



SOLVAY

asking more from chemistry®

Miranol® Ultra

High Performance Amphoacetate Technology

Novecare

Miranol[®] Ultra



Miranol Ultra C32

Sodium Cocoamphoacetate
32% Active
High Foam

Miranol Ultra L32

Sodium Lauroamphoacetate
32% Active
High Stable Foam

Miranol® Ultra

Advantages

- High Foam
- Good Detergents
- Viscosity Builders
- Very Mild
- Preservative Free

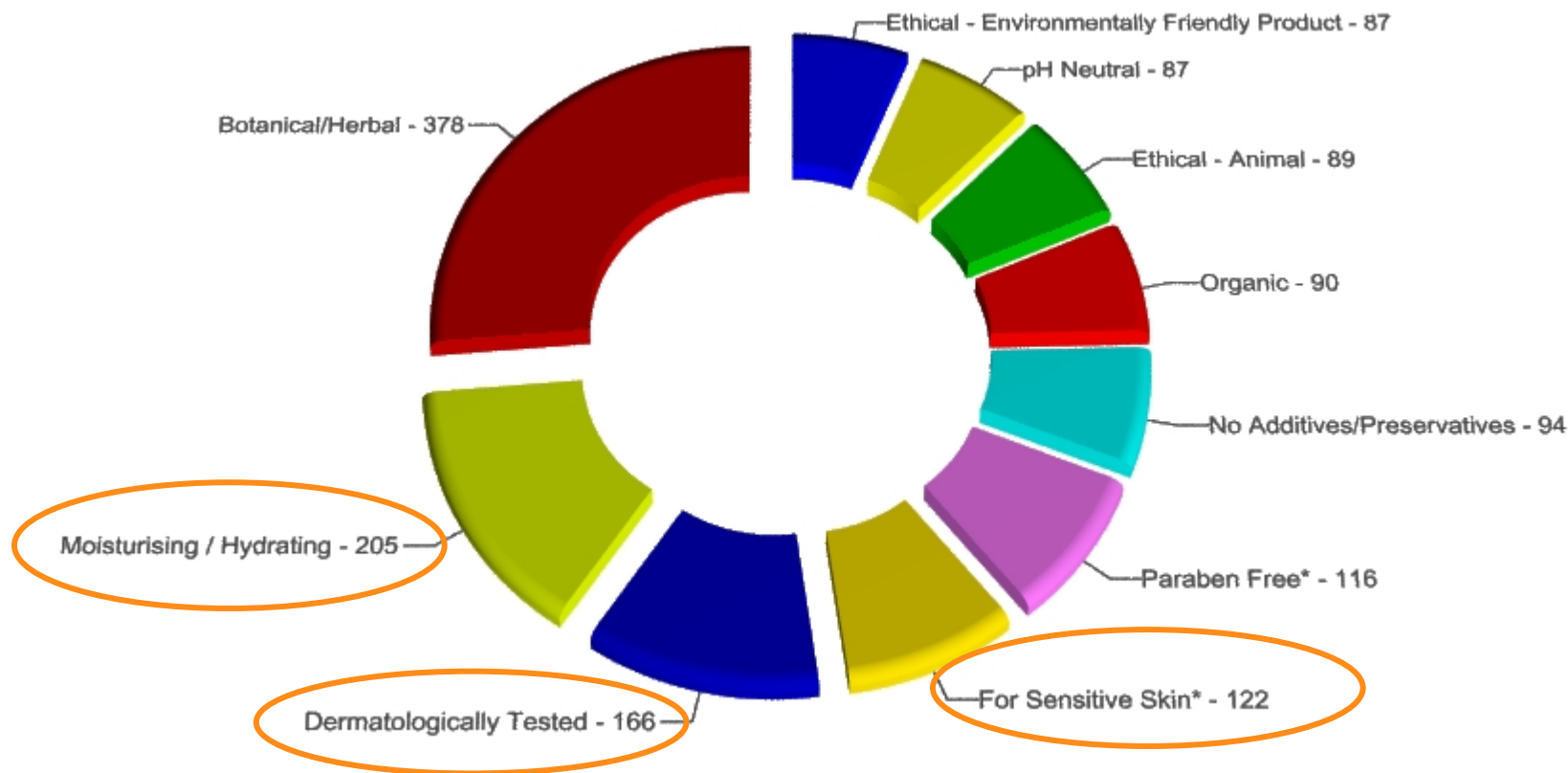
Disadvantages

- Not bleach stable
- Not stable below pH 3

Applications

- Body Washes
- Hair Shampoos
- Mild Skin Care Cleansers
- Baby Wash & Shampoos
- Cleansing Wipes
- Hand Washes
- Liquid Dish Washes
- Hard Surface Cleaners
- Hospital Cleaners

