

Care Creations™

Shampoo
Conditioning ingredients (4)

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We create chemistry

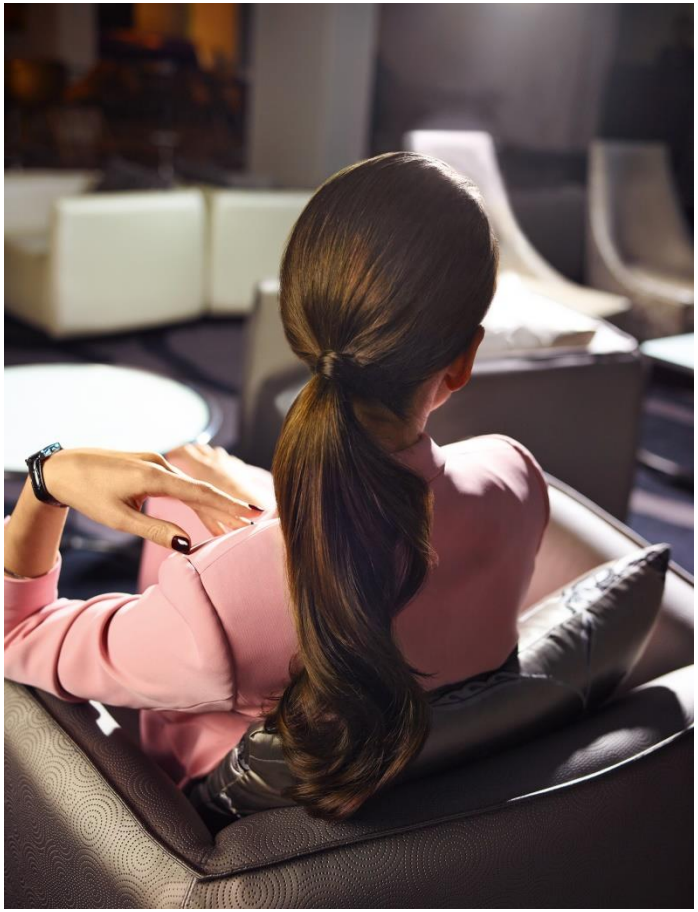
Typical shampoo composition

function	ingredients	amount [%]
sensorial aspects / product stability	perfumes, colors, preservatives	1 - 3
conditioning / product claims	Conditioning additives, actives	0.1 - 3
appearance / handling	pearlshine, thickeners, auxiliaries	0 - 6
cleansing, foam	primary surfactant	6 - 10
	co-surfactant	2 - 5
	water	up to 100

Plantasil® 4V
Technical Profile

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- INCI: PEG-40 Hydrogenated Castor Oil (and) PEG-7 Glyceryl Cocoate (and) PEG/PPG-120/10 Trimethylolpropane Trioleate (and) Glycerin
- Appearance: Transparent to slightly turbid yellowish liquid at room temperature, solidification below 15°C reversible by heating
- No preservative
- No GHS labeling
- Recommended dose level in shampoos: 1-3%

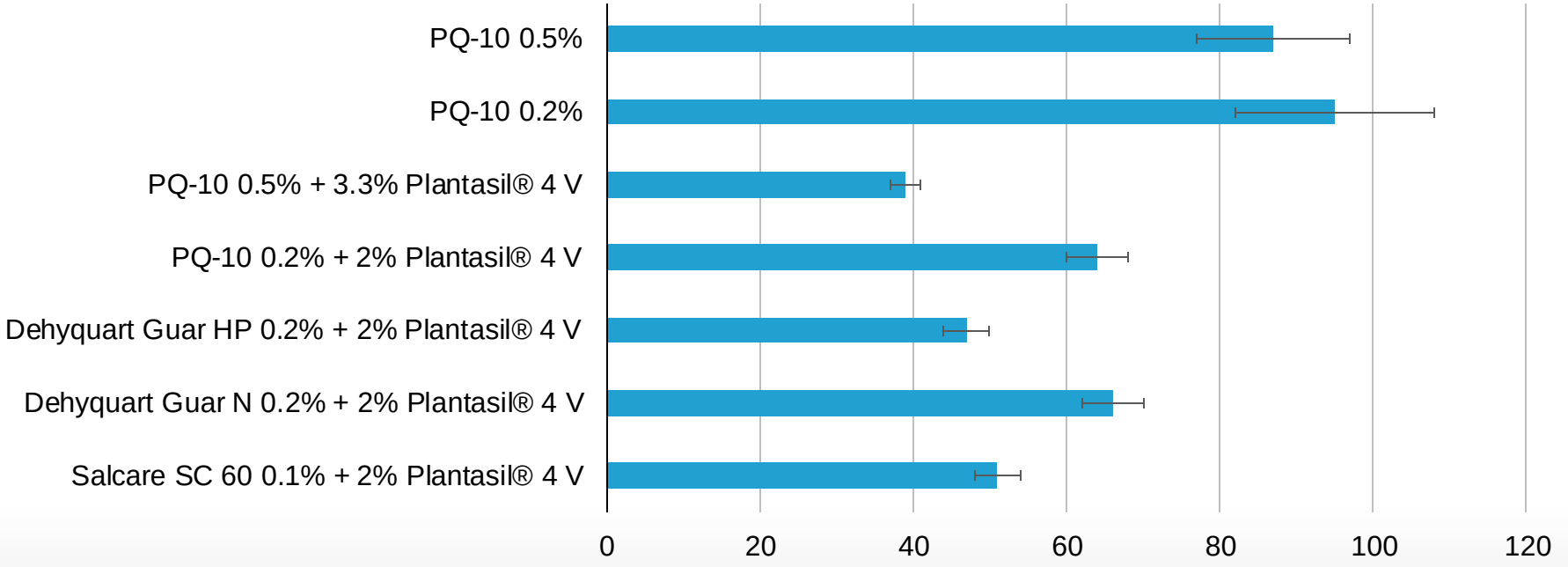


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Plantasil® 4V
Conditioning properties on Caucasian Hair

