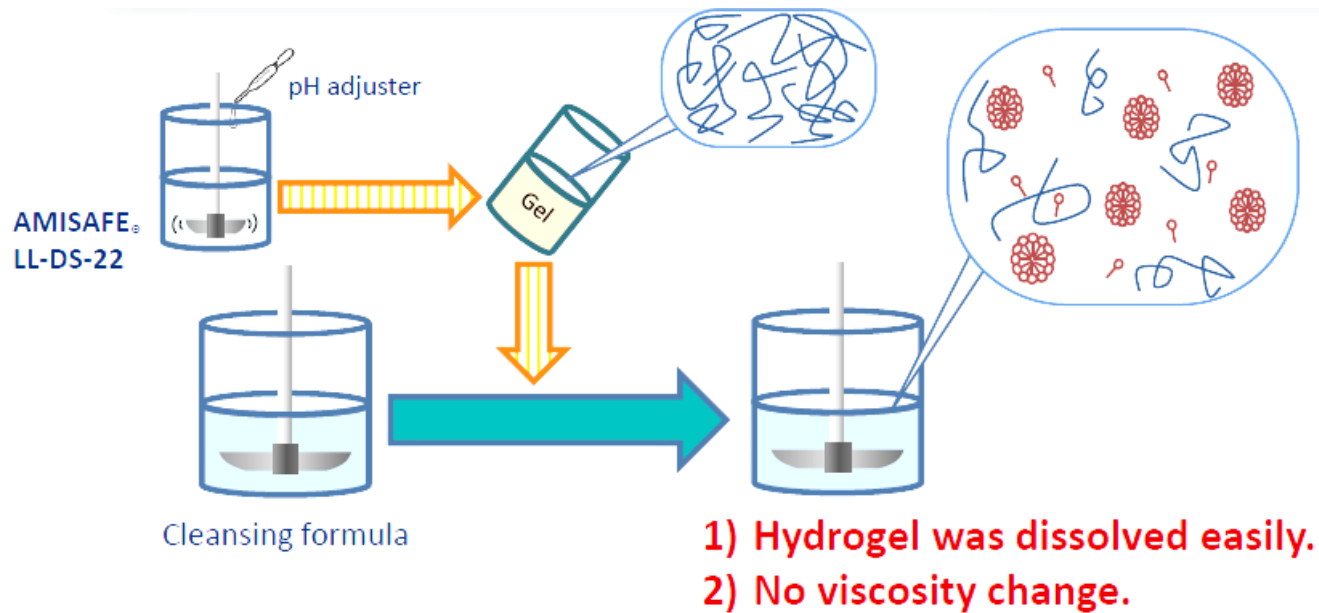
Transmission Electron Microscope



Foam booster I

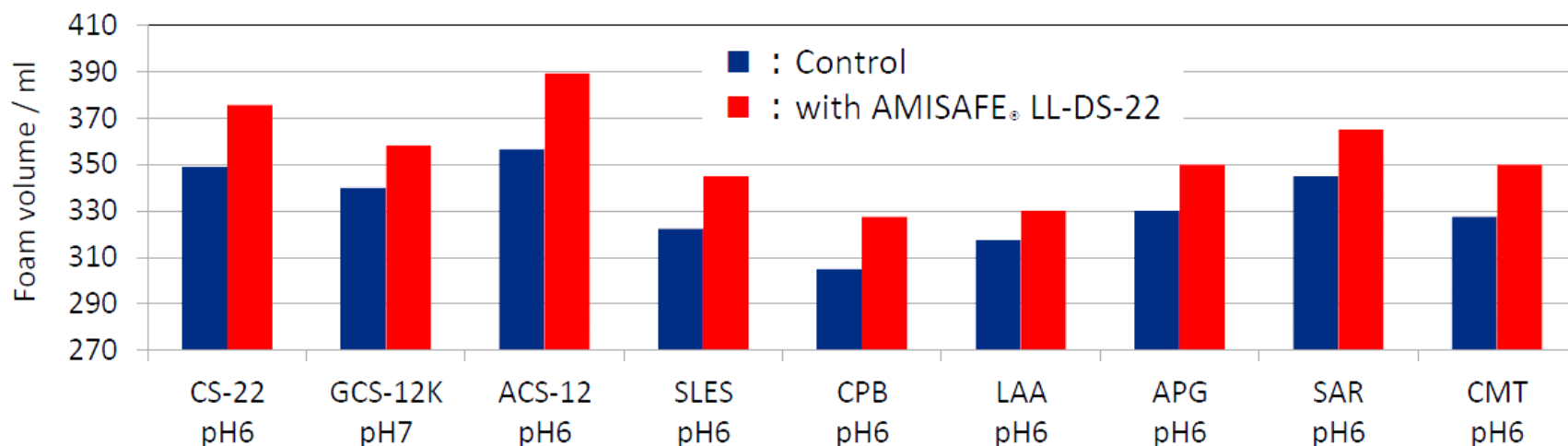
Effect of Amisafe LL-DS-22

The processing is as follows:



Foam booster I

Effect of Amisafe LL-DS-22



		Control	AMISAFE LL-DS-22 0.05% Active
A 1%(A.I.) Gel	AMISAFE LL-DS-22 (10%)	0	0.5
	Citric acid	0	pH 6.5
	Water	0	5
B Surfactant Solution	Surfactants	10.0 (A.I.)	10.0 (A.I.)
	Citric acid	pH adjustment	pH adjustment
	Water	balance	balance
	Total	100.0	100.0

SLES : Laureth Sulfate
 CPB : Cocamidopropyl Betaine
 LAA : Lauroamphoacetate
 APG : Decyl Glucoside
 SAR : Lauroyl Sarcosinate
 CMT : Methyl Cocoyl Taurate

Foam booster II

Effect of xanthan gum

The addition of xanthan gum (Keltrol CG-SFT) can also affect the foam volume and the foam texture (from left to right):

- 5% Amisoft ECS-22W and 95% demineralized water
- + 0.1% xanthan: excellent volume & creaminess
- + 0.2% xanthan: foam becomes brittle and produces larger bubbles