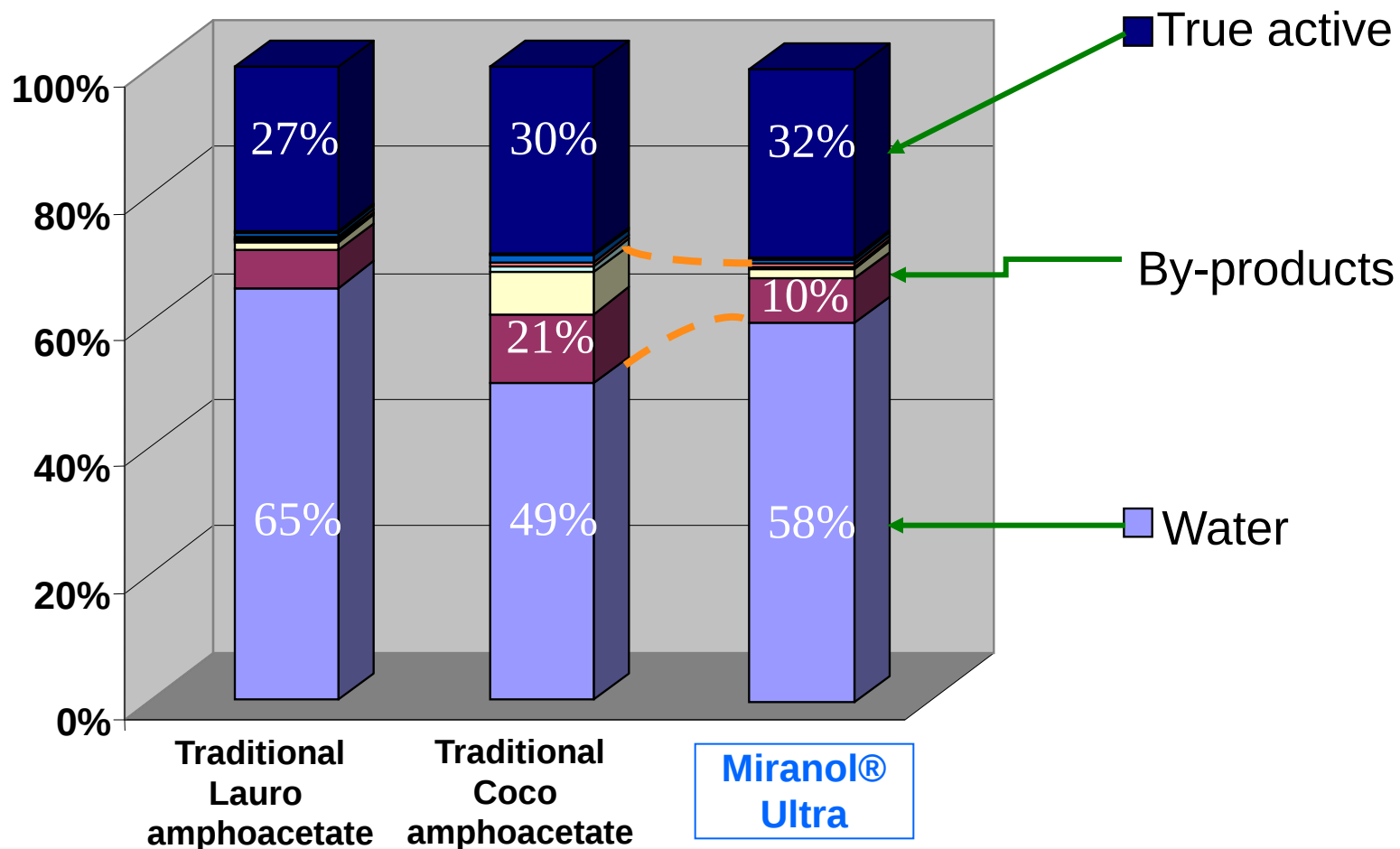
Amphoacetates are used in more moisturising, hydrating and sensitive skin products compared to betaines



Miranol® Ultra

High purity and mildness

$$\text{Active} = \text{Solids} - \sum(\text{byproducts})$$



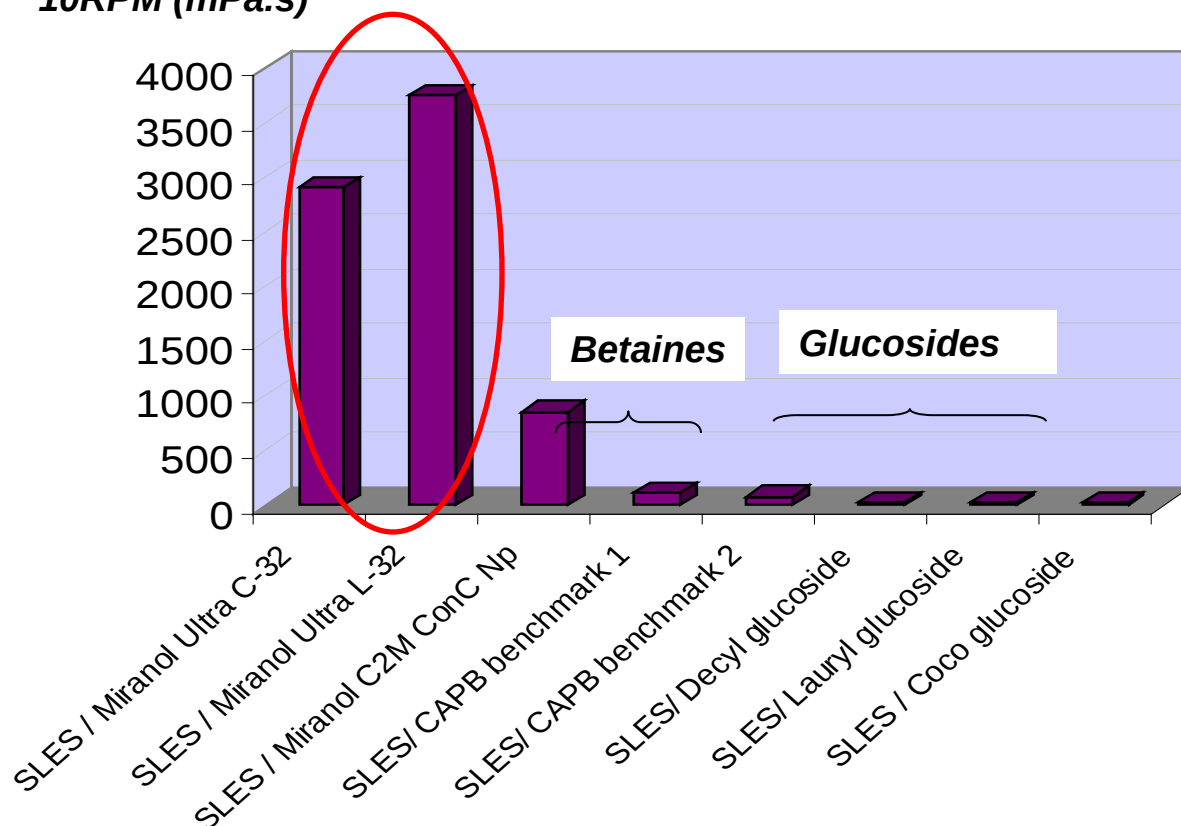
Why use Miranol® Ultra?

