

# “Syndet” & Combo soap bar



# Agenda

- “Water-less” trend + definitions
- Combo Soap bar – boosting solutions
- Lathanol<sup>®</sup> LAL Coarse – Solid ingredient!
- Syndet prototypes



# Trends

**“Dead Philippines whale had 40kg of plastic in stomach”  
– BBC News**

**“Half of dead baby turtles found by Australian scientists  
have stomachs full of plastic” – The Independent**

**“Floating trash collector has setback  
in Pacific Garbage Patch” – The National Geographic**

Growing attention towards plastic pollution and consequences on the environment

- More recycling of discarded plastic items
- Reduction of the use of plastic packagings

# Definitions

	Soap	SYNDET	Combo soap
<b>Definition</b>	Classic soap	SYNthetic DETergent = made of surfactants <i>"Soap-free soap"</i>	Hybrid system: association of soap with syndets
<b>Type / Origin of ingredients</b>	Oils (mostly Vegetal)	Oils / Fats / Petroleum...	All
<b>Process used</b>	Saponification	All chemistries	All
<b>pH of product</b>	High (8-10)	Adjustable Commonly 6-7	Adjustable
<b>Pros</b>	<ul style="list-style-type: none"> <li>• Natural</li> <li>• Simple / old process</li> <li>• High glycerin</li> <li>• Economical</li> </ul>	<ul style="list-style-type: none"> <li>• High foam</li> <li>• Less irritation</li> <li>• Wide range of additives</li> </ul>	Maximize cleaning while minimizing irritation
<b>Cons</b>	<ul style="list-style-type: none"> <li>• Drying on the skin</li> <li>• Poor color</li> </ul>	<ul style="list-style-type: none"> <li>• Synthetic / Chemical</li> <li>• Processing Challenges</li> <li>• Expensive</li> </ul>	Not 100% natural

# Combo Soap Bar

## Soap bar improvement

### Objectives

1. To improve soap bar foam volume in hard water with limited impact on the formulation cost
2. Skin feel improvement with selected emollients

### Foaming power evaluation

#### *Shaker foam test*

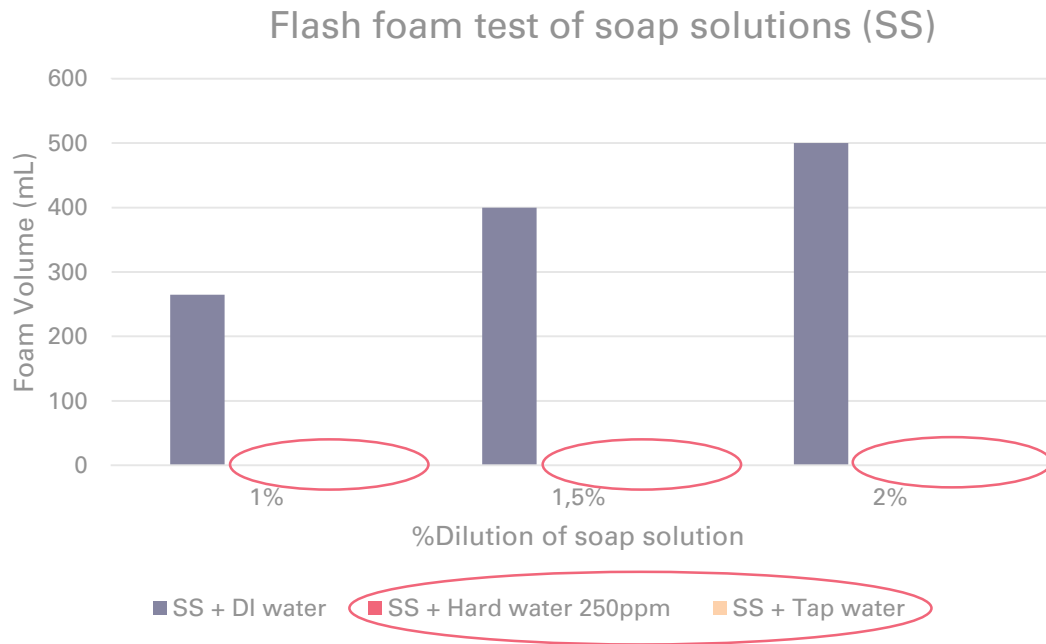
- 200mL solution under high shear in measuring flask during 30sec
- Foam volume is measured (flash foam)