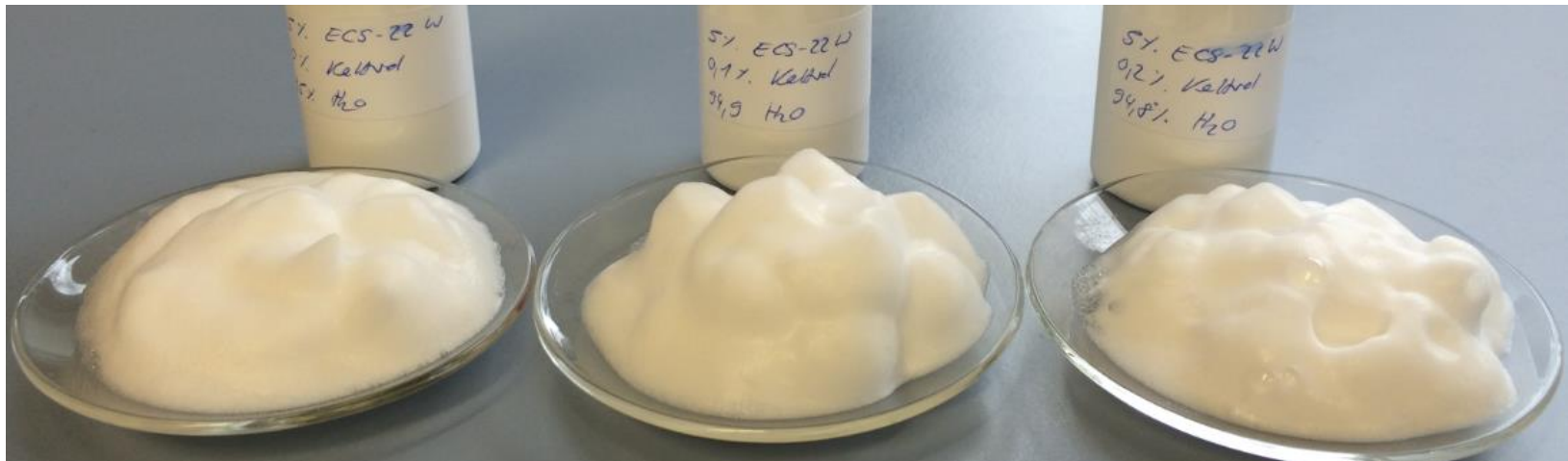
5% Amisoft ECS-22W

+0.1% Keltrol

+0.2% Keltrol

Foam booster II

Effect of xanthan gum



+0 % xanthan gum



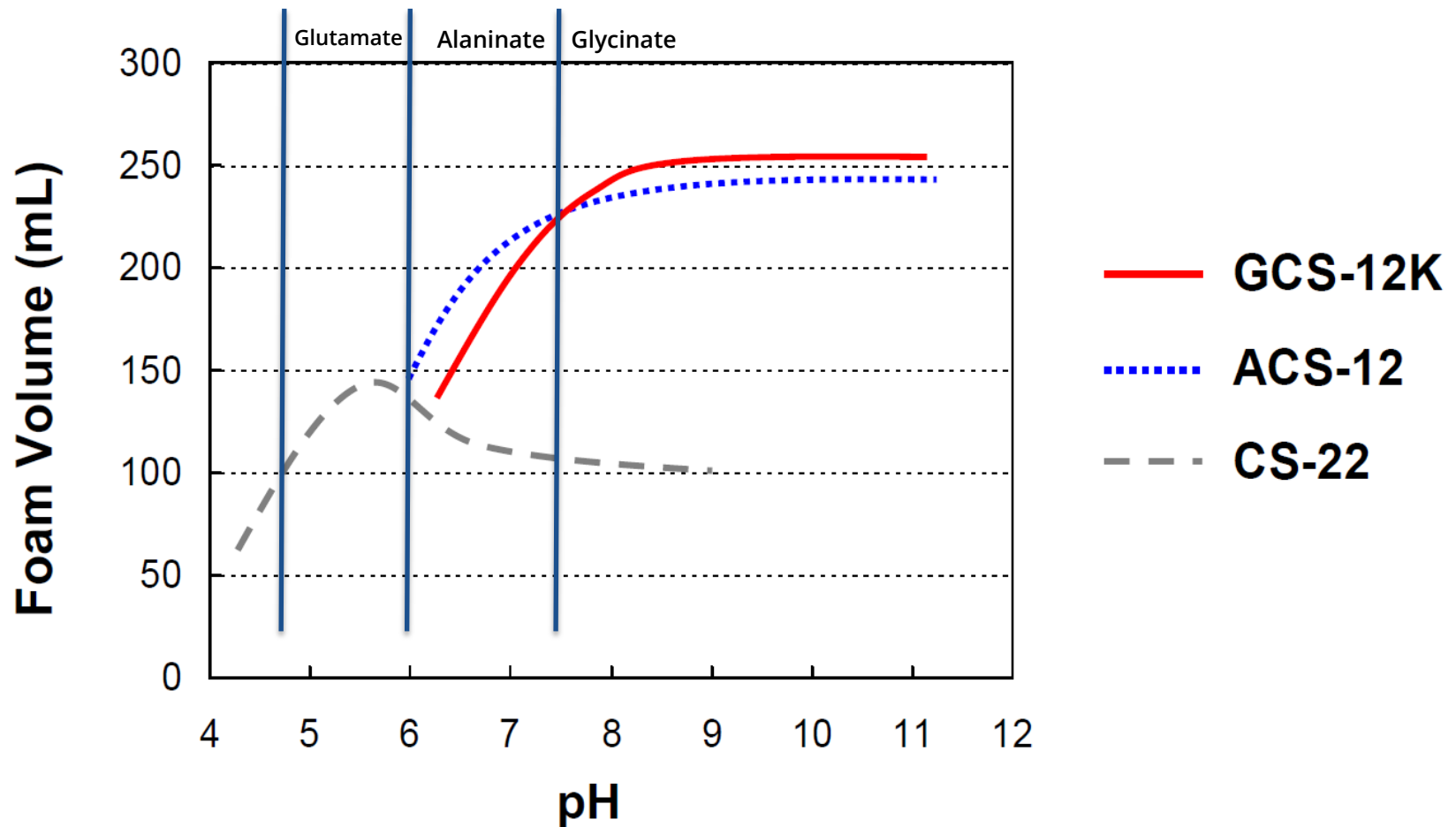
+0.1 % xanthan gum



+0.2 % xanthan gum

The relevance of the pH value

Glutamate, Alaninate or Glycinate?



