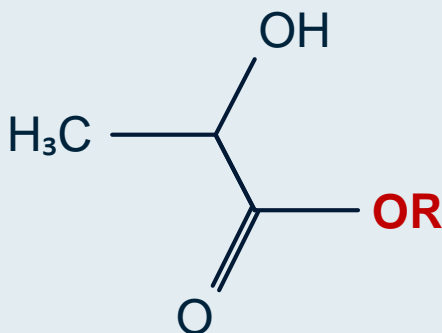


## COSMACOL ELI



A Multifunctional Additive for Rinse off Products

## Chemical structure



**R = mono-branched primary C12-C13-Alkyl**

COSMACOL ELI is the lactic acid ester of mono branched primary C12/13 alcohol isomers

### **INCI:**

C12-13 Alkyl Lactate

### **Properties:**

Appearance at 25°C: clear liquid

# COSMACOL ELI Properties



COSMACOL ELI is a multifunctional emollient with several remarkable properties:

Exhibits mildness properties

Improves skin barrier

Restores skin lipid film

Reduces skin irritation potential caused by surfactants

Support the thickening effect of NaCl

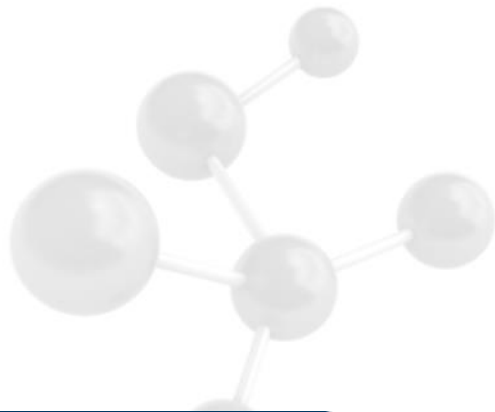
Allows Cocamide DEA free products

To evaluate the effect of COSMACOL ELI the following tests were carried out:

Patch test (Finn Chamber)

Flex wash test

Sebumetry and skin re-fatting test

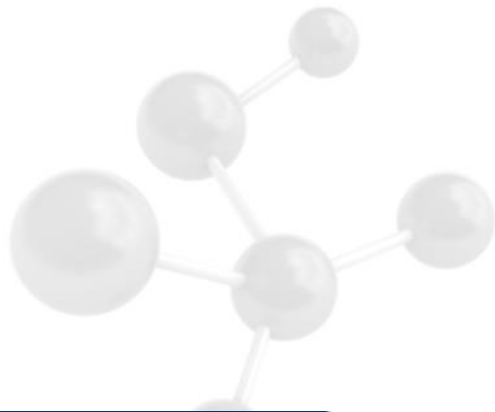


## Tested surfactants

- Sodium Laureth 2 EO Sulfate (SLES) - 9%
- Ammonium Lauryl Sulfate (NH4LS) - 9%
- SLES/NH4LS = 60/40 mixture

## Mildness agents

- Cocamidopropyl Betaine (LB) - 2%
- Decyl Glucoside (APG) - 2%
- COSMACOL ELI (ELI) - 0.7%

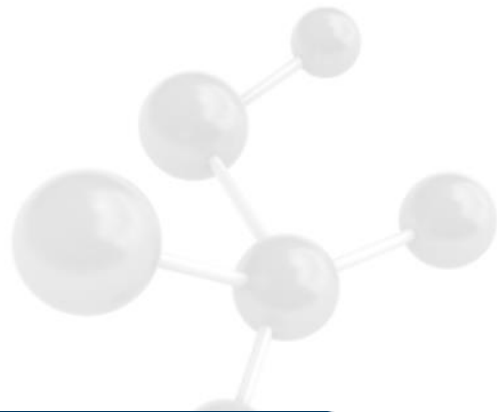


# Patch Test – Procedure

**Each sample was tested on 20 Caucasian males and females, 18-53 years old**

- Samples dilution: 3.5 % anionic surfactant
- Finn chambers 50 mm<sup>2</sup>, 20ml, twice for each sample, on back or forearm skin
- Skin irritation evaluated after 48h application
- Scoring:

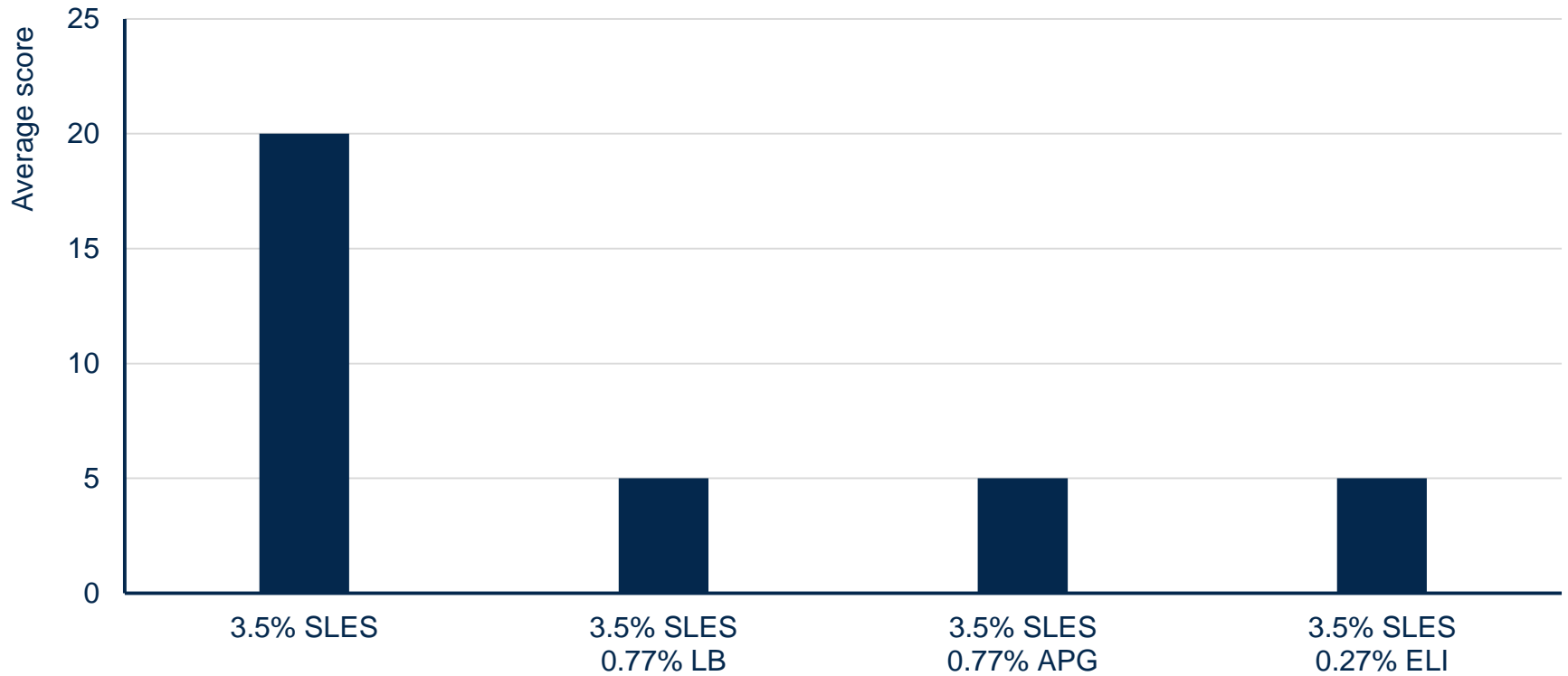
0-10	None
10-30	Low
30-50	Medium
50-80	High
>80	Very high