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Combing work (%) in wet hair (10 medium bleached hair strands)



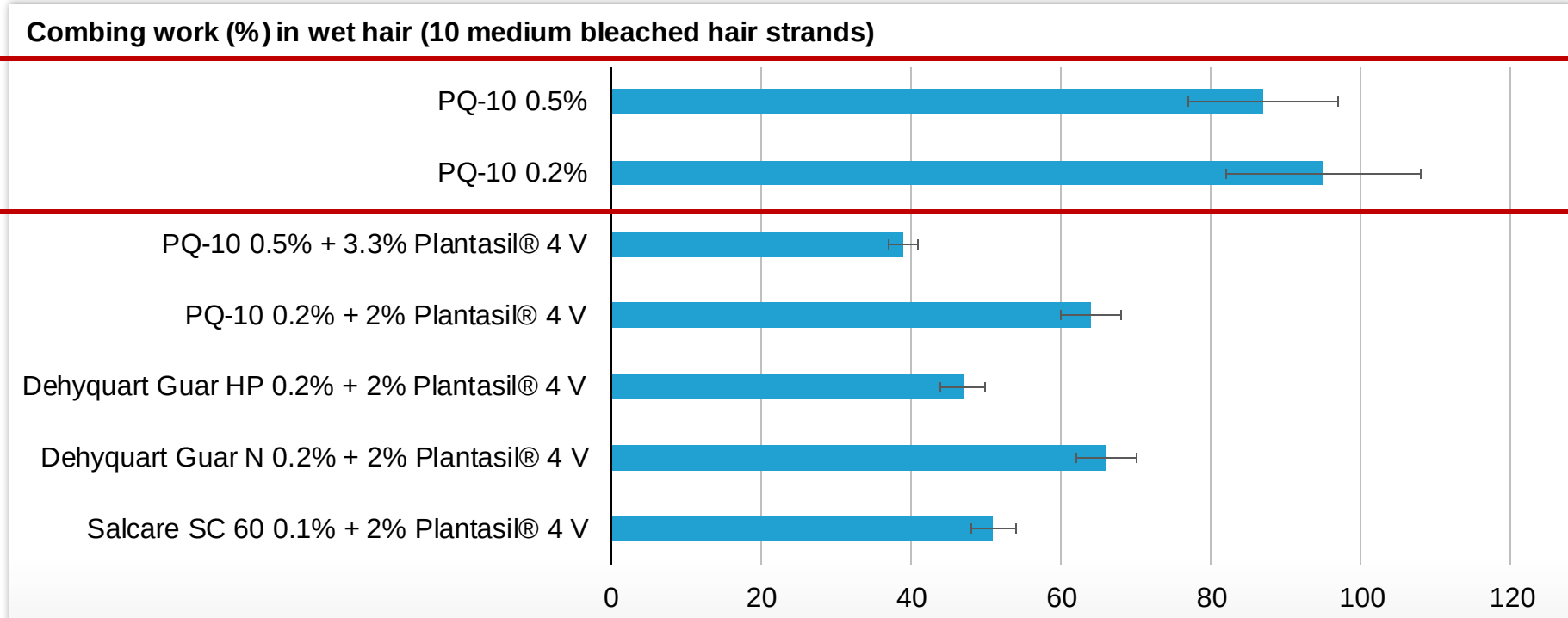
Plantasil® 4V improves wet combability results significantly in combination with all relevant conditioning polymers in shampoo

Base Formula: 12% surfact. concentration (SLES:CAPB 10:2), 3% Euperlan® PK 710
*Formula Polymer 0.5% with 14% surfactant concentration and transparent

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Plantasil® 4V
Conditioning properties on Caucasian Hair