Amilite A-Series

Acyl Alaninate

Name

Amilite ACS-12

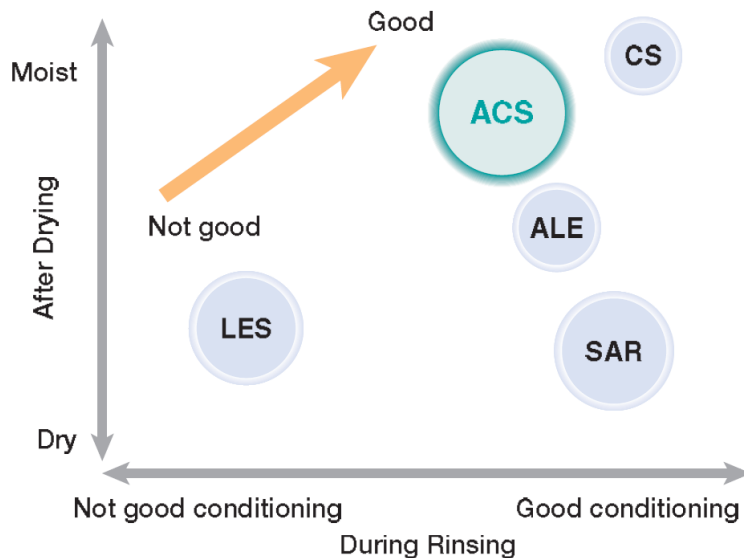
Conc.