*Ratios indicated are w/w % of commercial product*



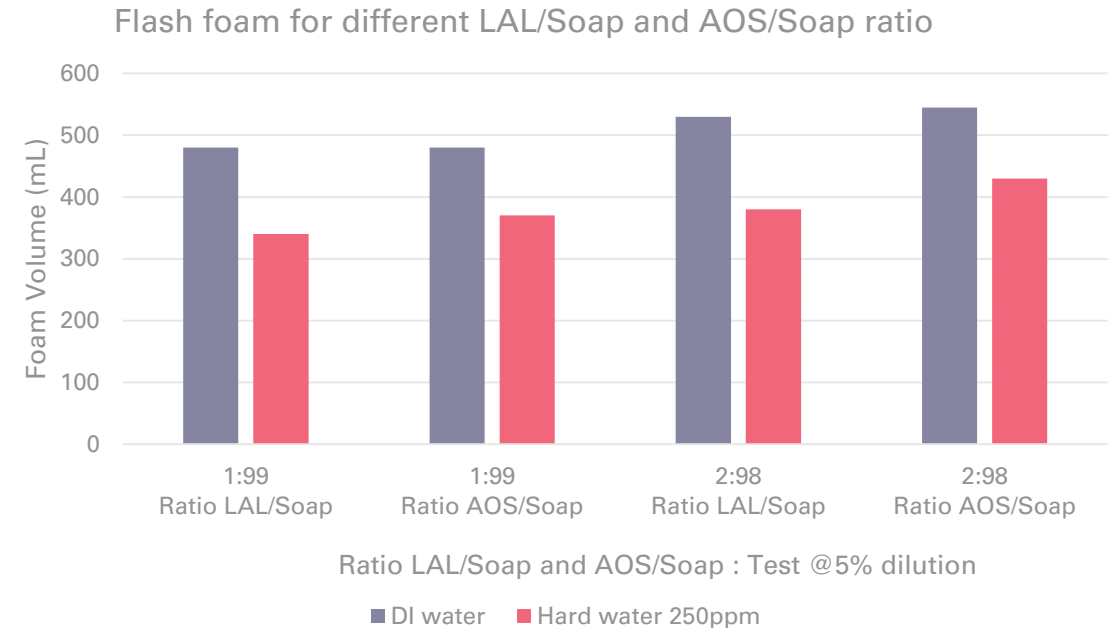
# Foam volume improvement with Bio-Terge® AS90 Coarse and Lathanol® LAL Coarse

Foaming performance of soap depending on water hardness



Soap doesn't foam in hard or tap water whatever the concentration

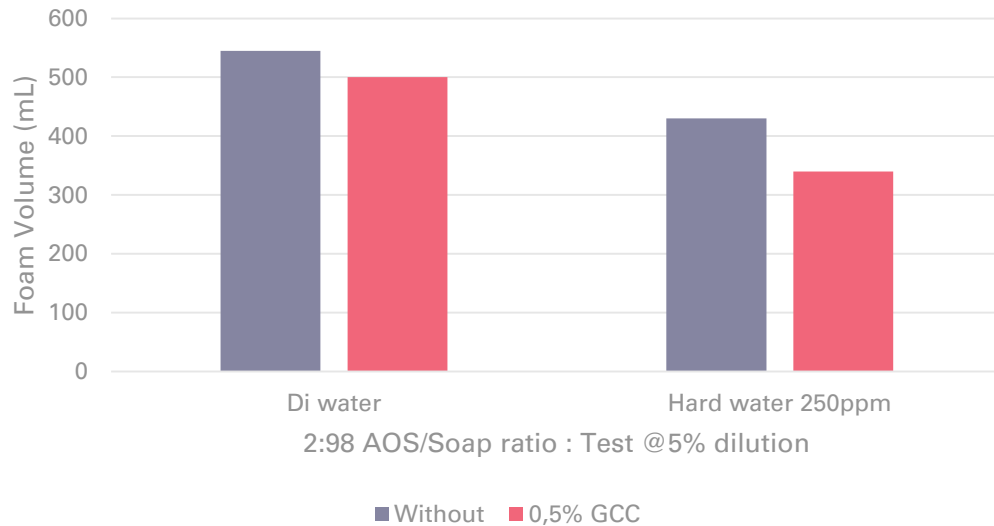
**Foaming performance Soap with Bio-Terge AS90 Coarse (AOS) and Lathanol LAL Coarse (LAL)**