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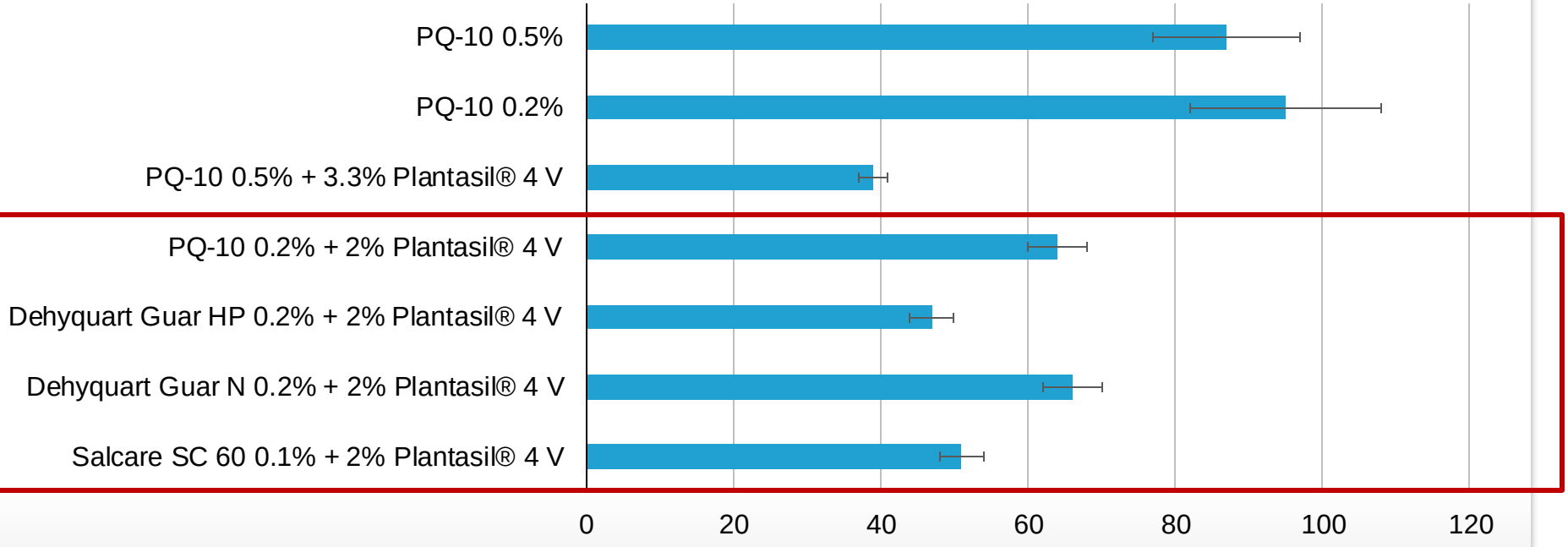
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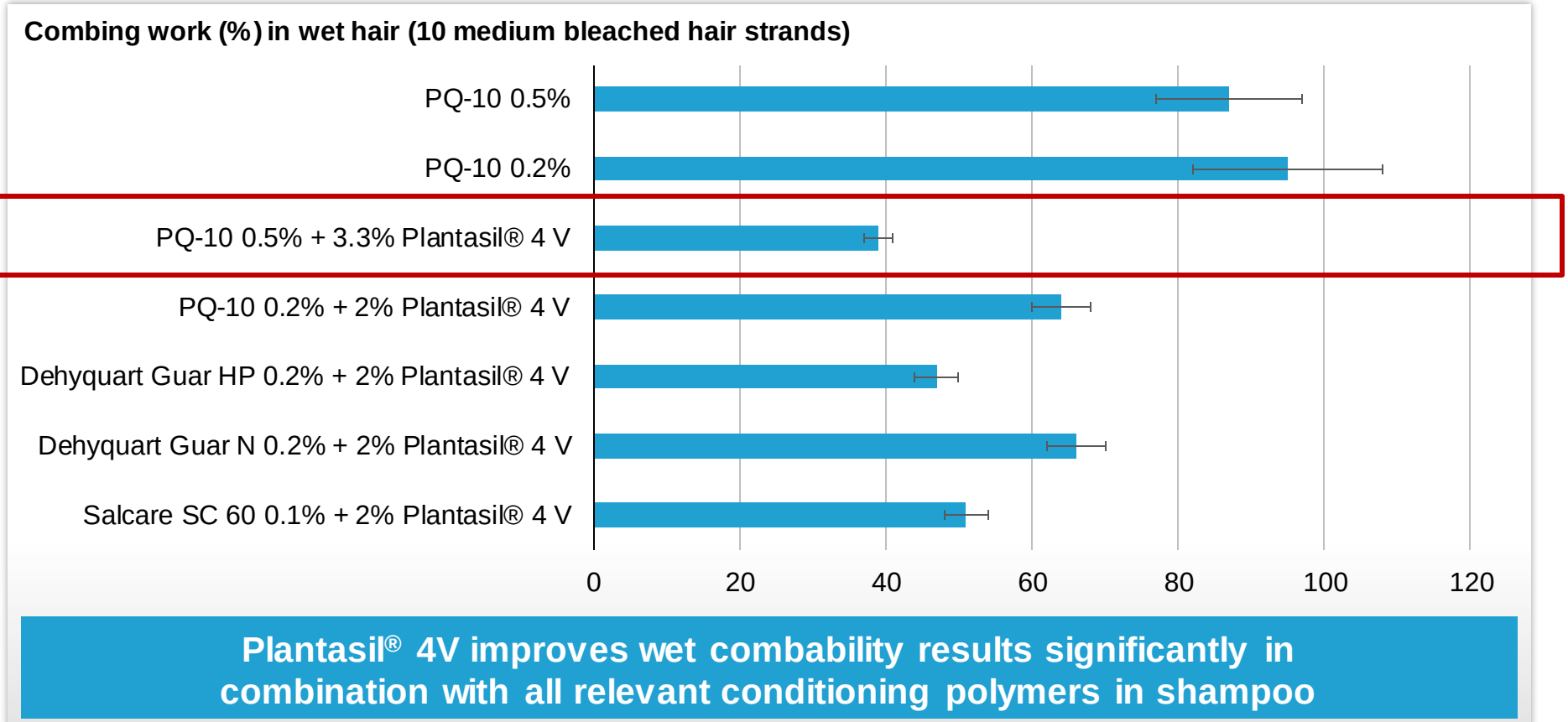
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Conditioning properties on Caucasian Hair

