



STEPANQUAT® Soleil

Better, Naturally

*A modern hair conditioning agent
that is better for your hair and the environment*

Patent Pending

Stepan 
Personal Care

A better story...



*For the **CONSUMER***



*For the **ENVIRONMENT***



*For the **FORMULATOR***





A better story for the **CONSUMER**

Understanding the consumer today

A majority of baby boomers to Generation Z consumers define themselves as green/clean/conscious beauty buyers

>50%

Of consumers
trust in labels
with...

Locally-sourced

Environmentally friendly

Natural

Almost half of consumers try to have a positive impact on the environment through daily actions

>33%

Of consumers
define “natural” as

Free from GMO’s

Healthier than non-natural

Today’s consumer will look for products for functionality, but equally important is their well-being

>25%

Of consumers

Buy eco-conscious products to feel good



Source: Euromonitor 2019



*A better story for the **CONSUMER***

STEPANQUAT Soleil...

- **...is derived directly from sunflower oil**
 - 🌻 That's an ingredient consumers actually know.
- **...and is locally sourced. And GMO-free**
 - 🌻 That is supporting EU farmers.
- **...is free from preservatives, drying alcohols, solvents and silicones**
 - 🌻 Just the necessary. Period.



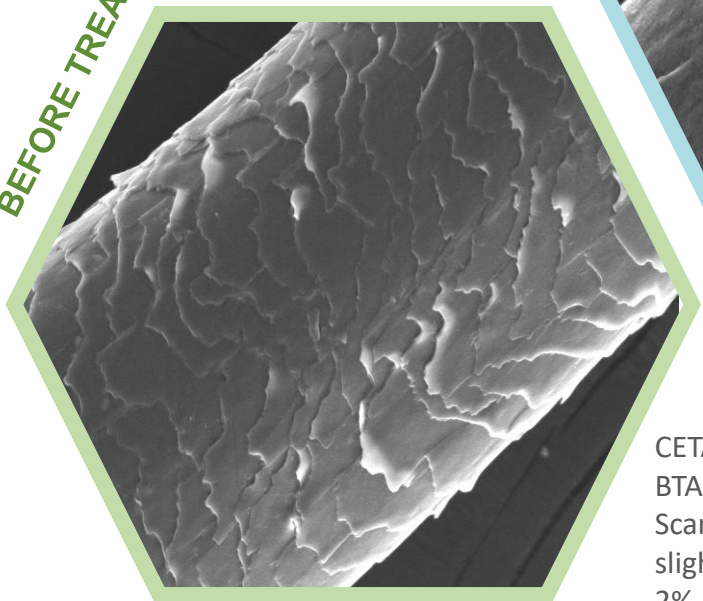


A better story for the **CONSUMER**

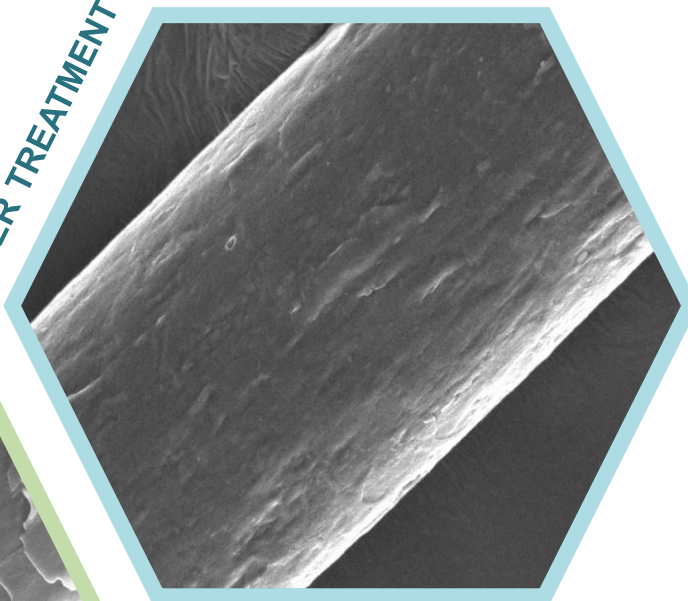
A high-performance conditioning agent for demanding consumers

STEPANQUAT Soleil smooths each individual hair strand, for super-soft, manageable hair.