# Patch Test: Results



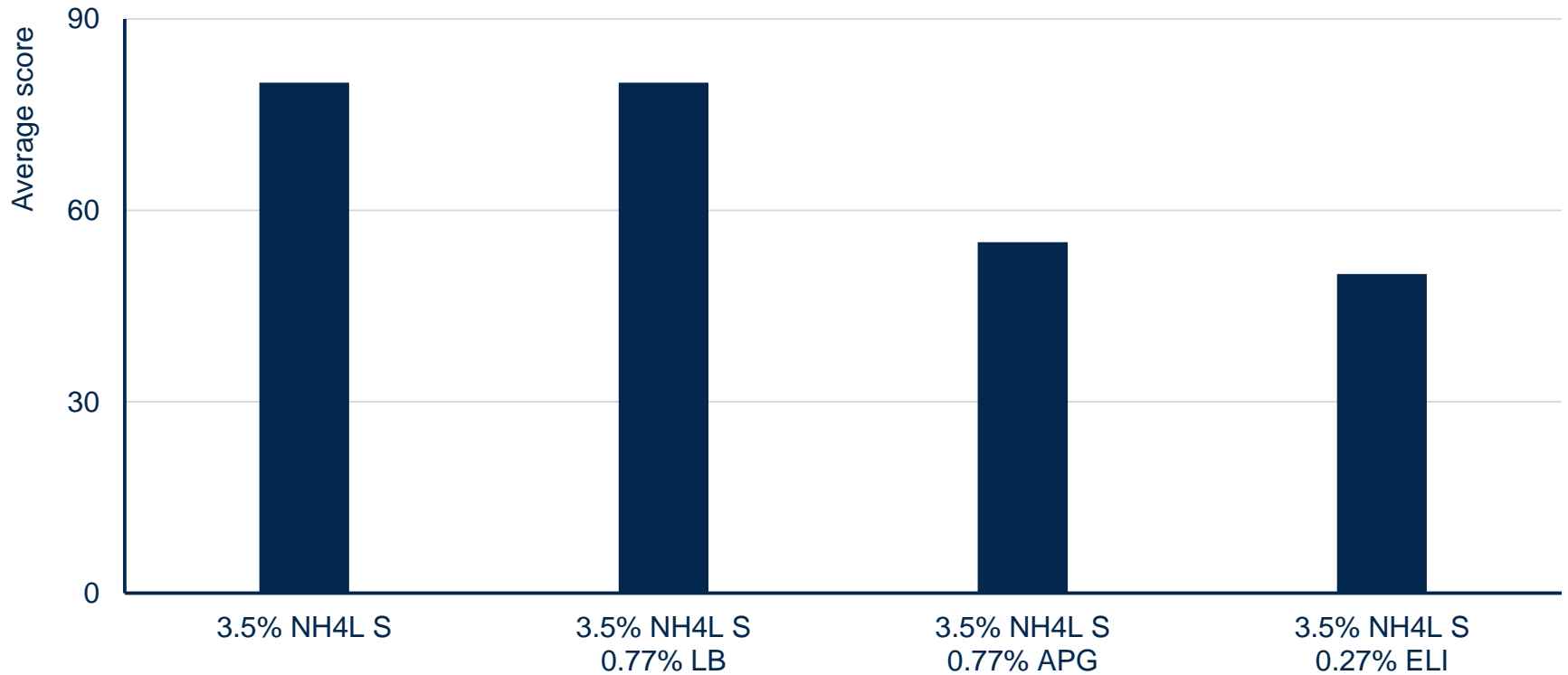
## Sodium Laureth-2-Sulfate



# Patch Test: Results



## Ammonium Lauryl Sulfate

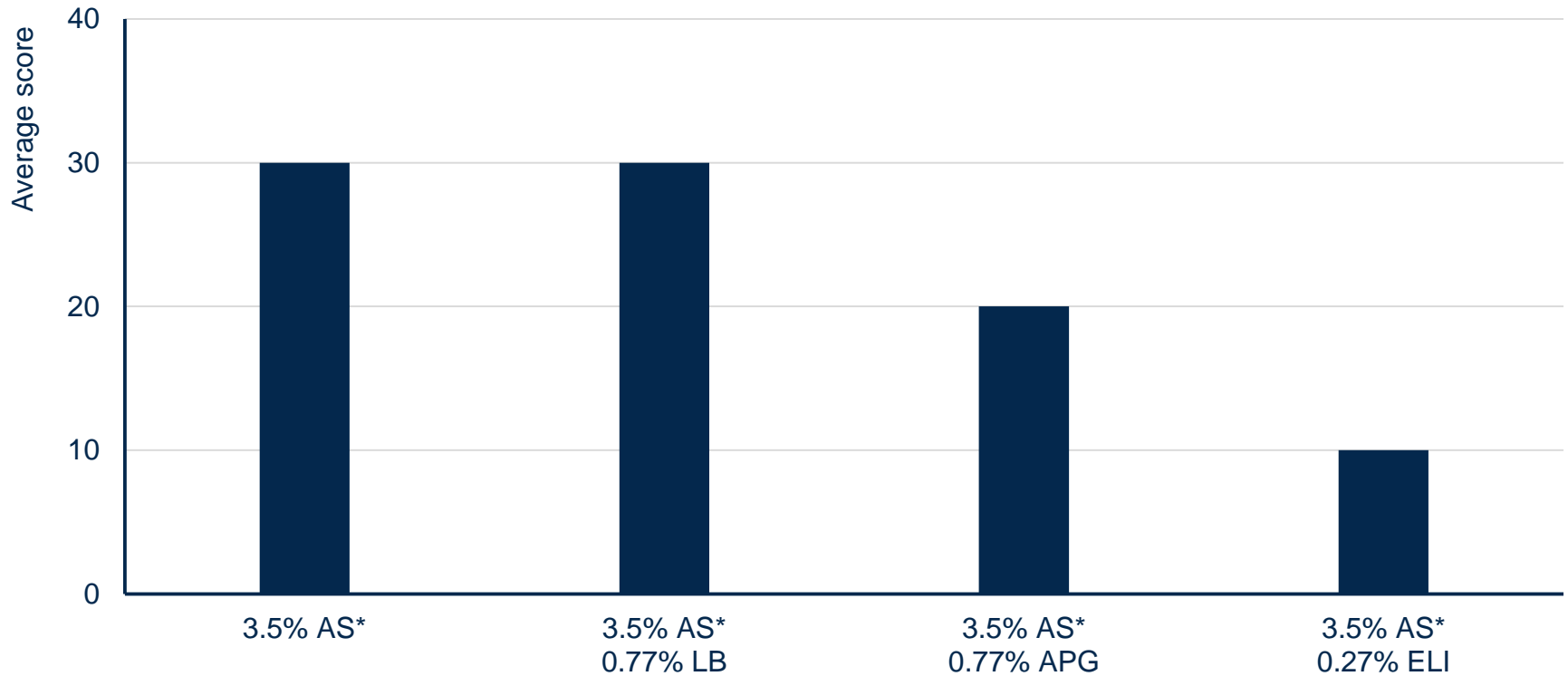




# Patch Test: Results



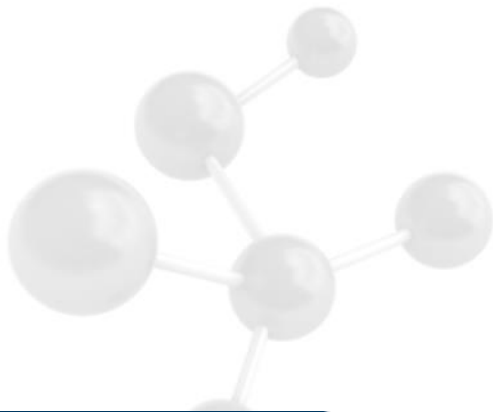
## Sodium Laureth-2-Sulfate/Ammonium Lauryl Sulfate (60/40 wt)



\* AS: anionic surfactant mixture

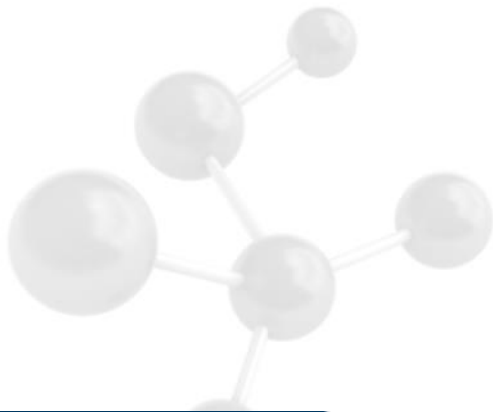
COSMACOL ELI is an efficient agent to reduce the skin irritation of anionic surfactants

COSMACOL ELI shows remarkable activity even at lower concentration than other commonly used mildness improving surfactants like Betaine or APG