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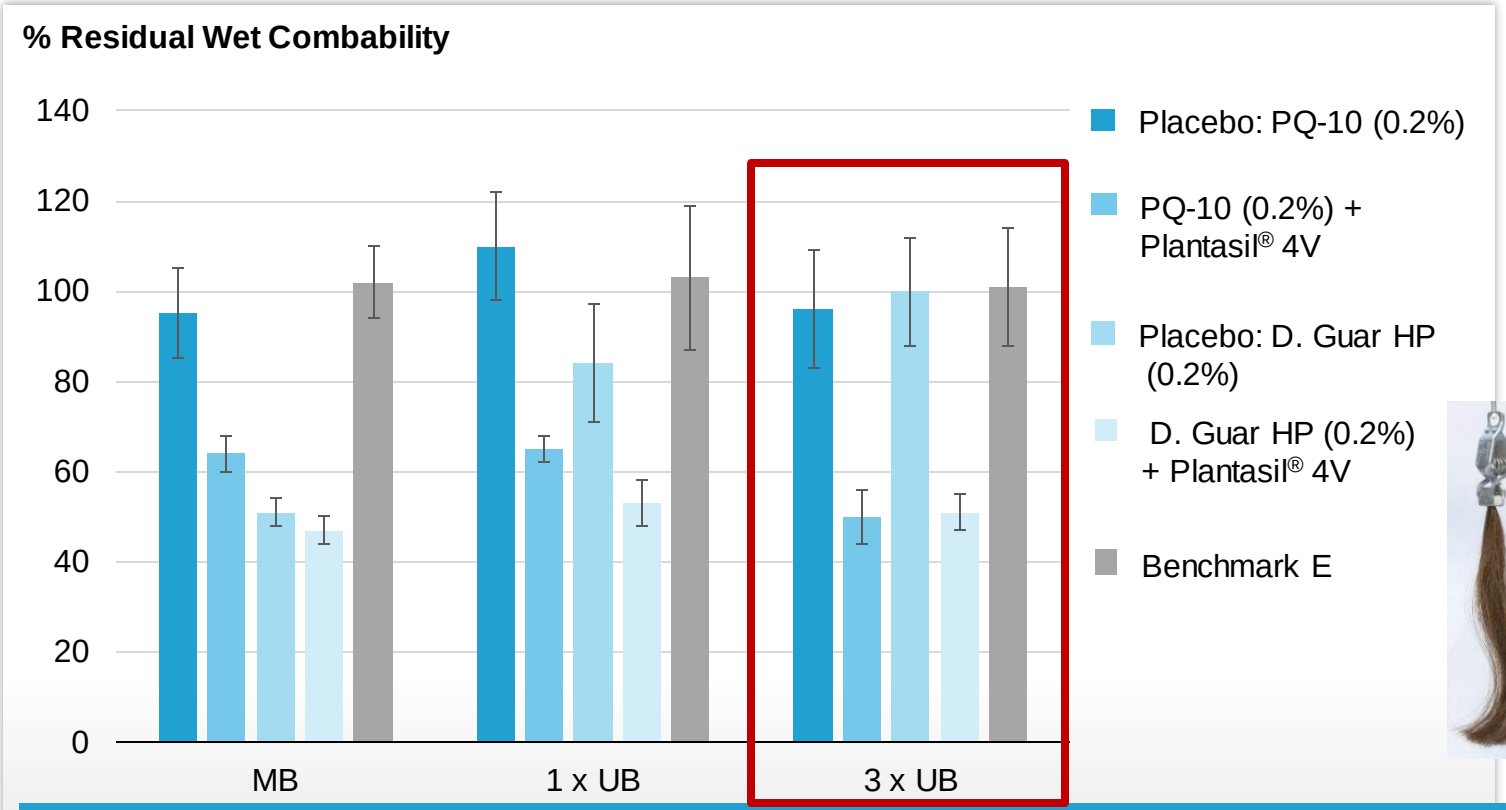
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Plantasil® 4V
Conditioning effectiveness on different hair damage levels

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MB 1 x UB 3 x UB

MB: Medium Bleached
1xUB: 1 time Ultrableached
3xUB: 3 times Ultrableached
Caucasian Hair



Plantasil® 4V provides excellent low wet combability work at all damage levels including highly damaged hair

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„Best Choice“ Shampoo

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HB-DE-14-017-59

Phase	Ingredients	INCI	% by weight	Function
A	Water, demin.	Aqua	72.00	
	UCARE JR-400 Polymer (Dow Chemicals)	Polyquaternium-10	0.20	Conditioning agent
B	Dehyton® PK 45	Cocamidopropyl Betaine	5.40	Surfactant
	Texapon® N 70	Sodium Laureth Sulfate	14.30	Surfactant
	Plantasil® 4V	PEG-40 Hydrogenated castor oil, PEG-7 Glyceryl Cocoate, PEG/PPG-120/10 Trimethylol Propane Trioleate, Glycerin	2.00	Conditioning agent
	Euperlan® PK 710 Benz	Glycol Distearate, Sodium Laureth Sulfate, Coc amide MEA	3.00	Pearlizer
	Cotton Touch (Symrise)	Parfum	0.50	Fragrance
	Sodium Benzoate	Sodium Benzoate	0.50	Preservative
C	Citric Acid (50% solution)	Citric Acid	0.70	pH Adjustment
D	Sodium Chloride	Sodium Chloride	1.40	Rheology modifier