30%

INCI

Sodium Cocoyl Alaninate

● Sensory Image Map

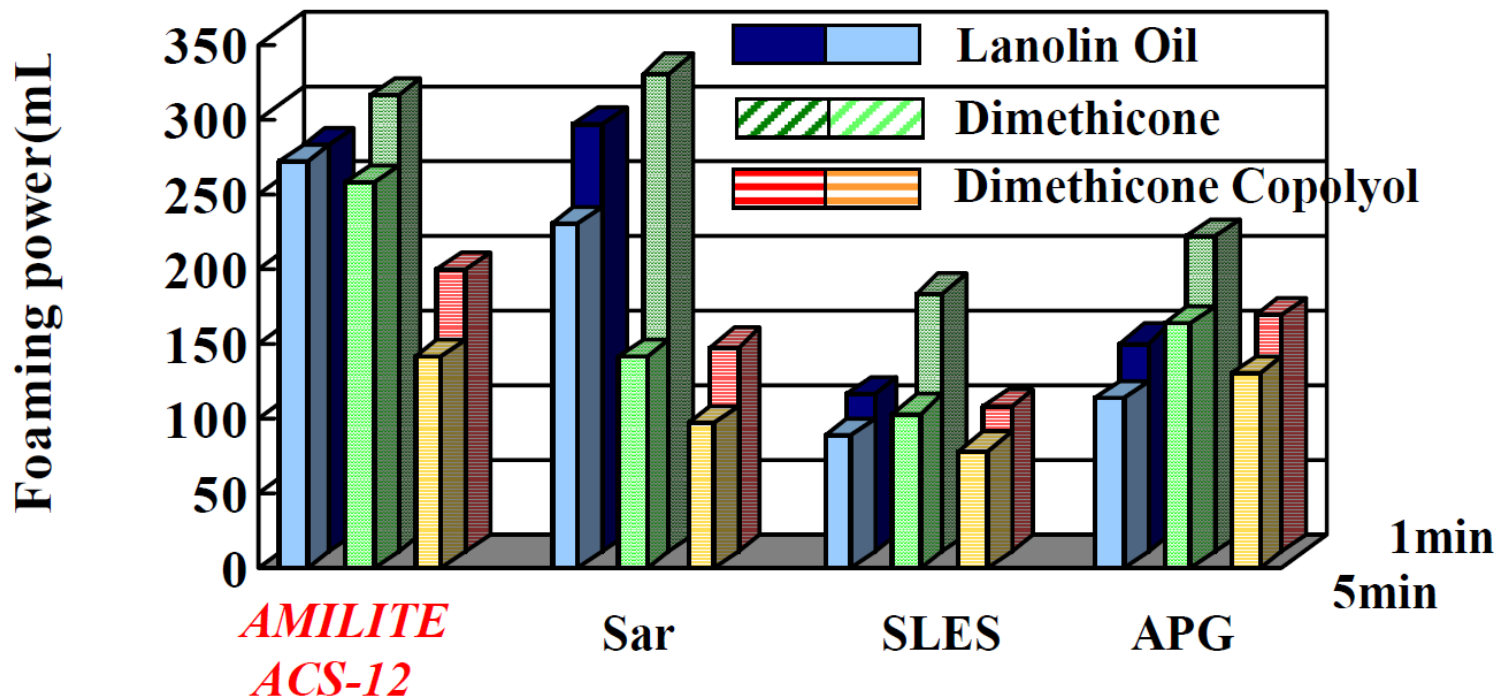


ACS: AMILITE ACS-12
CS: AMISOFT CS-22
LES: Sodium Laureth Sulfate
ALE: Sodium Lauroyl Methylaminopropionate