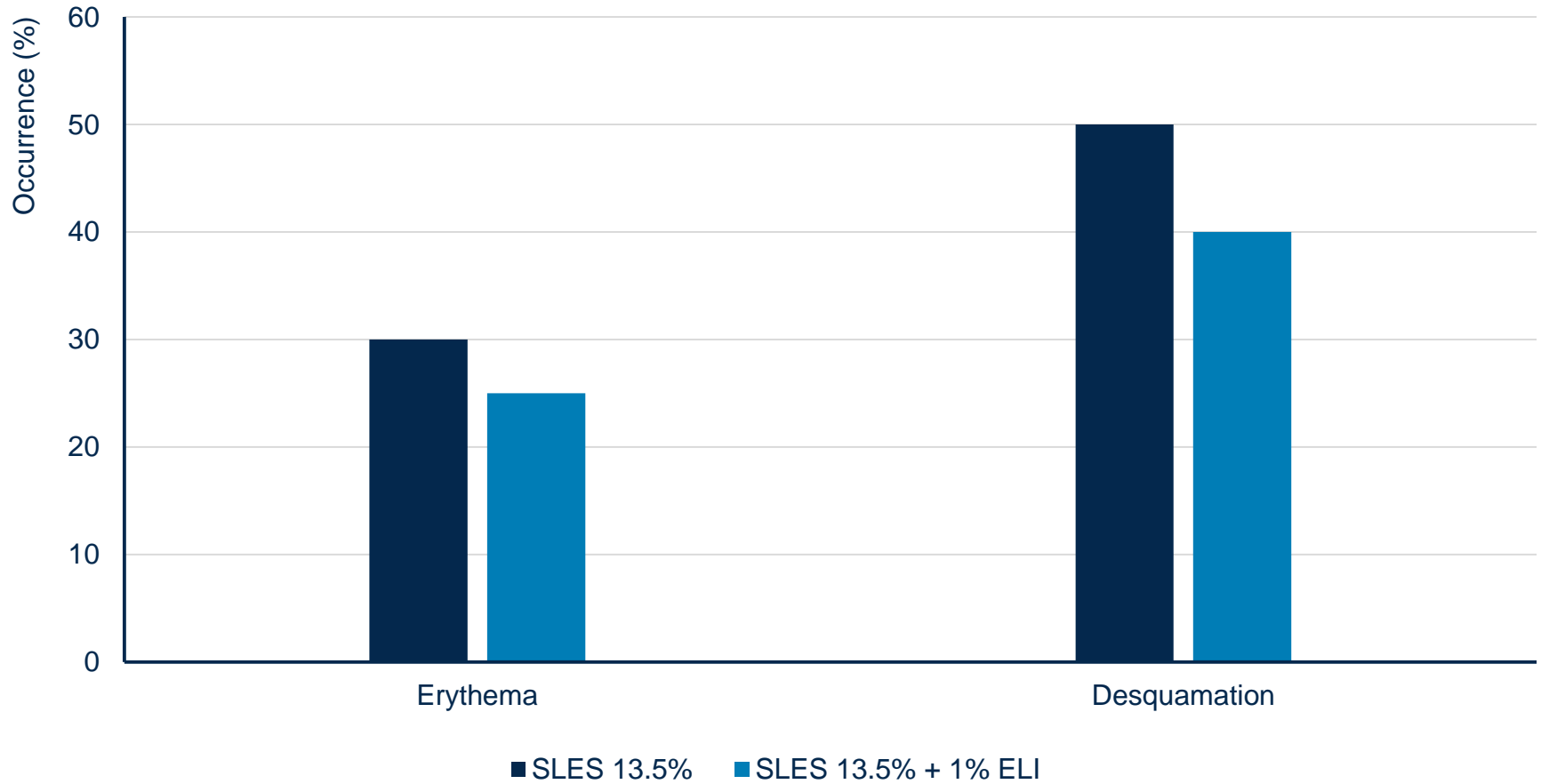


# Flex Wash Test – Procedure

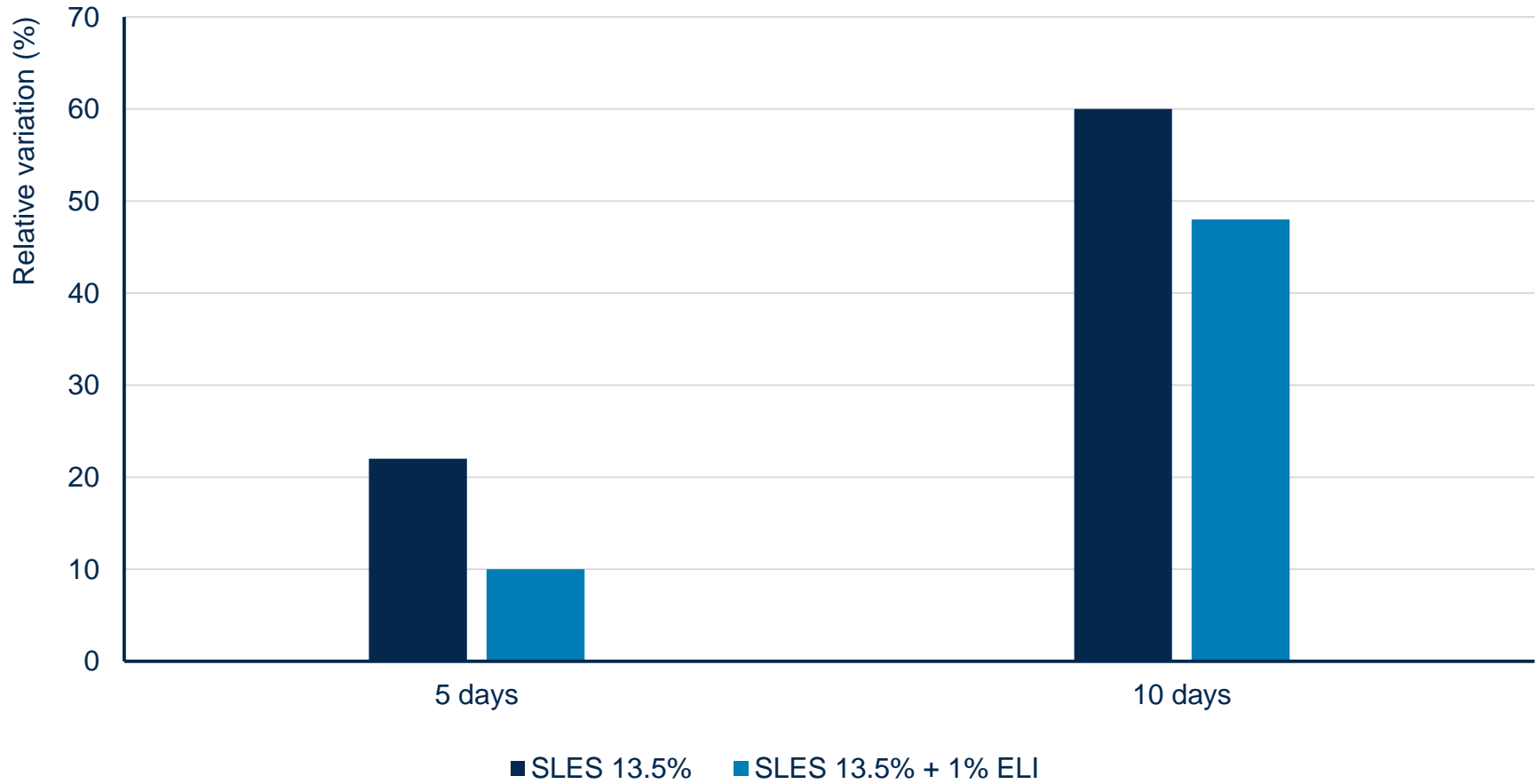
- 20 volunteers (male and female)
- Application of SLES 13.5 wt % with and without 1% COSMACOL ELI on the forearm skin
- Test time: 10 days
- Three application/day; 1 minute of application and wash-off
- Evaluated parameters:
  - Erythema and Desquamation (by assessors)
  - TEWL (after 5 and 10 days)
  - Corneometry (after 5 and 10 days)