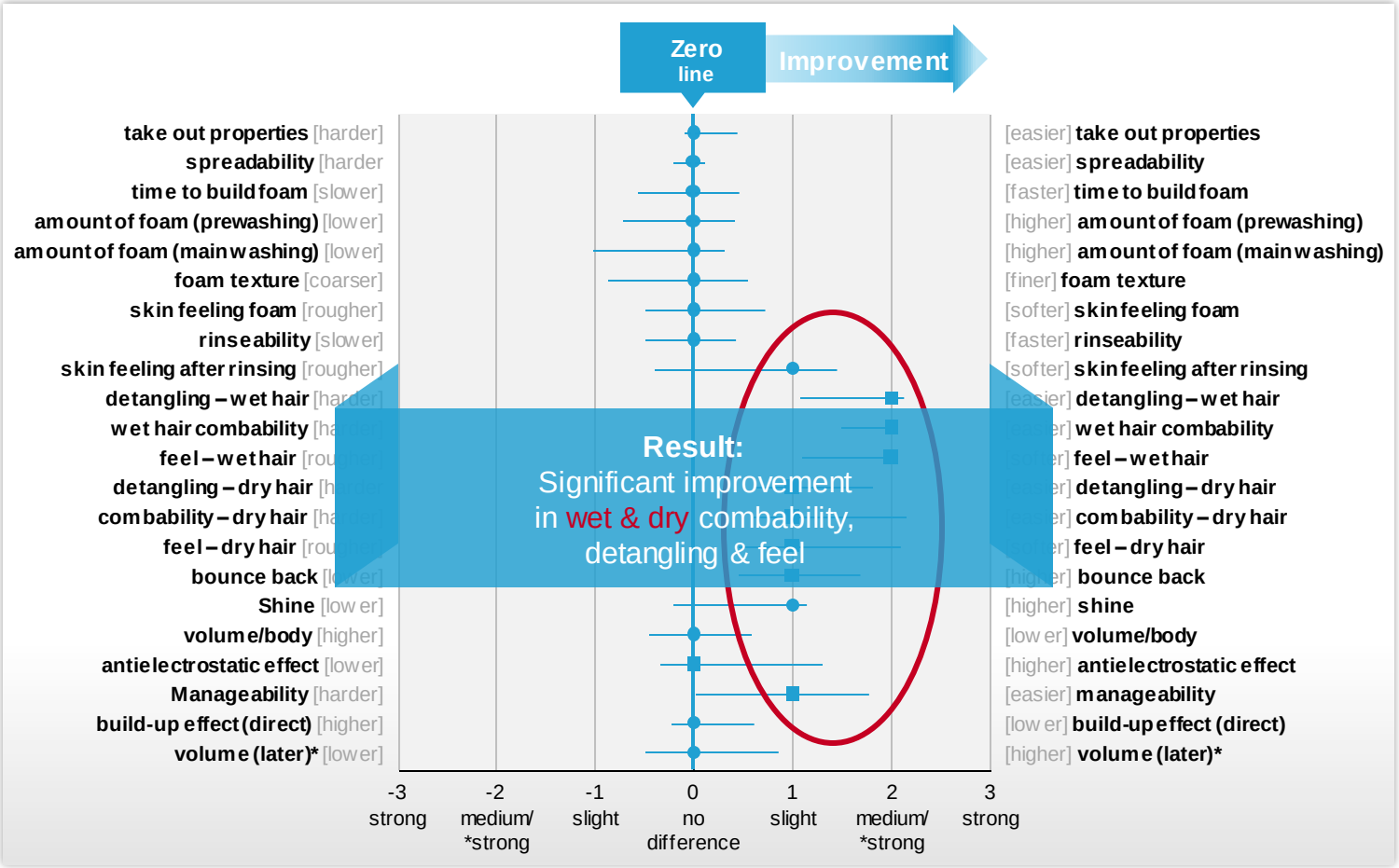
Specifications	
pH value (23°C)	4.6
Viscosity (Brookfield; RVT; spindle 4; 10 rpm; 23°C)	6 000 mPas
Appearance	pearly

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Plantasil® 4V
Performance on Caucasian Hair

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Half-Head Test* (n=19)



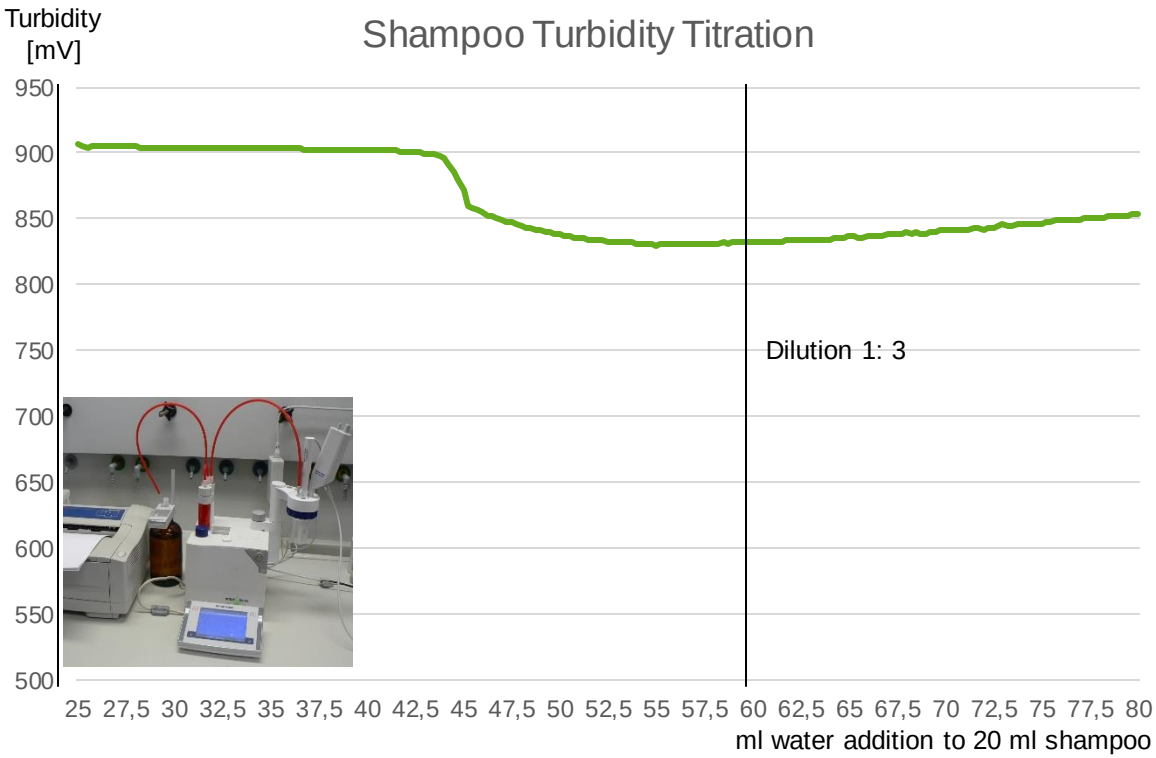
- not significant
- significance ≥ 90%
- significance ≥ 95%
- significance ≥ 99%