- **Strong ability to build viscosity** in presence of standard anionic surfactants, **with no or limited salt addition**
- **High foam volume, improved foam quality & stability**
- Enhanced **mildness & color protection** on hair
- **Increased silicone deposition** on hair through synergy with cationic polymers & alkyl glucosides
- **Vegetable derived, suitable for Ecocert formula**



Miranol® Ultra L-32 is the best amphoteric to develop viscosity in a mild salt-free formulation

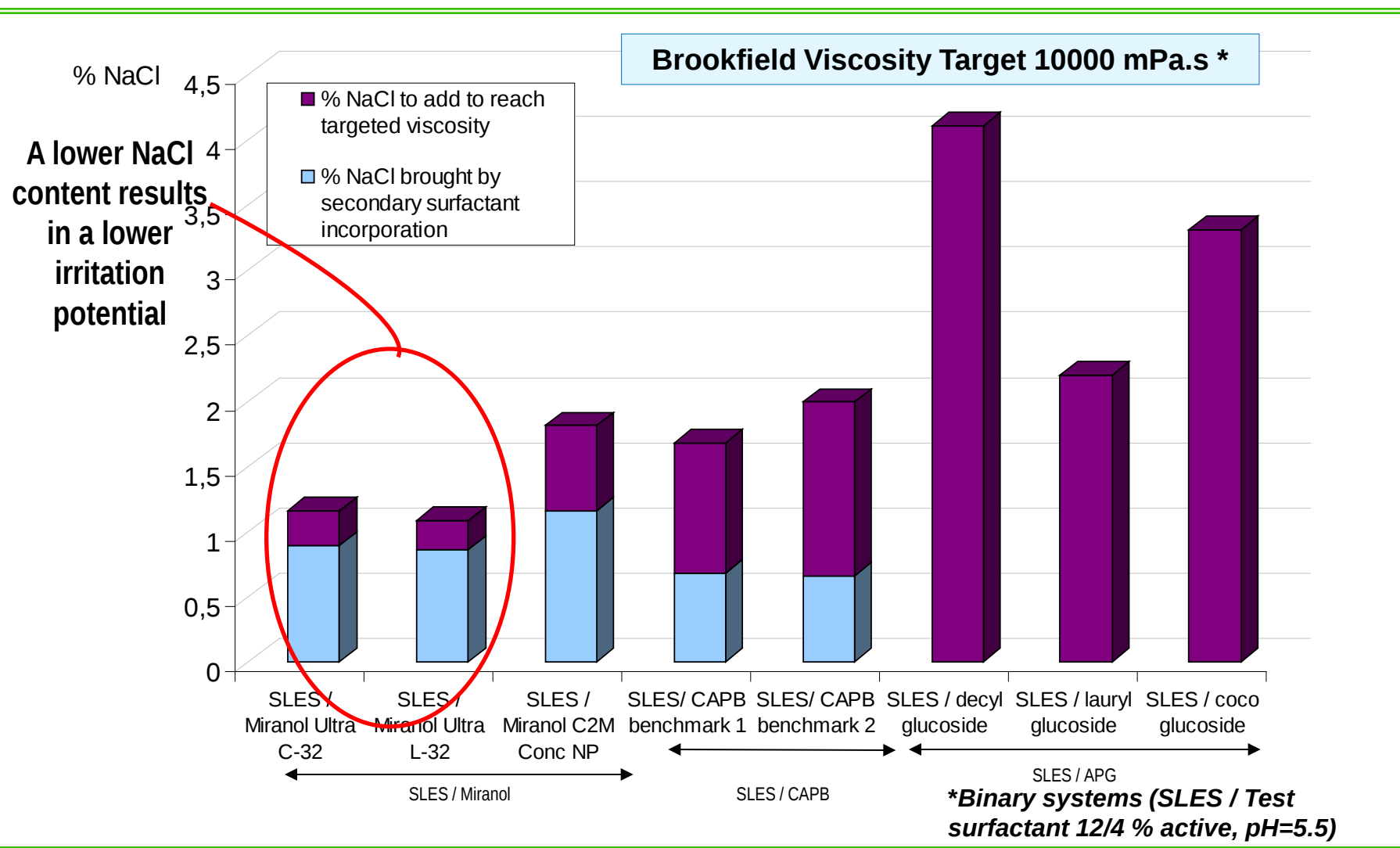
**Brookfield Viscosity
10RPM (mPa.s)**



Miranol Ultra® are the best amphoteric to develop viscosity in presence of standard anionic surfactants with no salt addition

***Binary systems (SLES / test surfactant 12/4 % active, no added salt) pH=5.5**

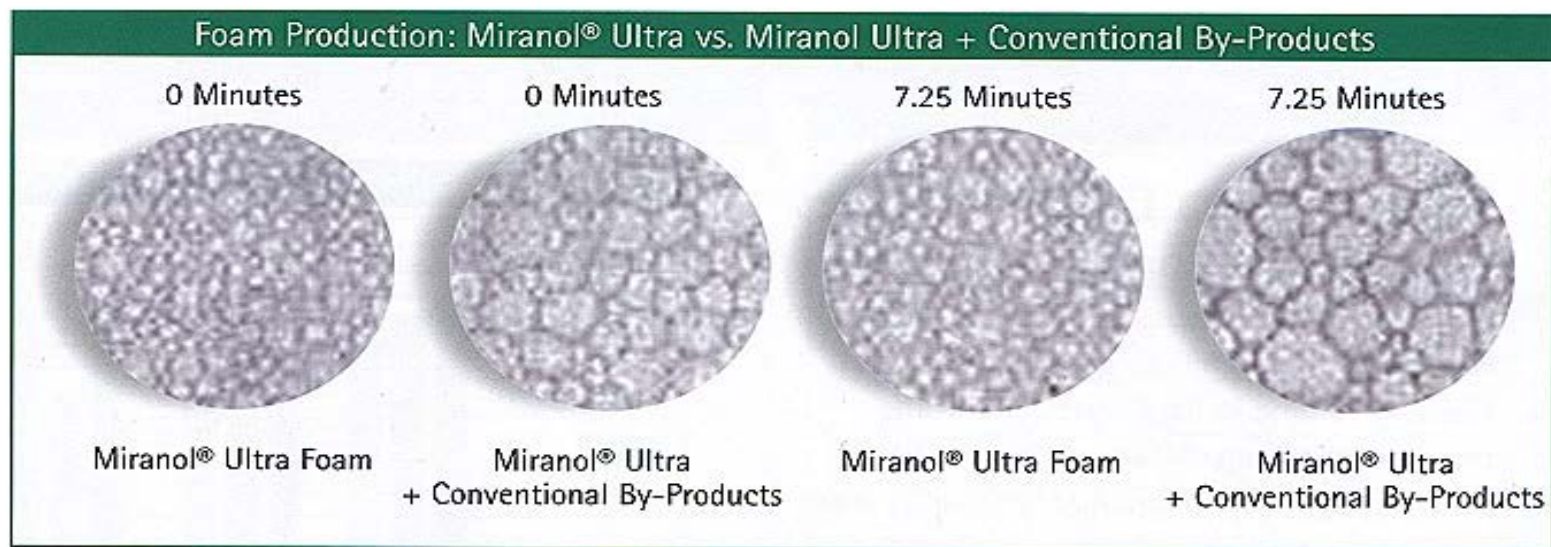
Miranol® Ultra requires limited salt addition to reach viscosity target (10000 mPa.s)