SAR: Sodium Lauroyl Sarcosinate

Amilite A Series

Acyl Alaninate

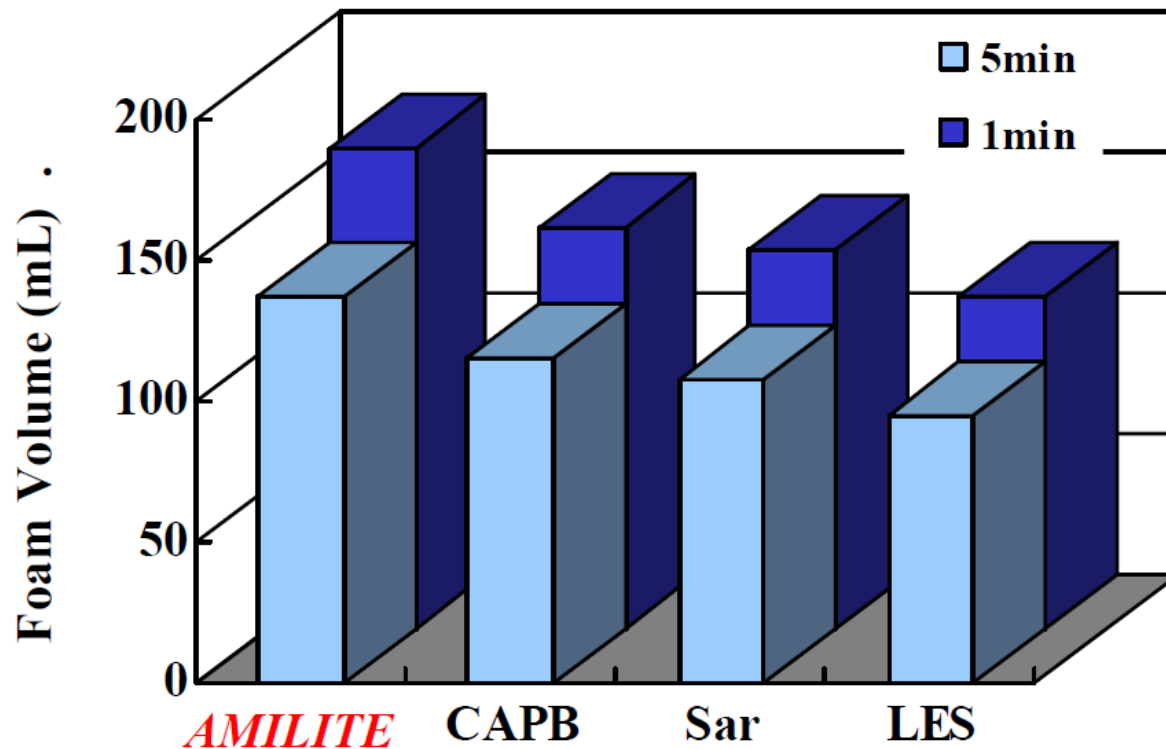
**Mixer method, Surfactant concentration 1.0wt% (active),
30°C, Additive oils 0.6wt% (active)**