BEFORE TREATMENT

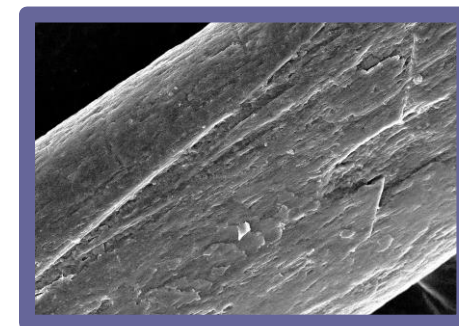


AFTER TREATMENT



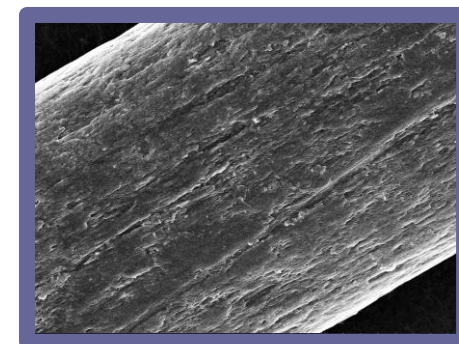
CETAC = cetrimonium chloride
BTAC = benhentrmonium chloride
Scanning Electron Microscopy images of Caucasian,
slightly bleached hair tresses treated with a
2% active conditioner at 1,000x magnification