Pairwise comparison of HB-DE-14-017-59 (0,2% PQ10, 2% Plantasil 4V) with reference shampoo HB-DE-14-017-60 (0,2% PQ10) in different variables

*externally done (Schrader Institute)

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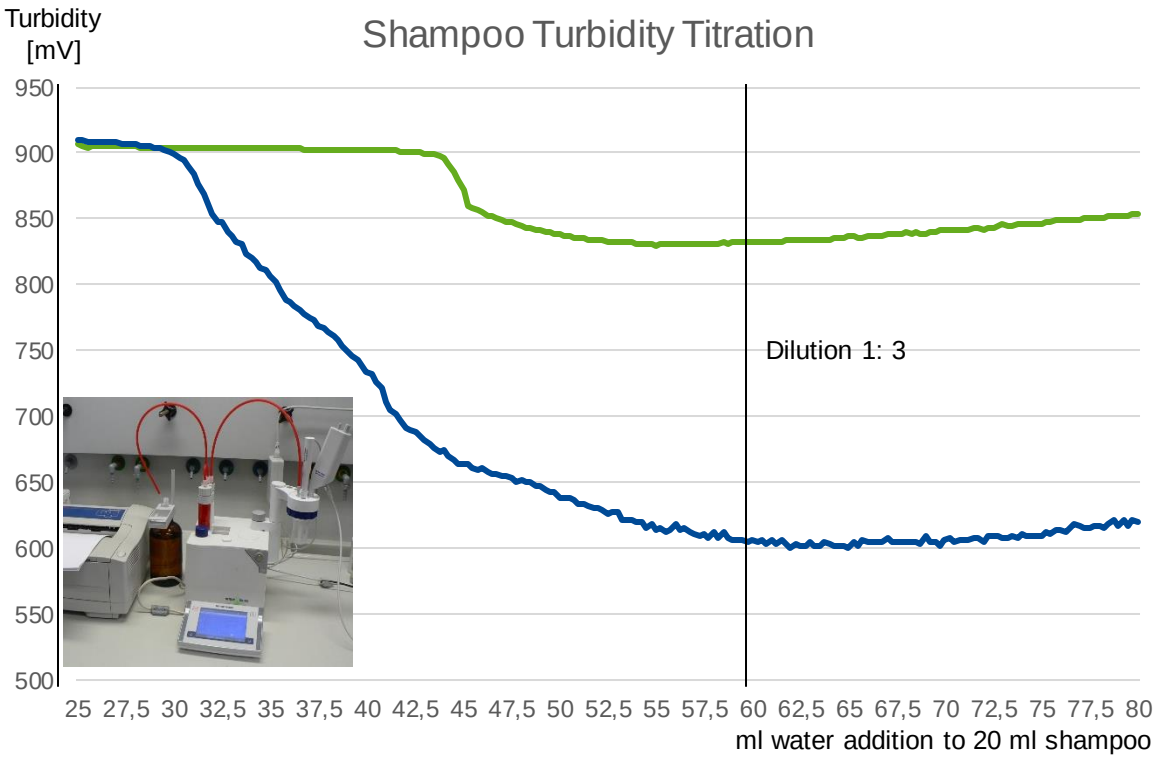
Plantasil® 4V
Proposed Mechanism