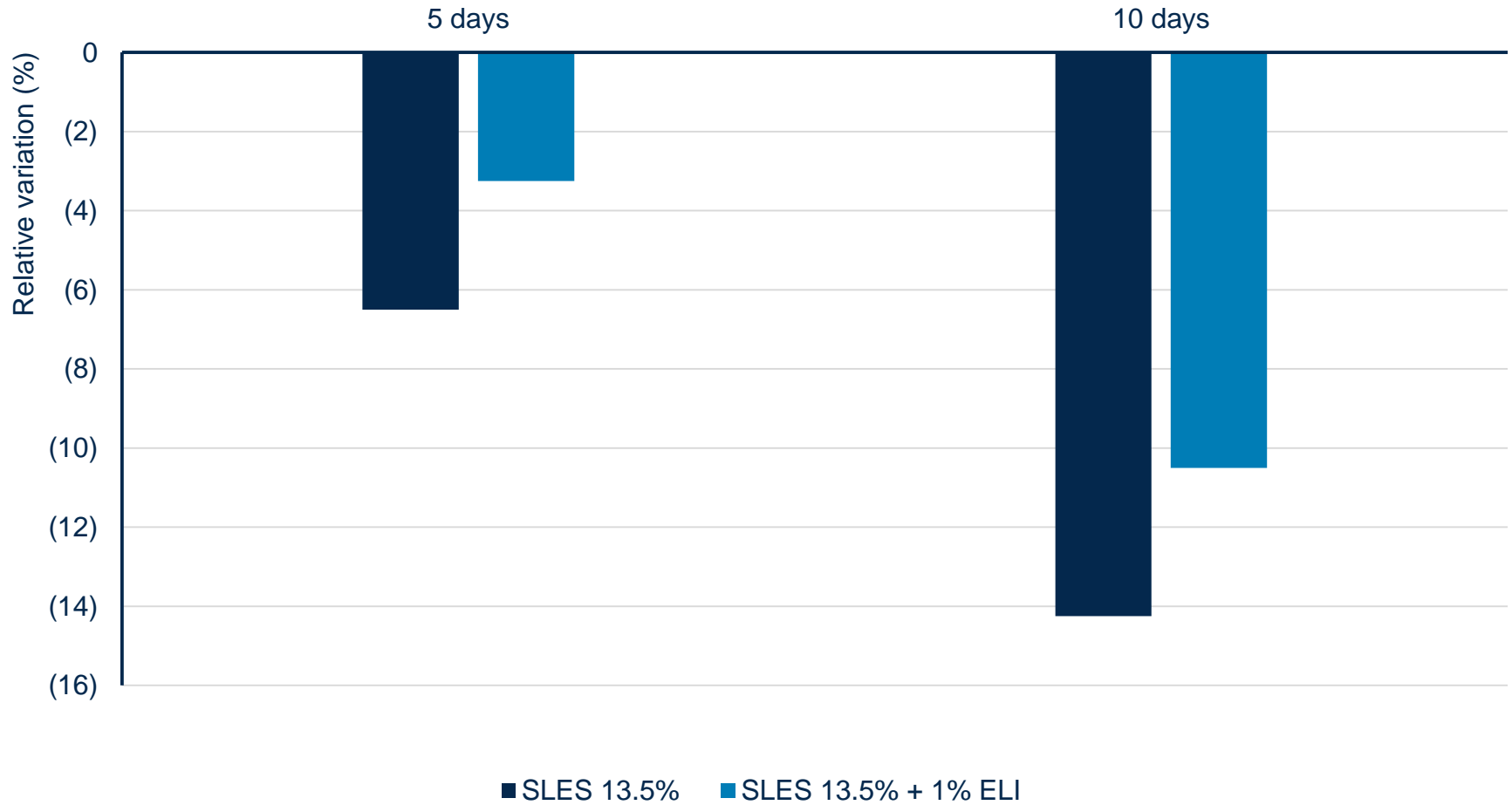
# Flex Wash Test – Assessor Evaluation (10 days)



# Flex Wash Test – TEWL



# Flex Wash Test – Corneometry



# Flex Wash Test – Summary

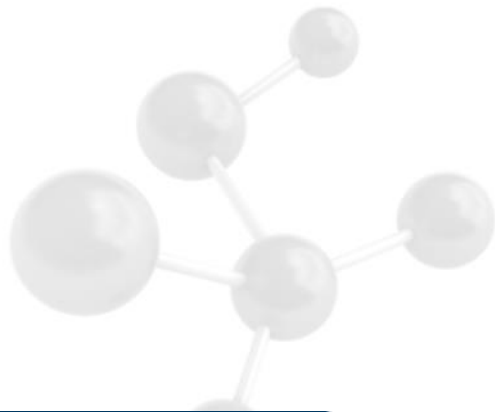


Effectiveness of COSMACOL ELI as SLES mildness agent is confirmed by long-term flex wash test, in terms of reduction of:

Erythema and desquamation

TEWL

Skin dehydration



# Skin Re-Fatting Test – Procedure

20 volunteers (male and female)

SLES 13.5 wt.-% + 1.5 wt.-% ELI or Glyceryl monooleate (GMO)