CETAC



AFTER TREATMENT

BTAC

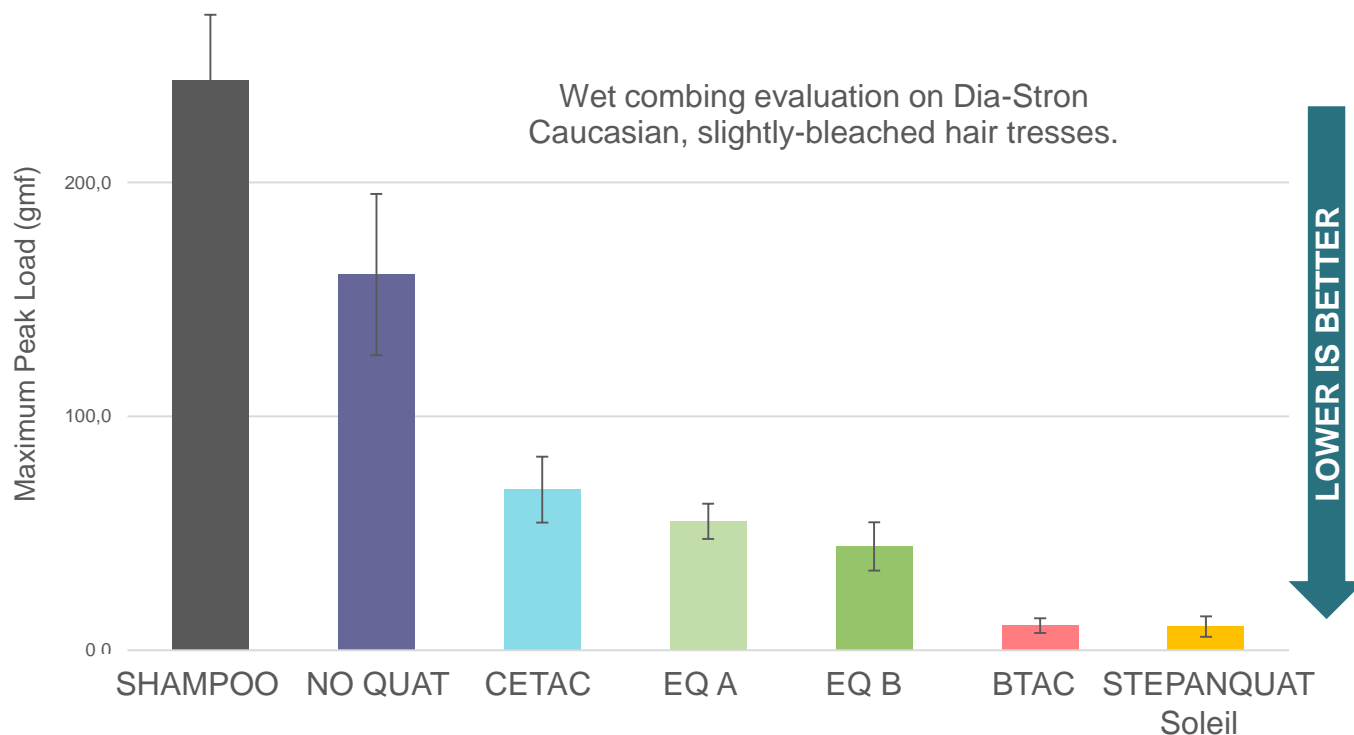




A better story for the **CONSUMER**

A high-performance conditioning agent for demanding consumers

STEPANQUAT Soleil allows for easy combing and shows equal performance to BTAC



Hair Conditioner Formula:

Ingredients	% by weight
Deionized Water	q.s. to 100
Hydroxyethylcellulose	0.70
Conditioning Active	2% active
Cetyl Alcohol	2.00
Potassium Chloride	0.50

CETAC = Cetrimonium Chloride
EQ A = Distearoylethyl Dimonium Chloride
EQ B = Dipalmitoylethyl Hydroxyethyl Ammonium Methosulfate
BTAC = Behentrimonium Chloride



A better story for the **CONSUMER**

A high performance conditioning agent for demanding consumers

STEPANQUAT Soleil possesses **great substantivity** while being easily removed during the next shampoo: **no build up!**

Modified rubine dye test: detection of cationics on keratin.

Images of Caucasian, slightly-bleached hair tresses treated with a 2% active conditioner



BEFORE

NO TREATMENT



AFTER TREATMENT

CONTROL
(shampoo only)



BTAC

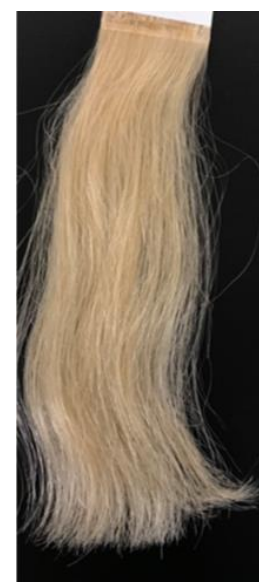


STEPANQUAT Soleil



AFTER 2nd SHAMPOO

STEPANQUAT Soleil
No build up effect





A better story for the ENVIRONMENT

STEPANQUAT Soleil...

- **...is derived from sunflower oil that is sourced locally**
 - 🌻 Not from the other side of the world!
- **...which is also renewable and sustainable**
 - 🌻 Stepan wants to protect our planet!
- **...is readily biodegradable***
- **...is 100% actives, requires less trucks on the roads**
 - 🌻 That's better for the air quality!

*based on similar esterquats.



For the FORMULATOR

STEPANQUAT Soleil...

- ...is China IECIC listed
- ...is a 100% actives liquid
 - ☀ Easy to use, with no special handling requirements.
- ...does not have any use level restriction in Europe
- ...is quicker and safer to use
- ...is versatile for use in multiple formats
 - ☀ Explore, enjoy, be creative!