Amilite A Series

Acyl Alaninate

Mixer method, 0.5wt% (active), pH6.5,
30°C, Water Hardness: 300ppm as CaCO₃



Amilite G Series

Acyl Glycinate

<u>Name</u>	<u>Conc.</u>	<u>INCI</u>
Amilite GCK-12H	30%	Potassium Cocoyl Glycinate
Amilite GCS-12K	30%	Sodium Cocoyl Glycinate
Amilite GCS-11	100%	Sodium Cocoyl Glycinate

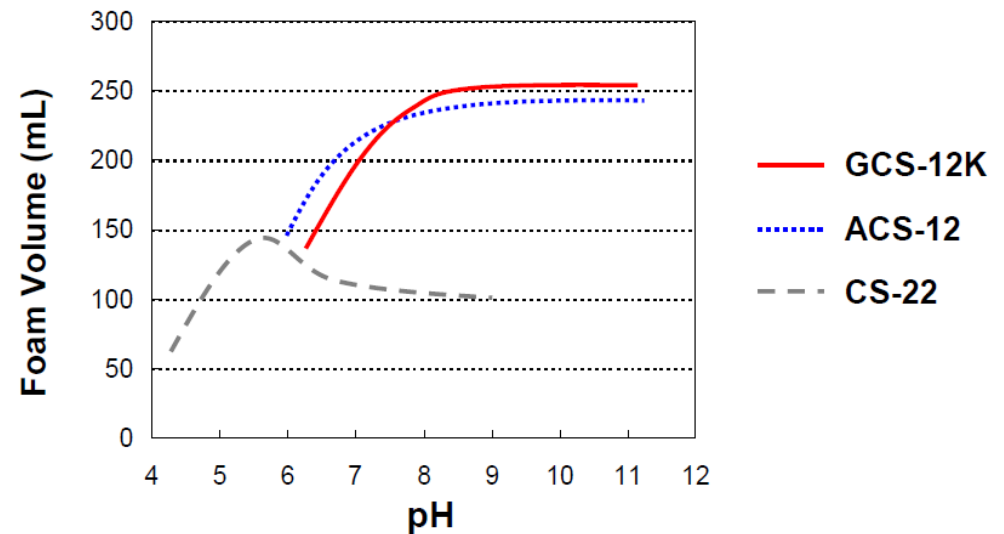
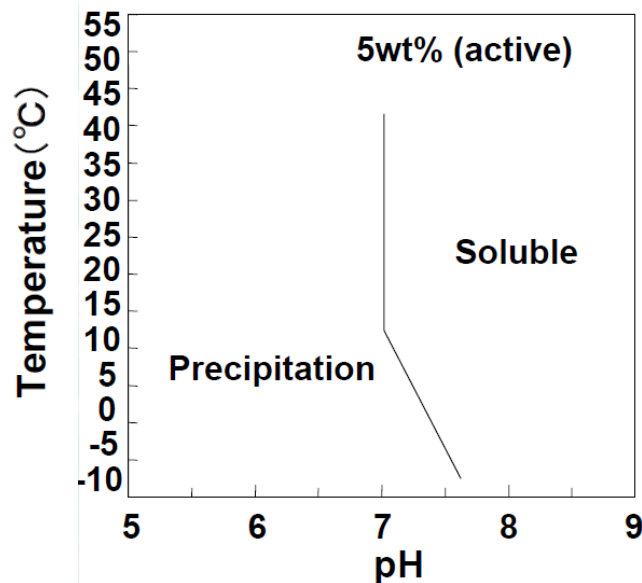
The potassium salt demonstrated better water solubility than the sodium salt.

- GCS-12K is therefore more suitable for paste formation (wash cream)
- GCK-12H imparts creaminess in the background but the viscosity of the formula is controlled with hydrocolloids (creamy body wash).

Amilite GCS-12K

Precipitation through pH reduction

In accordance with the relatively poor water solubility, a fall in the pH value causes instant precipitation which leads to the formation of a paste. The foam strength also declines with a decrease in the pH value. However, there is a good wetting effect on water contact = cleansing without foam volume.