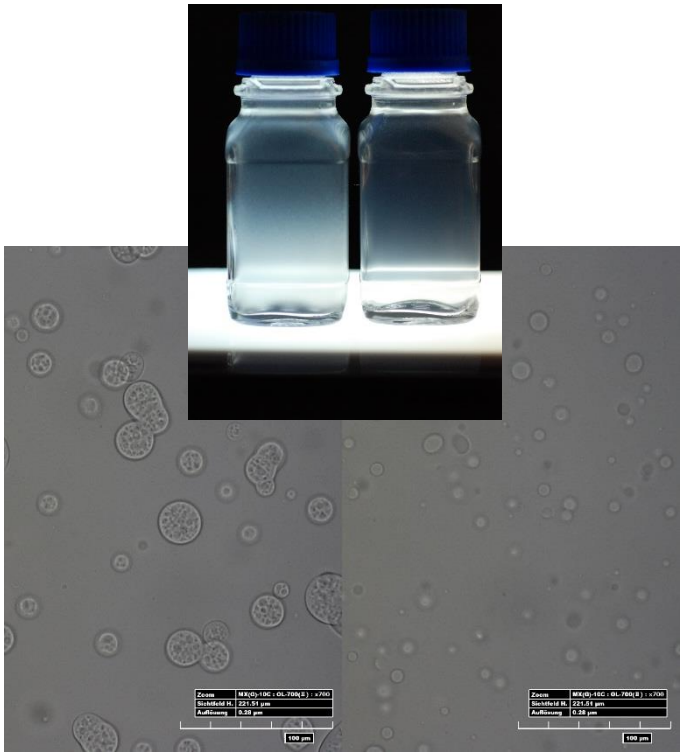




Shampoo Placebo
Dilution 1:3 with dem. water

Plantasil® 4V
Proposed Mechanism





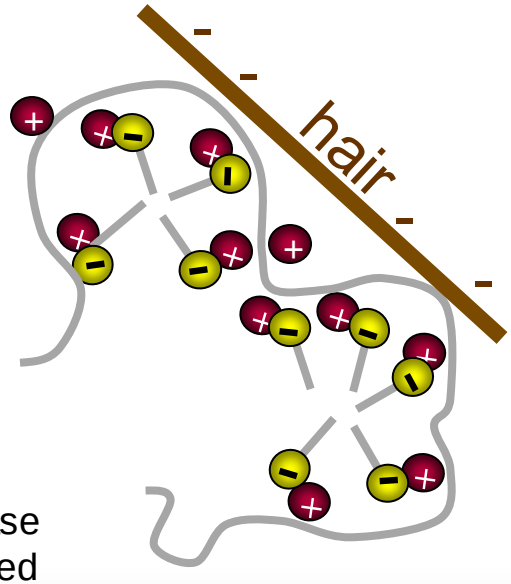
Shampoo P. 4 V **Shampoo Placebo**
Dilution 1:3 with dem. water

Plantasil® 4V significantly increases turbidity and "coacervate" volume in dilution

Plantasil® 4V
Proposed Mechanism

SLES + Cationic Cond. Polymer

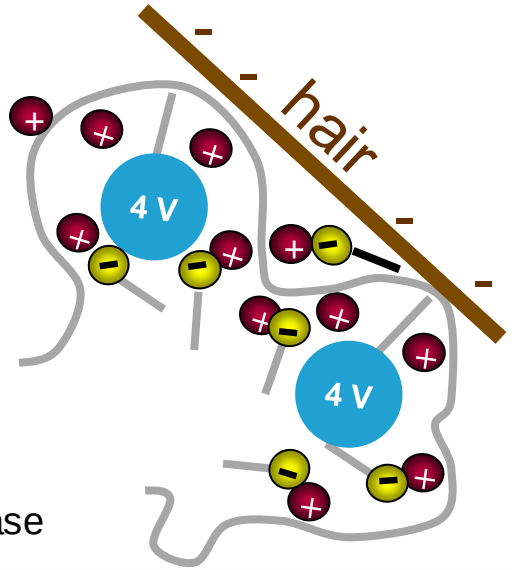
ON THE HAIR



Conditioning gel phase
Completely neutralized
-> Only „lipophilic-lipophilic Interaction“

SLES + Cationic Cond. Polymer + Plantasil® 4 V

ON THE HAIR

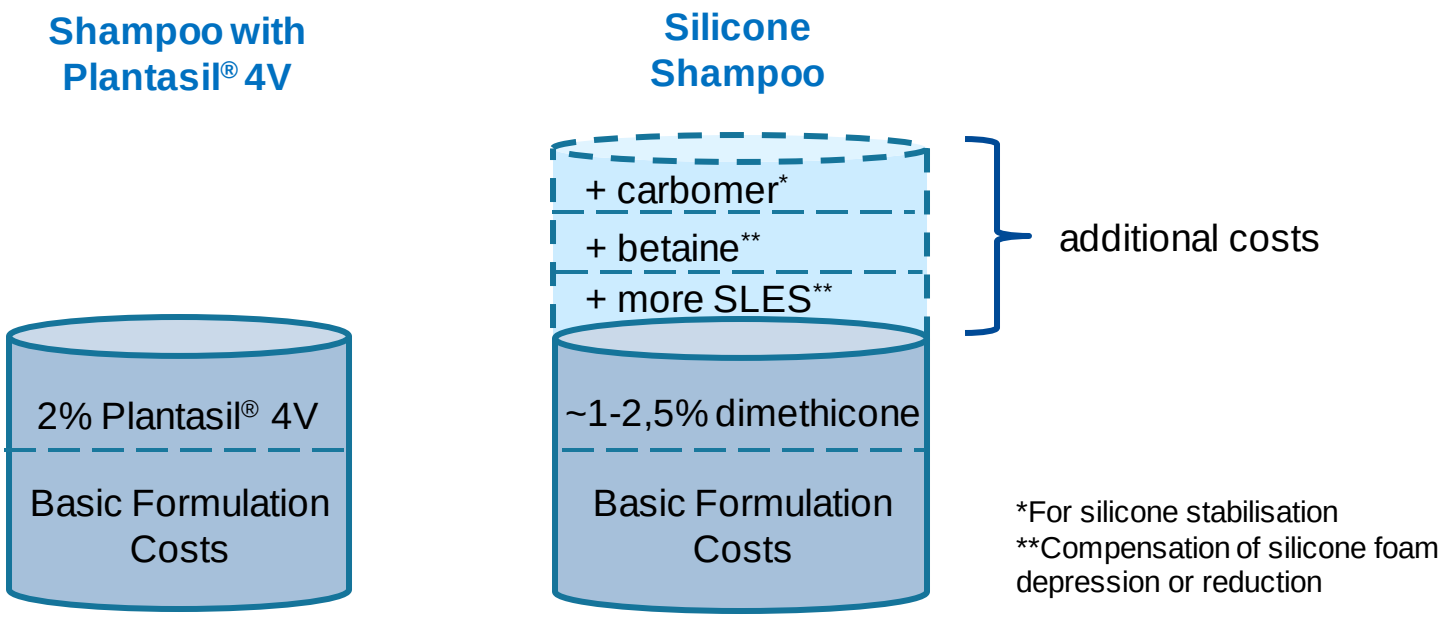


Conditioning gel phase
Partly neutralized
-> Free cationic charge +
„lipophilic-lipophilic Interaction“