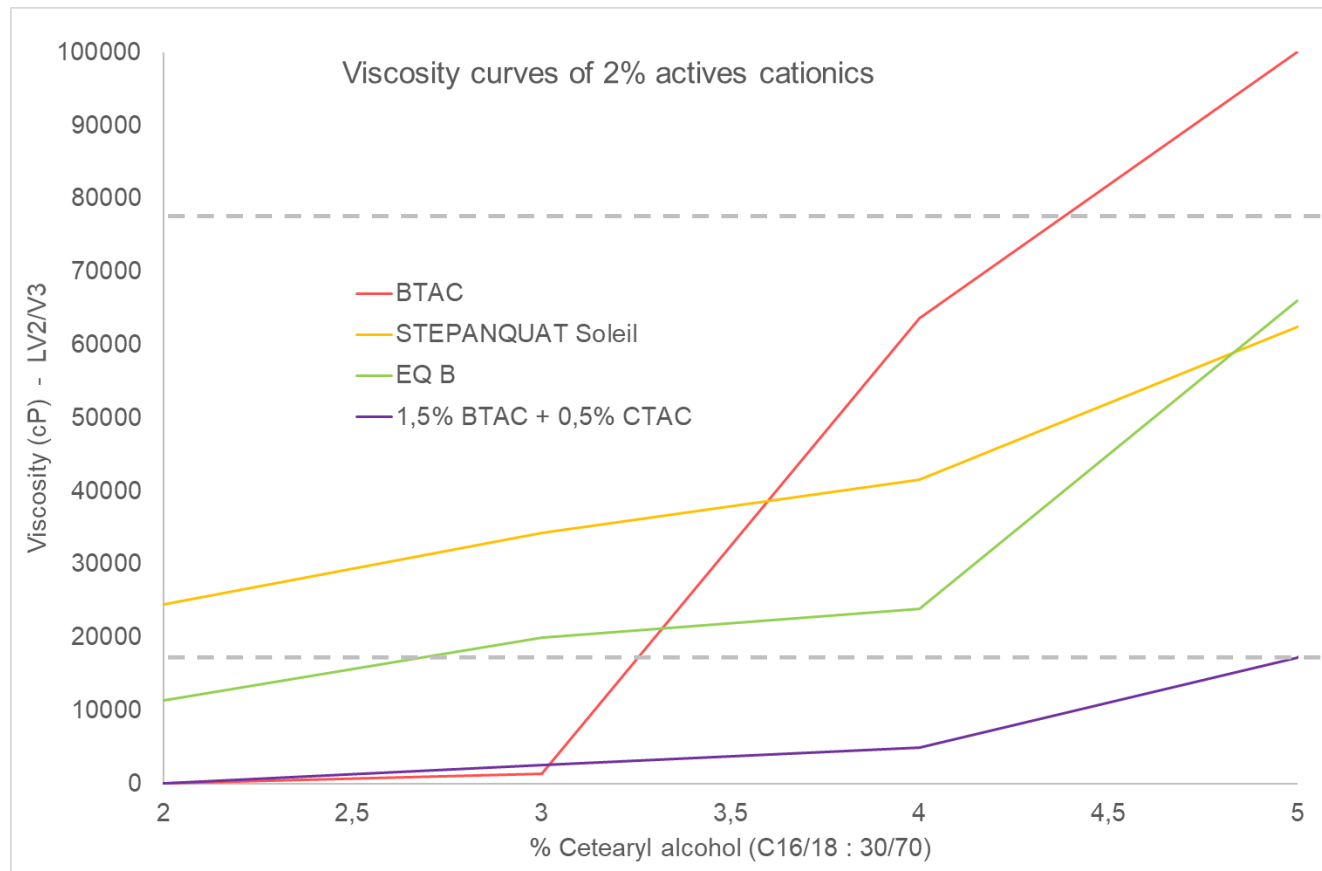
*based on similar esterquats.



Formulation guidelines – building viscosity

A regular viscosity building behavior:

STEPANQUAT Soleil brings viscosity with lower amounts of fatty alcohol compared to other cationics and offers a gradual thickening pattern



Soleil provides the target viscosity for conditioners and masks at 2-5% cetearyl alcohol.