1 ml solution applied on the forearm skin for 15 sec, followed by rinse

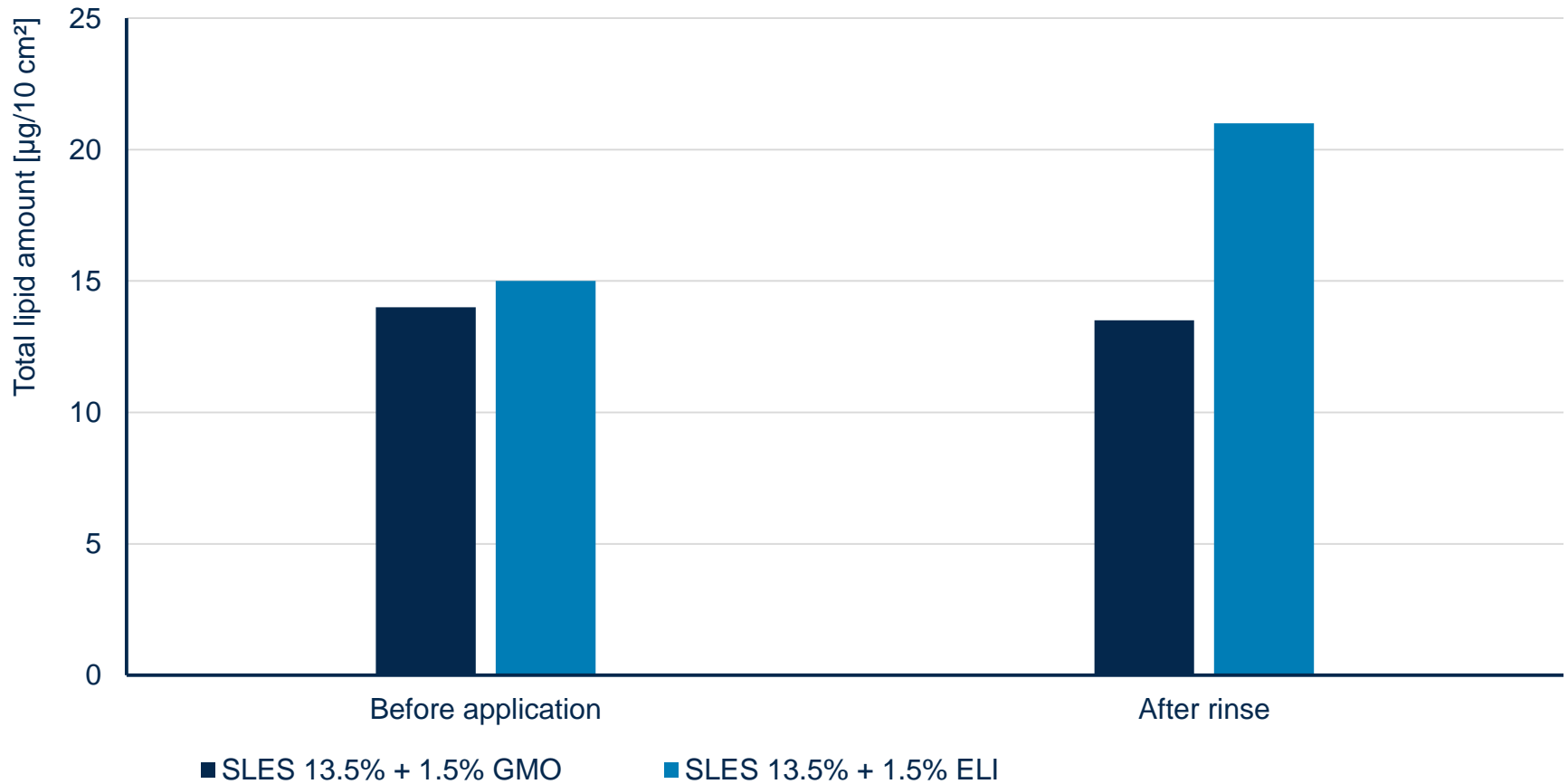
Skin lipid amount determination before and after the application