Beard wash cream

for tube

Designer Stubble Wash Cream

St	Substance	INCI Name USA	% w/w
1	Water demin.	Water	56.30
	Dermosoft MCA Variante	Dipropylene Glycol, Caprylyl Glycol, Glyceryl Caprylate	1.00
2	Keltrol CG-SFT	Xanthan Gum	0.50
3	Amilite GCS-12K	Sodium Cocoyl Glycinate, Water	35.00
4	Amisoft CS-22	Sodium Cocoyl Glutamate, Disodium Cocoyl Glutamate, Water	3.00
5	Sensual Flower	Fragrance	0.70
6	Sodium Chloride	Sodium Chloride	1.50
7	Citric Acid 100%	Citric Acid	2.00

pH value: 5.0 - 5.5



Shower cream

for bottle / tube

Body Wash <Pearl>

DB-SW-15A-FA

	(wt%)
A SODIUM LAURETH SULFATE (70%)*1	7.20
AMILITE GCK-12H (30%)	10.00
SODIUM COCOYL ISETHIONATE*2	3.30
GLYCERINE	1.00
SODIUM CHLORIDE	1.00
PRESERVATIVE	q.s.
WATER	balance
B HYDROXYPROPYL STARCH PHOSPHATE	5.00
C PETROLATUM*4	5.00
D COCAMIDOPROPYL BETAINE (30%)*5	17.00
E CITRIC ACID (20% aq.)*6	0.40
F FRAGRANCE	q.s.
	100.00
pH	7.0
Viscosity	25,000~36,000mPa·s



Natural shower emulsion

for bottle / tube

St	Substance	INCI Name USA	% w/w
1	Water demin.	Water	44.50
	Dermosoft 1388 ECO	Glycerin, Water, Sodium Levulinate, Sodium Anisate	3.00
2	Genuvisco CG-131	Chondrus Crispus (Carrageenan)	1.00
	Keltrol CG-SFT	Xanthan Gum	0.30
3	Amisoft ECS-22W	Disodium Cocoyl Glutamate	20.00
	Plantacare 2000 UP	Decyl Glucoside, Water	7.00
	Sunflower Oil, organic	Helianthus Annuus (Sunflower) Seed Oil	17.00
	Virgin Prunus Oil	Prunus Domestica Seed Extract	3.00
	Dermofeel MT 70 non-GMO	Tocopherol, Helianthus Annuus (Sunflower) Seed Oil	0.20
4	Water demin.	Water	2.00
	Citric Acid 100%	Citric Acid	2.00



Natural shower emulsion

for pump foamer / aerosol

Phase	Substance	INCI Name EU	% [w/w]
A	Water demin.	Aqua	84.00
	Citric Acid sol.10%	Citric Acid, Aqua	0.40
	Glycerin 86%	Glycerin	3.00
B	LaraCare A-200	Galactoarabinan	0.50
	Genuvisco CG-131	Chondrus Crispus	0.10
C	Sisterna SP70-C	Sucrose Stearate	1.00
	Cetiol OE	Dicaprylyl Ether	3.00
	Tegosoft OP	Ethylhexyl Palmitate	5.00
	Verstatil PC	Phenoxyethanol, Caprylyl Glycol	1.00
D	Amisoft CS-11	Sodium Cocoyl Glutamate	2.00



Natural hair shampoo transparent

for bottle

A	AMISOFT ECS-22 W(30%)	10.0
	DECYL GLUCOSIDE(50%)*1	10.0
	GLYCERYL CAPRYLATE*2	0.2
	DISODIUM COCO-GLUCOSIDE CITRATE*3	5.0
B	XANTHAN GUM*4	0.5
	Water	balance
C	CITRIC ACID 10% aq.*5	2.8
D	CAE	0.2
	Water	5.0

- | | | |
|---|-------------------|----------------|
| 1 | Plantacare 2000UP | BASF |
| 2 | Dermosoft GMCY | Dr. Straetmans |
| 3 | Eucarol AGE EC | Lamberti |
| 4 | Keltrol CG-SFT | CP Kelco |

pH value: 5.8
Viscosity: 5,000 mPa s



Natural facial wash powder

for the jar / sachet

	(wt%)
AMISOFT LS-11	15.0
AMISOFT MS-11	15.0
MANNITOL	10.0
TALC	20.0
ZEA MAYS (CORN) STRACH	23.5
GLUCOSE	15.0
AMIHOPE LL	1.0
AGAR	0.5
	100.0



pH value: 5.1 (1% aq.)

This foam is a dream...

Many thanks for your attention!