Plantasil® 4 V shows increased deposition on (highly) damaged (anionic) hair

Plantasil® 4V
Cost competitiveness versus silicone shampoos

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Cost of Plantasil® 4V comparable to dimethicone

<u>but additional customer benefits of Plantasil® 4V :</u>

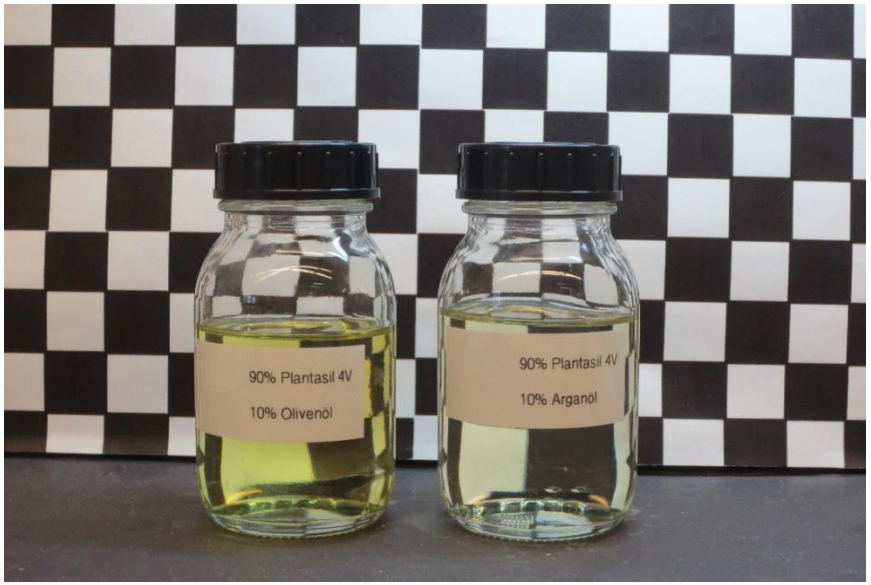
- **Cost savings (20-25% savings)**
- **Easy Handling**
- **Cold processable**
- **No need of polymer stabilizer**
- **Better biodegradability**

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Plantasil® 4V
Solubilisation Properties

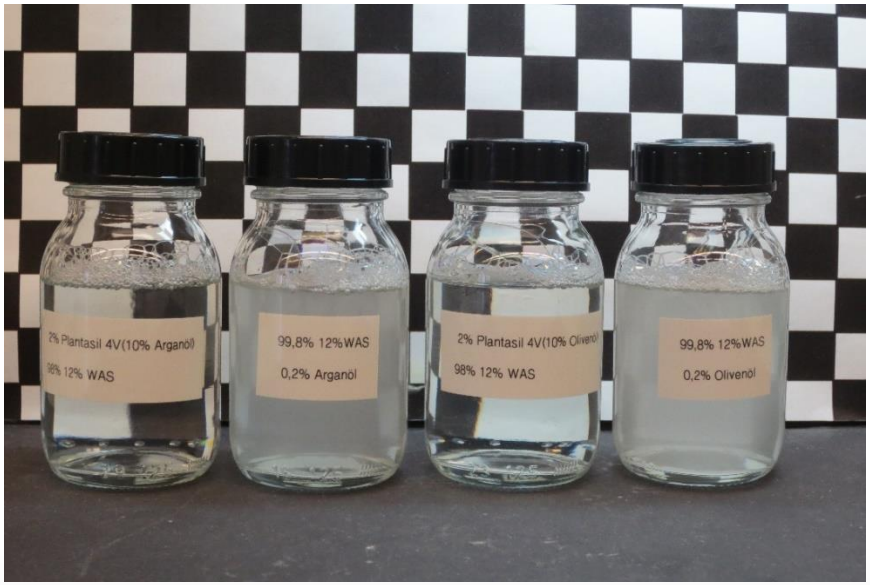
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Solubilisation of 10% oil in Plantasil® 4V



Olive oil Argan oil

Solubilisation of premix Plantasil® 4V + oil in SLES/CAPB 10:2



Argan oil Olive oil
Plantasil 4V no Plantasil 4V Plantasil 4V no Plantasil 4V

Plantasil® 4V offers clear solubilisation of oils in a standard surfactant base

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Plantasil® 4V
Our 4 Values Conditioning Booster

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1

Provides significant improvement on wet combing and **sensorial performance** on **different hair types**

2

High combing force reduction even at **higher** level of hair **damage**

3

Allows formulation of high conditioning shampoos, even with **low** surfactant content.

4

Formulation benefits

- Easy to formulate in cold process
- Salt thickening system possible.
- Compatibility with all relevant conditioning polymers
- No stabilization issues like with other hair care additives.
- Less impact on foaming properties compared to other conditioning additives.
- Additional solubilisation properties

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