GC-mass detection of the lipids remained on the skin after the application

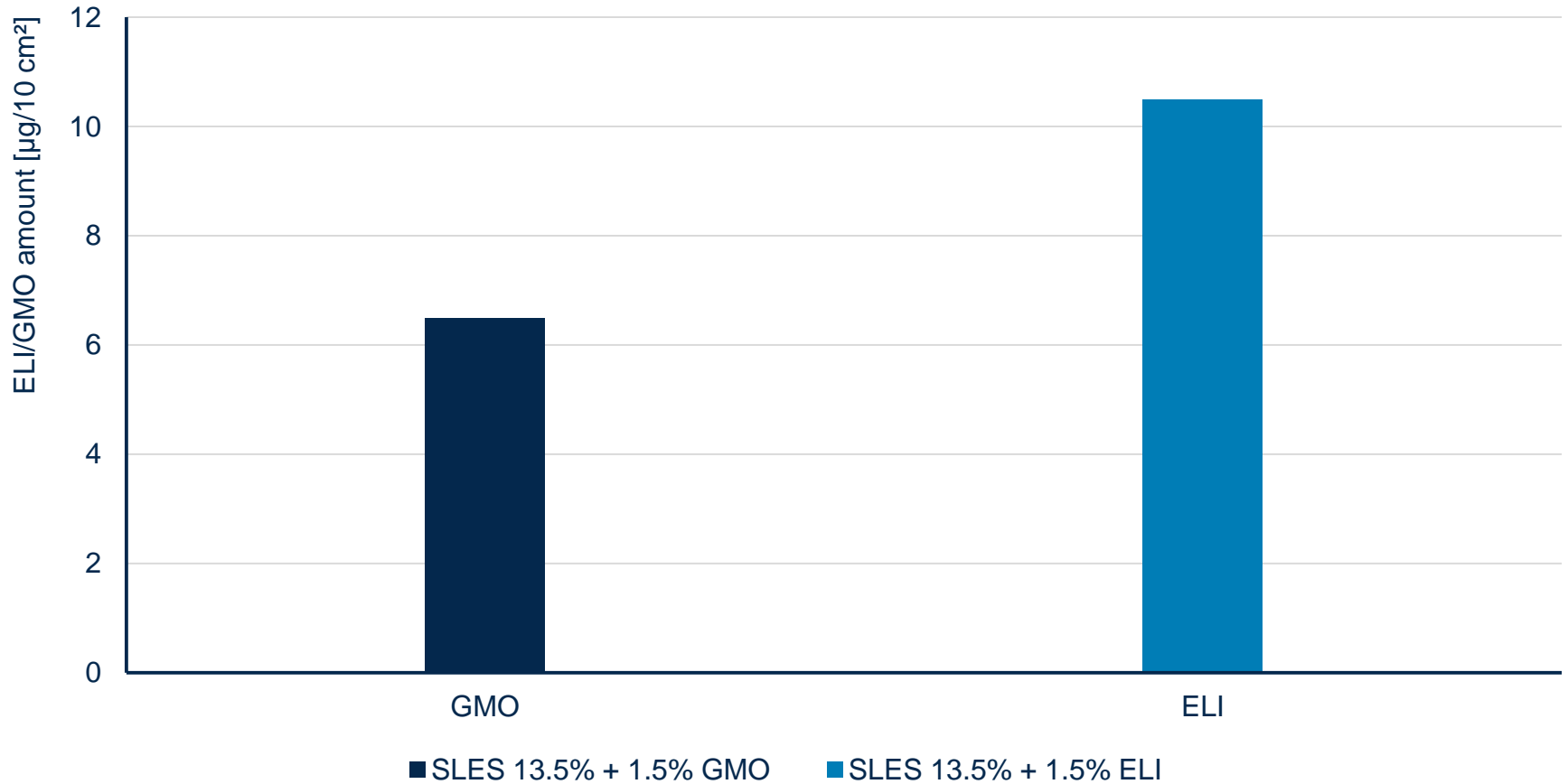




# Skin Re-Fatting Test – Total Lipid Amount

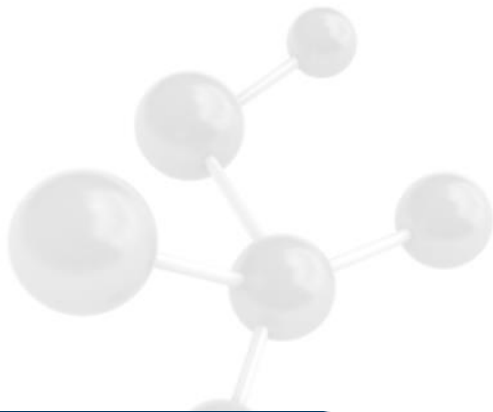


# Skin Re-Fatting Test – ELI/GMO Amount



COSMACOL ELI presents higher re-fatting activity than Glycerol monooleate because a higher total lipid amount can be observed after application and rinse

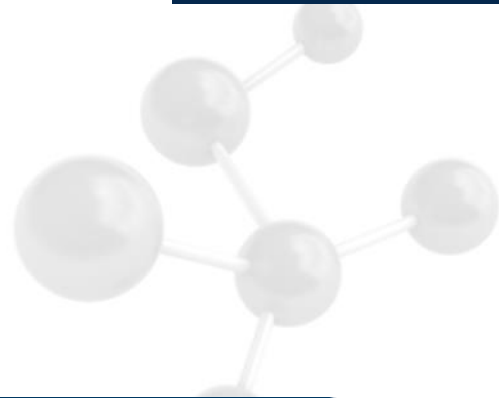
GC-Mass analyses confirmed that on the whole the increase is due to a higher amount of COSMACOL ELI that stays on the skin