Viscosity range of benchmark conditioners & masks products



Formulation guidelines – making a conditioner



Phase	Ingredients	w/w %
A	Aqua/Water	Up to 100
	Euxyl K712 – Potassium Sorbate & Sodium Benzoate (Schülke & Mayr SA)	0,4
B	Cetearyl Alcohol	5,0
	STEPANQUAT Soleil – Dioleoyl ethyl Hydroxyethylmonium Methosulfate & Sunflower Seed Oil Glycerides	2,0
	Helianthus Anuus (Sunflower) Seed Oil	1,2
C	Tocopherol	0,2
	Euxyl K712 – Sodium Benzoate & Potassium Sorbate (Schülke & Mayr SA)	0,4
	Fragrance – Silky Touch (Mane & Fils SA)	0,2

Phase A: Warm water until 65°C then add Euxyl K712.

Phase B: Melt ingredients together at 65°C, then add to Phase A.

Use a dispersion mix to emulsify.

Slowly cool down the emulsion until 40°C.

Phase C: Introduce ingredients in given order.

Control and adjust pH, if necessary, with citric acid.

Controls: pH = 2,9 | Viscosity (Brookfield, LV2 V3, at 20°C) = 32100 cP

Euxyl K712 needs to be added at two different times to maintain the viscosity.

Alternative preservatives for a single addition: Benzyl Alcohol & Ethylhexyl Glycerine or Phenoxyethanol.



Formulation guidelines – making a hair mask



Phase	Ingredients	w/w %
A	Aqua/Water	Up to 100
B	Cetearyl Alcohol	5,0
	STEPANQUAT Soleil – Dioleoyl ethyl Hydroxyethylmonium Methosulfate & Sunflower Seed Oil Glycerides	2,0
	Butyrospermum Parkii (Shea) butter	0,9
C	Tocopherol	0,2
	Euxyl K900 – Benzyl Alcohol & Ethylhexyl Glycerine (Schülke & Mayr SA)	0,8
	Fragrance – Silky Touch (Mane & Fils SA)	0,2

Phase A: Warm water until 65°C.

Phase B: Melt ingredients together at 65°C, then add to Phase A.

Use a dispersion mix to emulsify.

Slowly cool down the emulsion until 40°C.

Phase C: Introduce ingredients in given order.

Control and adjust pH, if necessary, with citric acid.

Controls: pH = 2,8 | Viscosity (Brookfield, LV2 V3, at 20°C) = 37 800 cP

Sodium Benzoate & Potassium Sorbate have a strong negative impact on the viscosity and are consequently not recommended for hair masks



Formulation guidelines – making a 2 in 1 shampoo



Phase	Ingredients	w/w %
A	Aqua/Water	Up to 100
	Hydroxyethylcellulose	1,0
	AMPHOSOL CG-UN Cocamidopropyl Betaine	20,0
B	STEPANQUAT Soleil – Dioleoyl ethyl Hydroxyethylmonium Methosulfate & Sunflower Seed Oil Glycerides	1,5
	STEPAN-MILD GCC – Glyceryl Caprylate/Caprate	1,0
	Butyrospermum Parkii (Shea) butter	0,4
	Cetyl Alcohol	3,0
	Tocopherol	0,1
C	STEPANOL WA-EXTRA-E – Sodium Lauryl Sulfate	30,0
	Citric Acid	Qs pH = 4
D	Euxyl K712 – Sodium Benzoate & Potassium Sorbate (Schülke & Mayr SA)	0,9
	Fragrance – Kiwi (Mane & Fils SA)	0,3
	Citric Acid	Qs

Phase A: Warm water until 60°C, add hydroxyethylcellulose (HEC) and mix until completely dispersed before adding Cocamidopropyl Betaine (CAPB).

Phase B: Melt ingredients together at 65°C, then add to Phase A and mix until homogeneous.