Miranol® Ultra is the best-in-class amphoteric for viscosity build-up

- Miranol Ultra® C-32 and L-32 are the **only ones to develop viscosity without salt addition**
- **Content of NaCl** to add to reach a targeted viscosity is **the lowest among amphoteric**s
- Since a high content of salt in a formula is correlated with a higher irritation potential → **clear advantage to Miranol Ultra® technology**

Reducing the reaction by-products has direct effect on foam density



Foam Appearance: Volume & Shininess

Foam volume of SLES/Sulfosuccinate/Cocamide DEA System



A : CAPB



B : Miranol Ultra L 32



Foam Creaminess: Dilution in Di-water 50 % and using Foam Pump for testing



Initial



A : CAPB



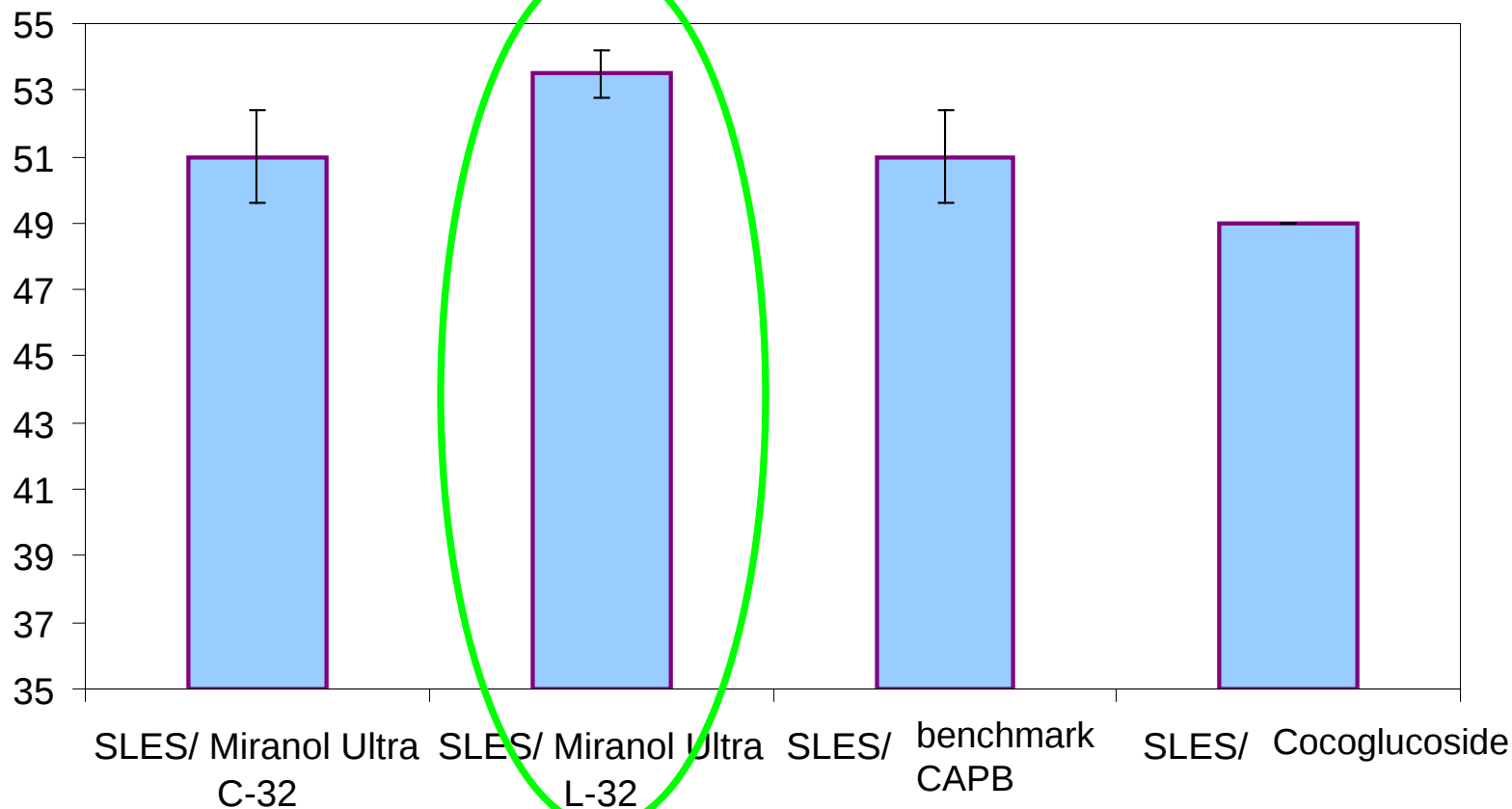
B : Miranol Ultra L 32

After 15
minutes

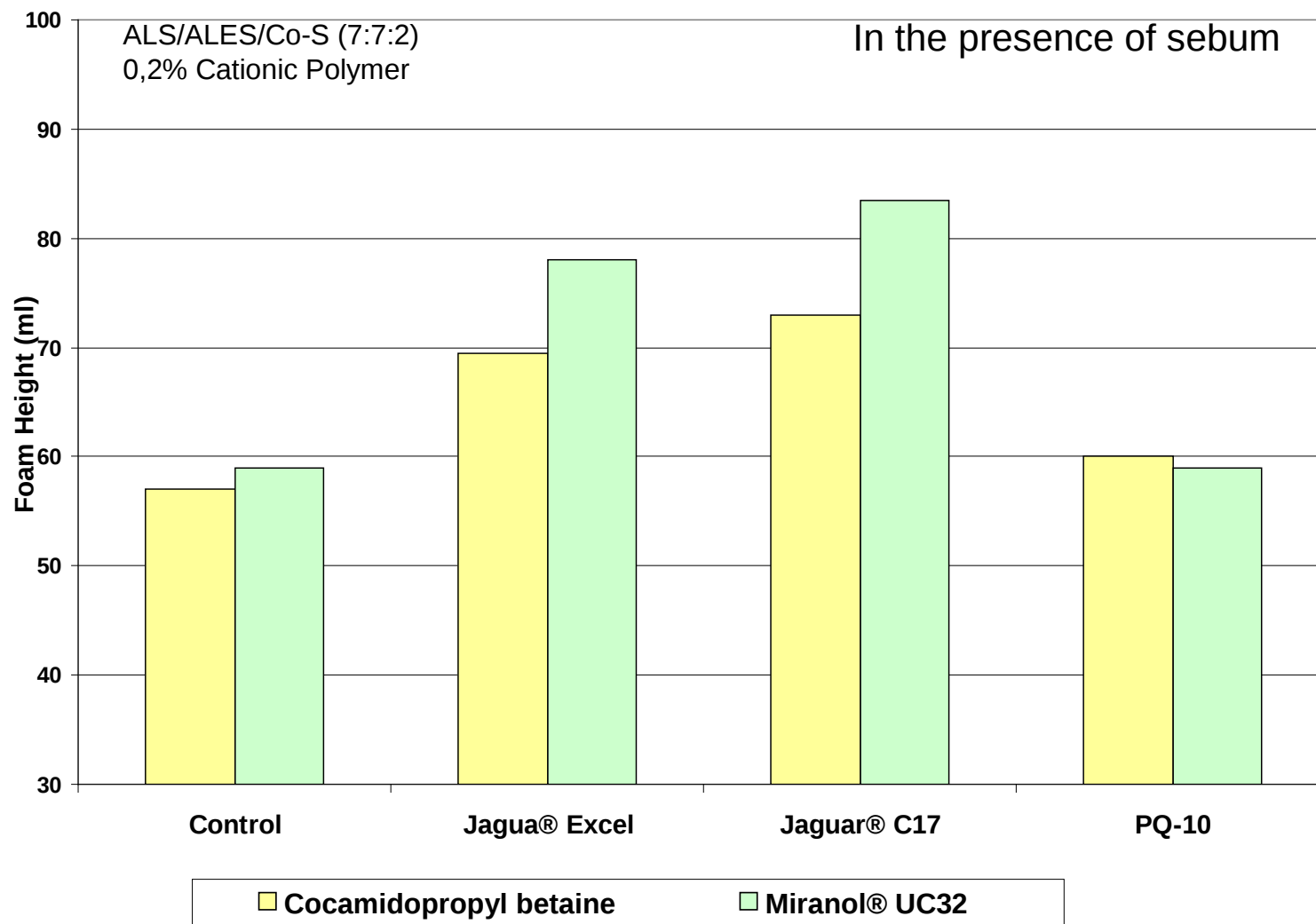


Miranol Ultra® L-32 is the best foaming amphoteric in presence of sebum

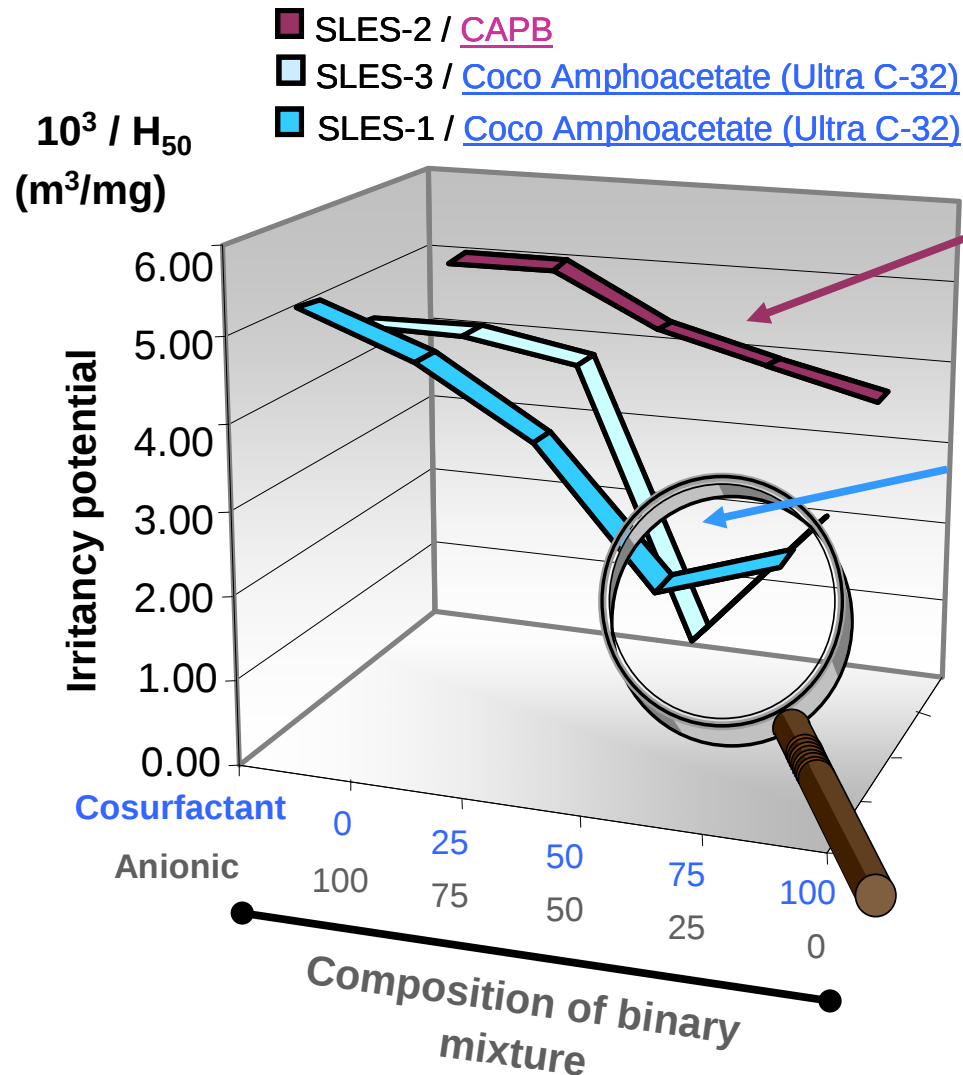
12 / 4% active SLES / Test surfactant, pH 5,5; Brookfield Viscosity adjusted at 10000 mPa.s
High Throughput Rossmiles Test – 10% formula dilution in hard water (300 ppm CaCO₃) in presence of **0.7% sebum** -