COSMACOL ELI provides mildness at a very low concentration (0.5-1.5%wt)

The anti irritation effect of COSMACOL ELI is considerable in both acute and chronic exposure to SLES containing formulations

COSMACOL ELI improves skin feeling and shows remarkable re-fatting properties



# Thickening Effect – Tested Formulation

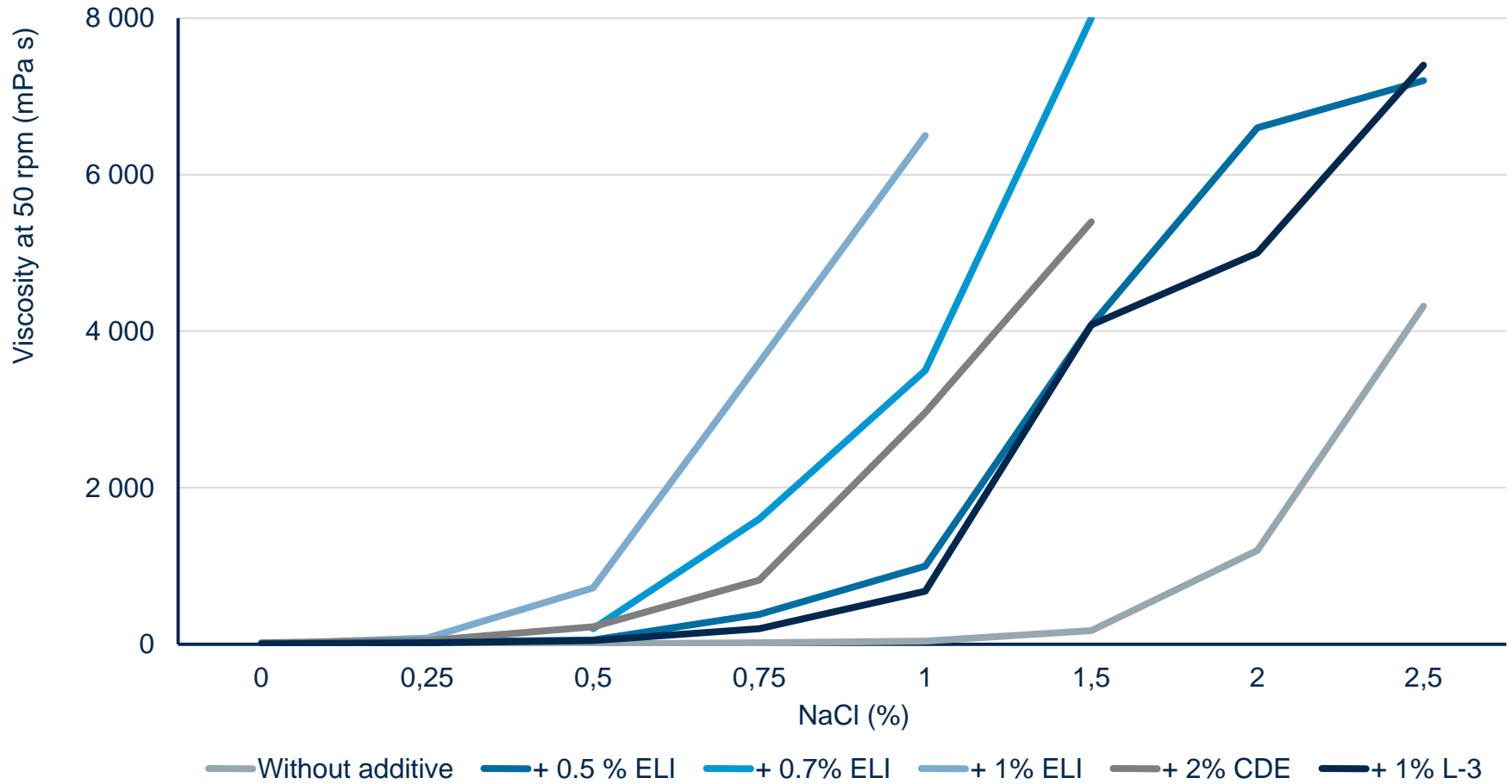


	% by wt.
Sodium Laureth Sulfate (SLES)	9.5
Laurylamidopropyl Betaine (LB)	1.5
<i>Thickener</i>	q.s
Preservative	q.s
Water	to 100