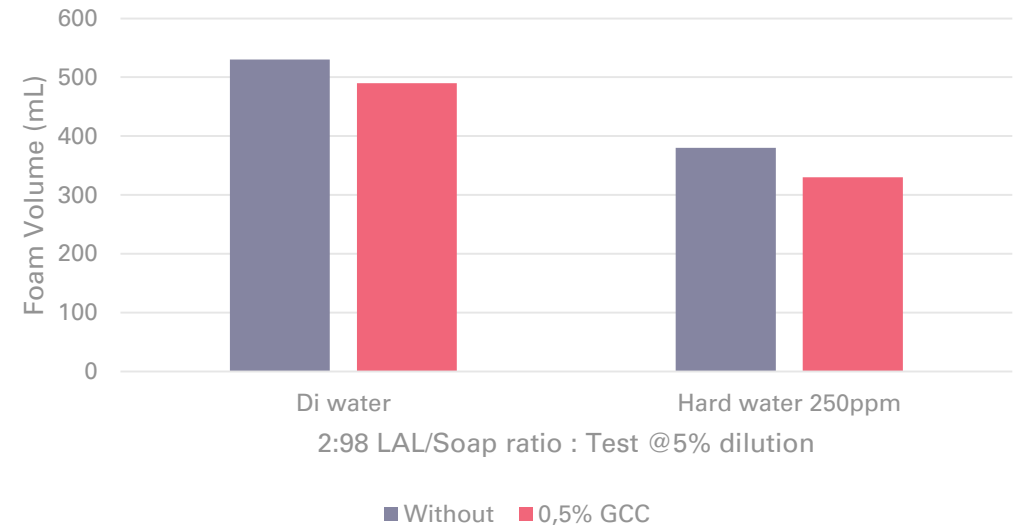
AOS and LAL are effective to boost foam properties in hard water (250ppm) at low concentration in a soap.

# Foam volume with additive Stepan-Mild® GCC

Flash foam test for 2:98 AOS/Soap ratio with  
GCC



Flash foam test for 2:98 LAL/Soap ratio with  
GCC



**Addition of Stepan-Mild® GCC has very small negative  
impact on foam volume of combo soaps...  
...but GCC will bring sensorial benefits!**

# Sensorial evaluation

## Skin feel enhancement thanks to additives

Internal panel test (4 persons)  
Hand wash with tap water – blind samples

<b>Reference (only soap)</b>	Good flash foam but not a creamy texture, mixed bubble size, a little dry skin feel left on the hands
<b>2% AOS</b>	Good flash foam but not creamy enough
<b>2% AOS + 0,5% GCC</b>	Good flash foam and creamy texture, silky and pleasant foam, not too dry skin feel left on the hands
<b>2% LAL</b>	Good flash foam and quite soft
<b>2% LAL + 0,5% GCC</b>	Good flash foam and creamy texture, mixed bubble size

**AOS** providing good foaming properties and excellent wetting

**Lathanol** providing good foaming and wetting, bringing soft after-feel

**Stepan-Mild GCC** avoid dry skin feel due to soap and surfactants



# LATHANOL® LAL Coarse

- INCI = Sodium Lauryl Sulfoacetate
- Powder form
- 65% active – BCI\* = 86
- Sulfate-free anionic surfactant  
*Can be seen as primary / secondary / additive*
- Features:
  - High quality lather / small bubbles, creamy feeling
  - Rinse-off / combo soap – foam booster (volume & quality)
  - Shampoo bar & soap –  
**one of the best solid surfactant of the market**



Shower trends:  
**Going packaging-free**

LATHANOL® LAL COARSE

**100%**

Powder  
Luxurious  
Ecocert certified  
China IECIC listed

**0%**

Alkyl / Alkyl Ether Sulfate  
Preservatives

Majority Bio-Based\* Surfactant  
(CEN/TS 17035:2017)

Bonus: hard water resistance  
(Combo Soaps)

**Stepan**   
Personal Care

\*bio-based means originating from animal, plant or marine material

# SYNDET Prototypes with Lathanol® LAL Coarse

**BUBBLES IN A BAR** 

**CABIN READY SHAMPOO!**

**Won't have to fit into the security check liquids bag...**  
(Almost) waterless formulation: less packaging, transportation and pollution/ concentrated surfactants.