Higher foam volumes obtained from Jaguar® C and Miranol Ultra synergies



“True” synergy between MIRANOL and anionic surfactants enabling optimized mildness



« Betaine-based »
amphoteric
surfactants only
display a **dilution**
effect to reduce
irritation

« Amphoacetate-based »
amphoteric surfactants
display a **synergy effect**
with increased mildness

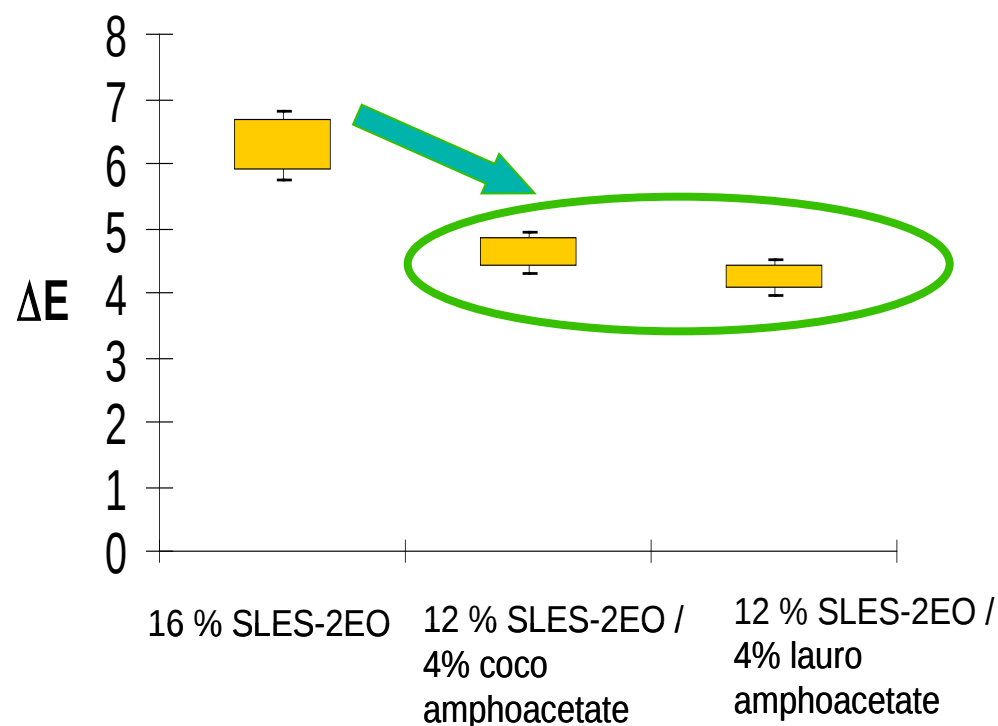
Miranol Ultra® are mild
amphoteric suitable for
baby shampoos



Formulations	Technology	HETCAM TEST	
Commercial Benchmark Klorane Does not sting the eyes, hypoallergenic	Disodium cocoamphodiacetate, cocamidopropyl dimethylamino hydroxypropyl hydrolyzed collagen, sodium laureth sulfate	5	Moderately Irritant

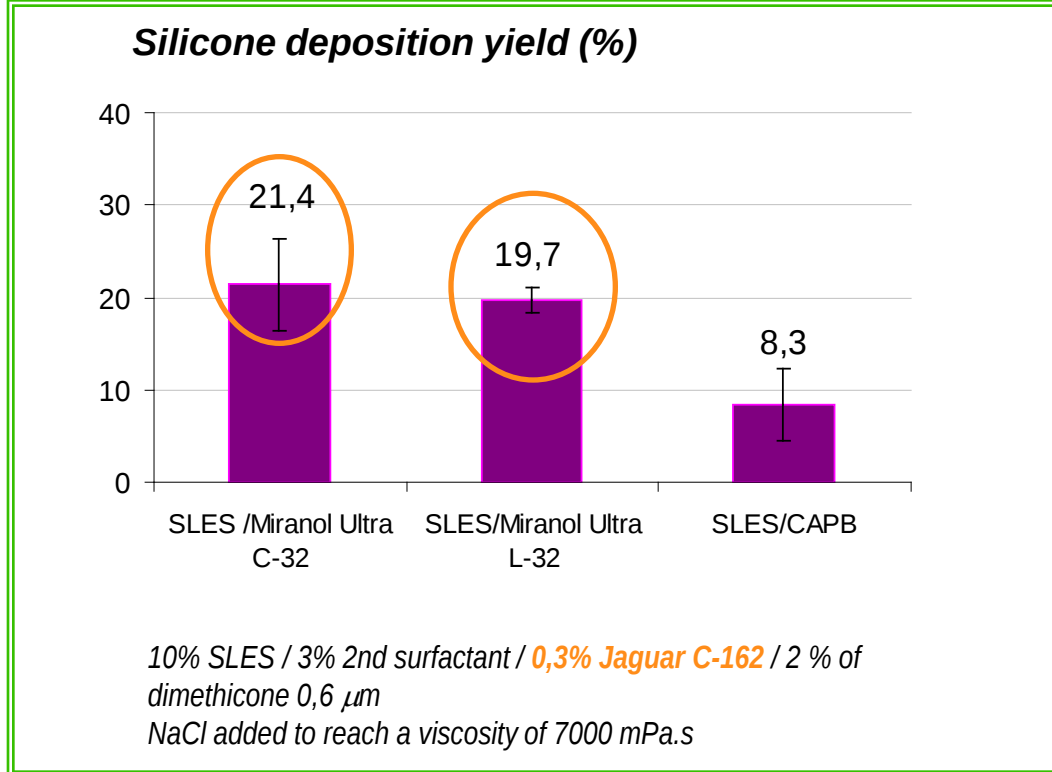
Miranol Ultra®: Enhanced hair color protection is achieved through partial substitution of SLES with Amphoacetate