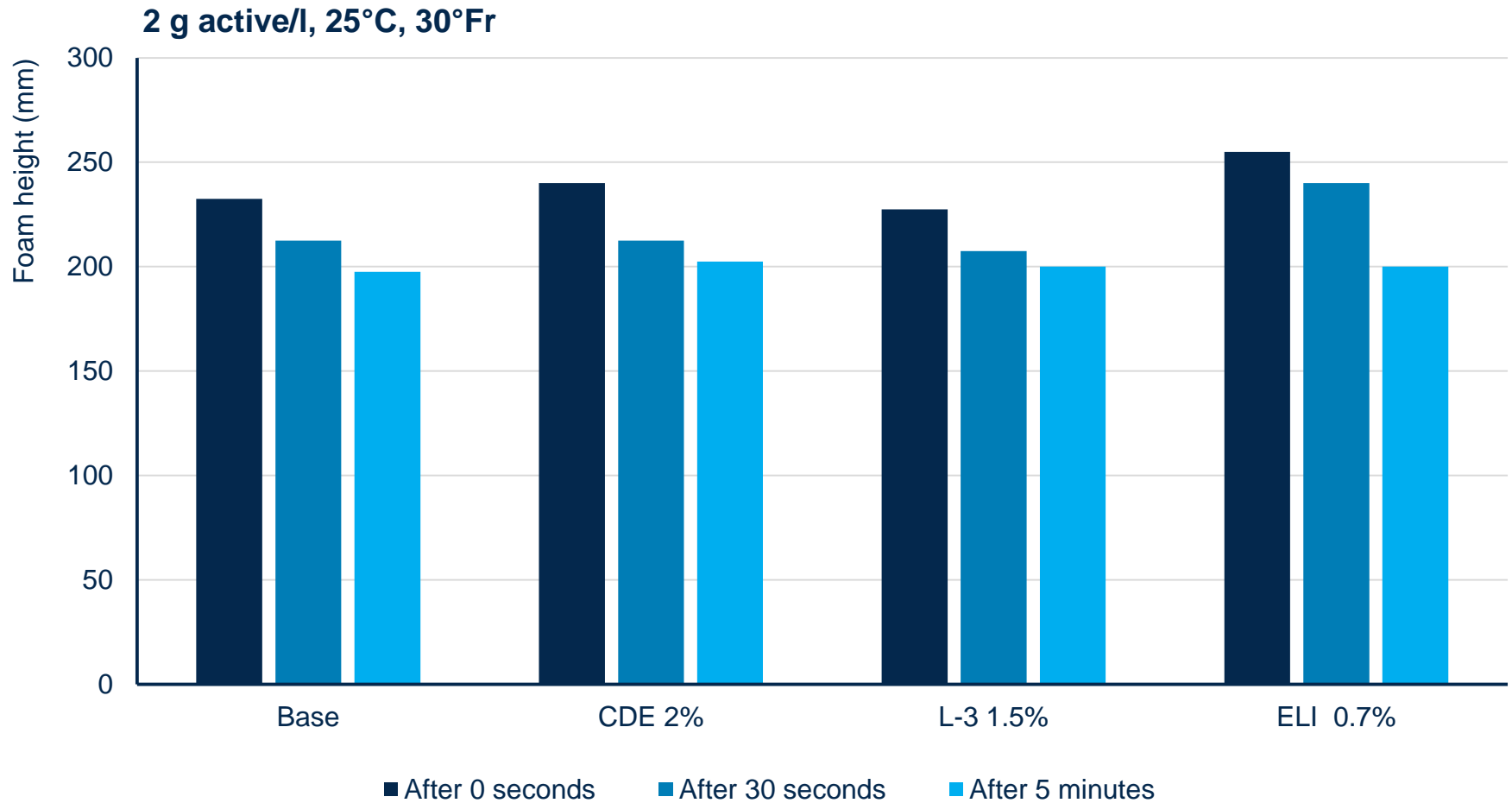
## Tested thickeners:

- Cocamide DEA (CDE)
- Laureth-3 (L-3)
- COSMACOL ELI (ELI)

# Viscosity Behaviour



# Foaming Power and Foam Stability

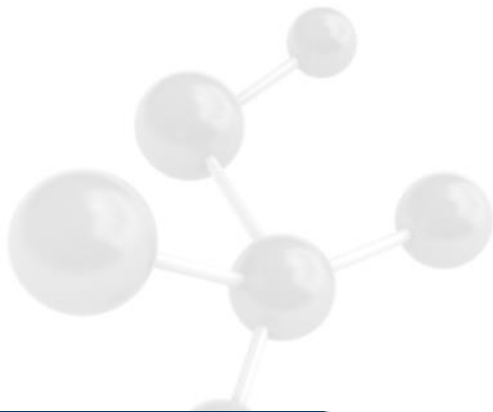


## COSMACOL ELI:

Thickens more efficiently than Cocamide DEA and Laureth-3

Shows good foam boosting properties

Allows to get transparent formulations even at low temperature





# Recommended Rinse-off Applications and Dosages



Moisturizing shower gel	0.5-1.5	wt%
Deo-shower and intimate soap	0.5-1.0	wt%
Liquid soap	0.5-1.0	wt%
Soap bar	0.5-1.0	wt%
Shampoo	0.3-0.7	wt%

## COSMACOL ELI



Thank You

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