Phase C: Adjust SLS pH down to 4 before adding to Phase A+B. Start to cool down.

Phase D: Add preservative then adjust viscosity if necessary with sodium chloride, then add fragrance and mix until homogeneous. Adjust pH to 4,5 if necessary.

Controls: pH = 4,5 | Viscosity (Brookfield, LV3 V12, at 20°C) = 28 500cP

NB: HEC recommended polymer due to compatibility with cationics and ability to create a stabilizing network. Anionic/CAPB ratio and surfactants' actives level are key for thickening and stability.

Try to reduce as much as possible the incorporation of air during the process because it remains trapped.



Explore, enjoy, Be Creative!

Bear to Beard – Conditioning serum

Phase	Ingredients	w/w %
A	Olea Europea (Olive) Oil	17,2
	Corylus Avellana (Hazelnut) Seed Oil	7,4
	Balanites Roxburghii (Date) Seed Oil	7,4
B	STEPAN-MILD GCC – Glyceryl Caprylate/Caprate	7,4
	STEPANQUAT Soleil – Dioleoyl ethyl Hydroxyethylmonium Methosulfate & Sunflower Seed Oil Glycerides	7,4
	STEPAN-MILD L3-G/MB – Lauryl Lactyl Lactate	5,0
	Oleyl Alcohol	24,6
	NEOBEE M-20 – Propylene Glycol Di (Caprylate/Caprate)	22,1
	Fragrance – Dandy Moderne (Mane & Fils SA)	1,5
	Tocopherol	0,1

Operate at room temperature and gentle mixing

Phase A: Mix the vegetable oils together until homogeneous

Phase B: Add each ingredient to phase A in given order


Controls: Appearance = clear, green olive to brown oil

Alternatives to NEOBEE M-20: NEOBEE M-5 COSMETIC (Caprylic/Capric Triglycerides), Isopropyl Myristate, Isopropyl Palmitate, Dicaprylyl Carbonate, Propylene Glycol.



Explore, enjoy, Be Creative!

Abracada'Bar – Solid conditioner



Phase	Ingredients	w/w %
A	Butyrospermum Parkii (Shea) Butter	3,5
	Ascorbyl Palmitate (and) Tocopherol – Sunflower Seed Wax (Kahl GmbH & Co. K.G.)	2,0
	Stearyl Alcohol	23,0
	STEPAN-MILD GCC – Glyceryl Caprylate/Caprate	7,4
	NEOBEE M-5 COSMETIC – Caprylic/Capric Triglycerides	4,0
	Helianthus Annuus (Sunflower) Seed Oil	6,0
B	STEPANQUAT Soleil – Dioleoyl ethyl Hydroxyethylmonium Methosulfate & Sunflower Seed Oil Glycerides	14,0
	Sucrose Stearate – Sisterna SP70-C (Sisterna B.V.)	8,0
	Oryza Sativa (Rice) Starch – NativaCare 8600 (Ingredion)	25,0
	Decyl Glucoside – Oramix NS 10 (SEPPIC SA)	8,0
C	Lactic Acid	Qs
	Fragrance – Lime Coco (Technico Flor SA)	0,1

Phase A: Add all ingredients in given order then melt at 80°C

Phase B: Add each ingredient to phase A in given order and increase mixing speed to ensure proper dispersion of sucrose stearate and starch. Decyl glucoside will help dispersing. Cool down to 60°C after its introduction in order to avoid excess evaporation of its water.

Phase C: Control and adjust pH to 3,5-4 with lactic acid. Add fragrance at 60°C and pour into silicone molds. Once completely cooled down and solidified, remove the bars from the mold

NB: a dye can also be added for more colorful bars

Controls: Appearance = white, smooth solid



STEPANQUAT® Soleil

INCI Name: Dioleoyl ethyl Hydroxyethylmonium Methosulfate
(and) Sunflower Seed Oil Glycerides
Form at 25°C: Flowable Liquid
Actives: 100%
Preservative: None

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