Color Loss comparison (ΔE) of single-bleached & dyed Caucasian hair tresses treated with different surfactant systems - 3 shampoo cycles



- At identical total solids, a reduction of SLES-2EO and substitution with amphoacetate surfactant allows for the reduction of hair color fading
- ***Best-in-class technology to protect hair color***

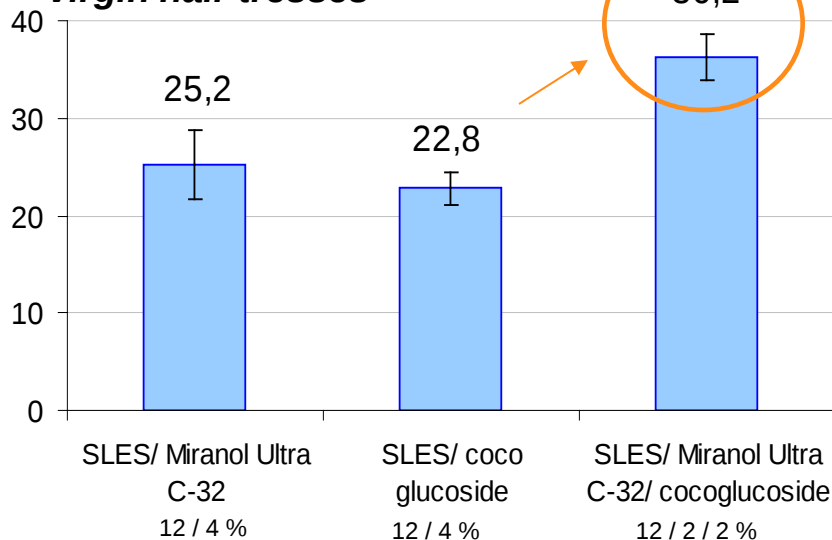
Miranol Ultra® C32: Improved Silicone Deposition on Virgin Hair



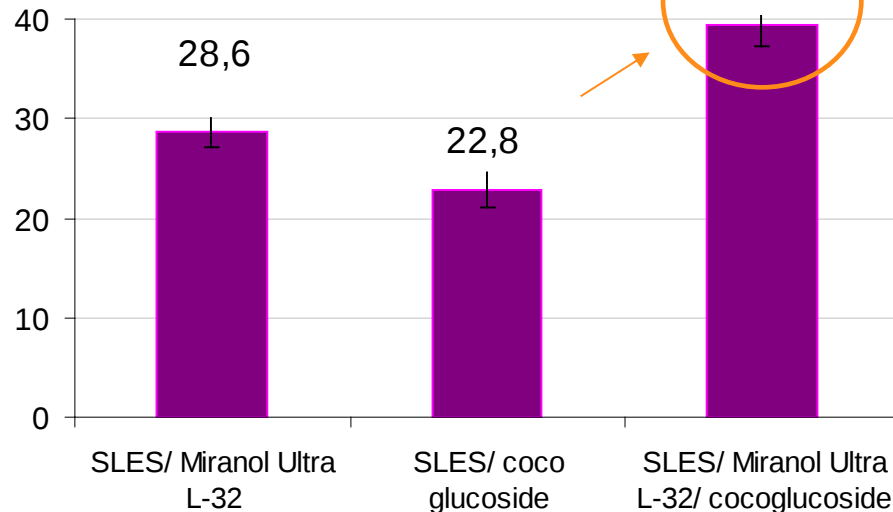
- Synergy Miranol Ultra® with Jaguar C
- Increased Silicone Deposition on virgin hair when Miranol Ultra® is used as secondary surfactant instead of CAPB
- Miranol Ultra®: the suitable amphoteric for Conditioning Shampoos

Miranol Ultra® C32: Synergy with Glucoside to enhance Silicone Deposition through Jaguars