- **BIO-TERGE® AS-90 Coarse:** High foaming, sulfate-free anionic surfactant.
- **LATHANOL® LAL Coarse:** Secondary surfactant with superior lather quality.
- **STEPAN MILD® GCC:** Used for foam boosting and conditioning.

INGREDIENTS	% W/W
<b>STEPAN MILD® GCC - Glyceryl Caprylate/Caprate</b>	<b>4,5</b>
NINOL® COMF-N - Cocamide MEA	27,0
Stearyl Alcohol	20,0
<b>BIO-TERGE® AS-90 Coarse - C14-16 Olefin Sulfonate</b>	<b>27,0</b>
<b>LATHANOL® LAL Coarse - Sodium Lauryl Sulfoacetate</b>	<b>21,0</b>
Lactic Acid (80%)	0,4
Fragrance ( <i>Miel</i> - Givaudan SA)	0,3

- 💡 (almost) waterless formula
- less transportation/pollution/packaging
- concentrated surfactants

# SYNDET Prototypes with Lathanol® LAL Coarse

Products	5233-038
<b>Stepanol DCFAS-P</b> (Sodium Coco Sulfate)	35
<b>Lathanol LAL Coarse</b> (Sodium Lauryl Sulfoacetate)	24
C16 Alcool	14,2
Myristic acid	3,5
<b>Stepan-Mild GCC</b> (Glyceryl Caprylate/Capratae)	3,5
Soybean oil hydro	17,7
VPC 508 (Carrageenan)	2
Fragrance (Verveine quatre quarts - Mane)	0,1



***Shampoo / shower soap***  
*Soap-like but*  
*with high naturality*  
*Affordable surfactant chassis*

***Shampoo bar***  
*High naturality*  
*Sulfate-free*  
*Excellent foam quality*



Products	5233-039
<b>Lathanol LAL Coarse</b> (Sodium Lauryl Sulfoacetate)	57
C18 Alcool	19
C16/18 fatty acid	11
C16 Alcool	6,5
Urea	3
<b>Stepan-Mild GCC</b> (Glyceryl Caprylate/Capratae)	3,2
Fragrance (Amande 058 - Mane)	0,3

# The fun part to finish: Hard to define but impossible to forget!

## Bubbly Bouncy Cloud

- Surprising cleanser, « mochi-like » texture
- Product can be applied directly onto wet face, just like a sponge
- Free from alkyl sulfates

### Technical keys:

- STEPAN-MILD® SL3-BA and its low salt content enables the obtention of a firm texture (carrageenans are sensitive to electrolytes)
- NINOL® CAA is salt-free and helps stabilize the oil while boosting foam



Phase	INCI	w/w %
A	Aqua/Water	Up to 100
	<b>STEPAN-MILD® SL3-BA</b> (Sodium Laureth Sulfosuccinate)	14,5
	<b>NINOL® CAA</b> (Dimethyl Lauramide/Myristamide)	4
B	Sunflower Oil	2
	Glycerol	9
	Glyceryl Stearate - <i>Oleon NV</i>	1,2
C	Carrageenan - <i>CP Kelco</i>	2,9
	Perfume - <i>Orchidée Cream, IFF</i>	0,2
	Phenoxyethanol - <i>Schülke &amp; Mayr SA</i>	0,3
	Titanium Dioxide, Ricinus Communis Oil, Polyhydroxystearic acid - <i>Hyteck SA</i>	0,25

תודה  
Dankie Gracias  
Спасибо شكراً  
Merci Takk  
Köszönjük Terima kasih  
Grazie Dziękujemy Děkojame  
Ďakujeme Vielen Dank Paldies  
Kiitos Täname teid 谢谢  
**Thank You** Tak  
感謝您 Obrigado Teşekkür Ederiz  
Σας Ευχαριστούμ 감사합니다  
ඔබට  
Bedankt Děkujeme vám  
ありがとうございます  
Tack

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