Silicone deposition yield (%), virgin hair tresses



Silicone deposition yield (%), virgin hair tresses



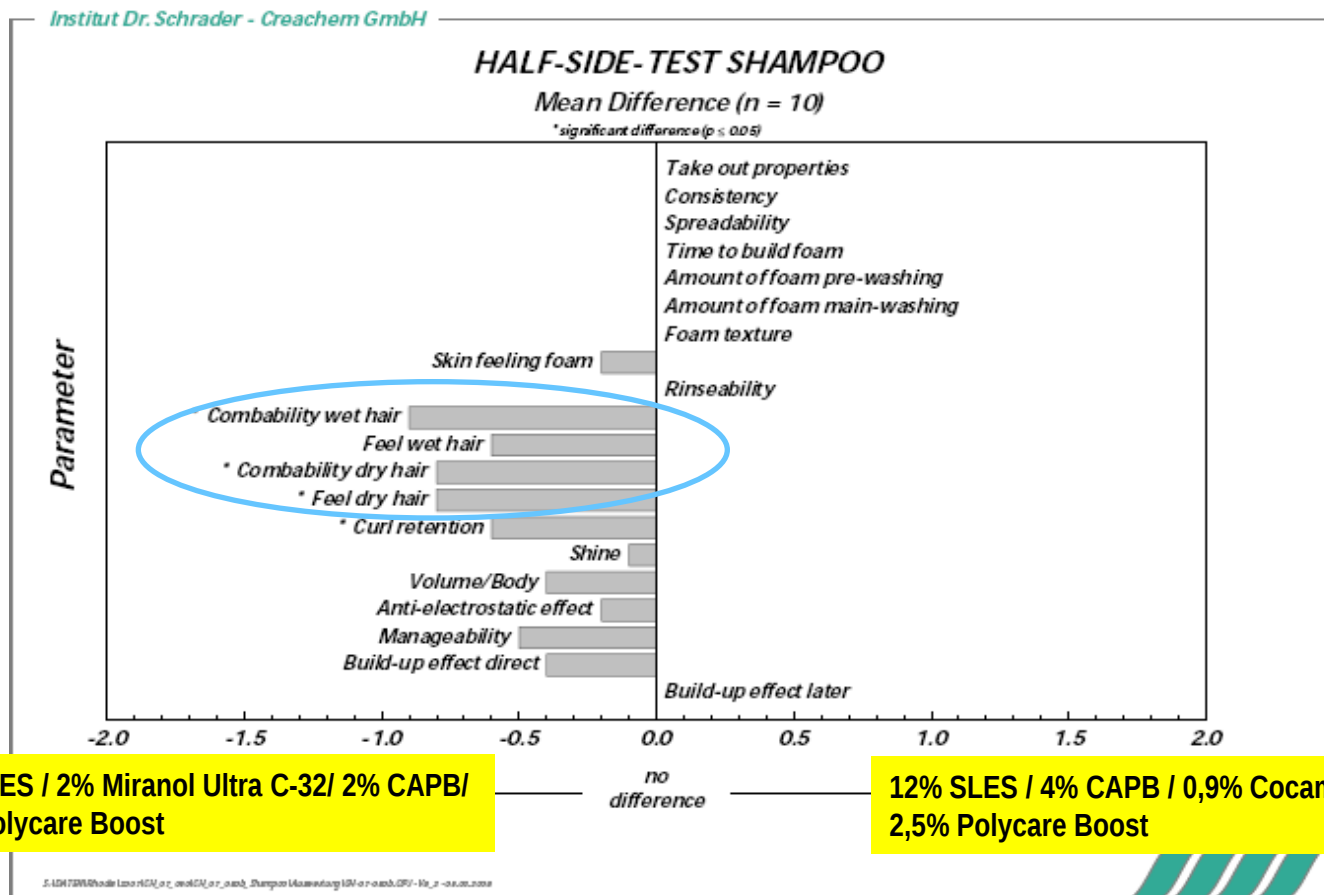
12% SLES / 4 % test surfactant / 0,2% Jaguar Excel / 1% NaCl/ 2% dimethicone emulsion 0,6 µm

RHODIA PATENT

Clear synergy between amphoacetate & cocoglucoside : replacing part of cocoglucoside by amphoacetate boosts silicone deposition on virgin hair.

➡ **Modification of the interaction between polyelectrolyte-surfactant complex and silicone, favoring deposition of the later on hair**

Conditioning performances : Half-Head Tests



- Replacement of part of CAPB by Miranol Ultra® C-32 results in a strong improvement in conditioning performance, in terms of wet/dry feel and combing

Miranol Ultra: natural origin surfactant, Ecocert approved

Natural origin

Miranol Ultra® C-32 and Miranol Ultra L-32 conform to the Natural & Organic Cosmetic Standards ECOCERT

Shower Gel based on ingredients in conformity with Ecocert

INGREDIENTS (INCI NAME)	FUNCTION	In Active %	PROCESS
Texapon ALS Benz ⁽⁶⁾ (Ammonium Lauryl Sulfate)	Surfactant	7.0	Step 1 Add all surfactants and mix until clear. Step 2 Add Citrus aurantium amara flower water, Glycerin Bio, Lavender essential oil and mix until clear. Step 3 Add Preservative. When clear, adjust pH with Citric acid solution
Miranol® Ultra C32⁽¹⁾ (Cocoamphoacetate)	Surfactant	4.0	
Mackol® DG⁽¹⁾ (Decyl Glucoside)	Surfactant	2.0	
Citrus aurantium amara flower water ⁽²⁾		10.3	
Glycerin Bio ⁽³⁾ (Organic Glycerin (vegetable) OG98)	Emollient	2.0	
Lavender essential oil ⁽⁴⁾	Fragrance	0.1	
Geoguard ultra ⁽⁵⁾ (Gluconolactone & sodium Benzoate)	Preservative	1.0	
Citric Acid (50% in solution)	pH Adjuster	qs	
Deionized Water		qs 100	

Suppliers: (1) Rhodia (2) Sanoflore (3) Cremer Care (4) A&E Connock (5) Lasserson (6) Cognis

Typical Properties

Appearance at 25°C	Pale yellow, clear
pH	6.7
Brookfield Viscosity at 25°C	[10000 – 18000] mPa.s (RV, spindle 4, 10 rpm)



Which Miranol for which benefits?

Miranol Ultra® L32

- Viscosity Builder, requires minimum amount of salt to thicken
- Delivers the highest amount of foam - also in presence of sebum - with improved quality (fine bubbles size, high density) and stability
- Natural origin, in conformity with ECOCERT standards

Miranol Ultra® C32

- Reduces significantly irritancy through synergy with SLES and can be recommended for Baby products as well as for hair color protection
- Improves deposition of silicone on hair through synergy with cationic polymers
- Synergy with Glucosides imparts similar or better conditioning & sensorial profile as CAPB at lower cost
- Natural origin, in conformity with ECOCERT Standards

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www.solvay.com



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