

Esaflo[®] ZERO-X

Sustainable cationic guar.

ESAFLO[®] ZERO-X technology is a patented water-smart process, to obtain cosmetic grade cationic guar derivatives:

Product name	Brookfield Viscosity ¹	Nitrogen Content	pH ²	Self-hydrating
ESAFLO [®] ZERO-X	1000-3000	1.3-1.7	9-11	yes
ESAFLO [®] ZERO-XB	1000-3000	1.3-1.7	9-11	no

¹ Brookfield RVT RVF 20 rpm at 20 °C, mPa*s

² Aqueous solution

The two available grades differ only in terms of hydration procedure, thus meeting different customers' manufacturing needs.

INCI name:

Guar Hydroxypropyltrimonium Chloride

Summary of benefits

- Conditioning effects on hair & skin
- Superior hair combability & improved hair feel
- Enhanced deposition of water-insoluble actives
- Foam booster
- Thickening aqueous & surfactant-based solutions
- Natural origin, eco-friendly and sustainable

Applications

Thanks to their cationic character, ESAFLOR[®] interact with keratin providing a conditioning effect on hair and skin.

- **HAIR CARE:** ideal for shampoos, these conditioning polymers offer excellent detangling properties and hair feel. In restructuring balms ESAFLOR[®] help to restore natural softness and combability of the hair.
- **BATH & SHOWER:** Valuable ingredients also for toiletries and skin care products, they leave the skin silky and soft. They are therefore suitable for shower gels, liquid soaps and body washes. The addition of ESAFLOR[®] in skin cleansing formulations can also help in reducing the negative effects of harsh soaps and surfactants.

Formulation tips

ESAFLO[®] are extremely easy to use. Cationic guar combine compatibility with most anionic and amphoteric surfactants with a broad pH tolerance and work in synergy with sodium chloride to build viscosity in detergent systems. To avoid any possible incompatibility between cationic guar derivatives and the surfactant system, the following order of addition is recommended: add cationic guar into water; adjust pH to about 6.0, if required; add amphoteric or non-ionic surfactants and, once homogeneous, add anionic surfactants; add the remaining ingredients of the formulation. Cationic guar has to be added to well-agitated water at room temperature and mixed until complete dispersion. ESAFLOR[®] ZERO-XB develops viscosity when pH is adjusted to 6.0 or lower, whereas ESAFLOR[®] ZERO-X does not require any pH adjustment. Stirring has to be maintained for about 20 minutes to ensure complete hydration of the polymer, before adding the other ingredients.

COSMOS
compliant

HALAL
certified

GMO free



Natural Conditioning Shampoo – LAMCOS146

Phase	Ingredient name	% w/w
A		
1	Aqua (Water)	20.0
2	ESAFLOR® ZERO-X	0.5
B		
1	Aqua (Water)	To 100
2	Sodium Coco-Sulfate	5.0
C		
1	Glycerin	4.0
2	Glycerin, Aqua, Sodium Levulinate, Sodium Anisate	3.5
3	Sodium Phytate, Aqua, Alcohol	0.1
D		
1	Coco-Glucoside, Aqua (~ 50% a.m.)	8.0
2	Lauryl Glucoside, Aqua (~ 50% a.m.)	6.0
3	Aqua, Coco-Glucoside, Glyceryl Oleate, Citric Acid, Tocopherol, Hydrogenated Palm Glycerides Citrate	1.0
4	ALPICARE GL 612	4.2
5	Parfum (Fragrance)	0.5

Manufacturing procedure:

Premix phase A separately in a support vessel: disperse A2 in water under vigorous stirring. Keep stirring for ~ 20' to ensure the complete hydration of the polymer. In the main vessel, premix B1-B2, heat up to 60°C and stir until completely dissolved. Add C1-C3 in given order, while stirring, until completely dissolved. Premix phase D separately and add to phase B+C under stirring. Add phase A to the main vessel, then adjust pH and viscosity (phase E).

General characteristics:

Appearance: colourless to light yellow, transparent gel
 pH: ~5-5.5
 Viscosity (Brookfield RVT, 10 RPM, 25°C): 1500 – 6000 mPa*s

Repairing hand cream – LAMCOS169

Phase	Ingredient name	% w/w
A		
1	Aqua (Water)	To 100
2	Glycerin	3.0
3	ESAFLOR® ZERO-X	1.0
B		
1	Simmondsia Chinensis Oil	5.0
2	Sodium Coco-Sulfate	6.0
3	Butirospermum Parkii Butter	5.0
4	Cetearyl Alcohol	3.0
5	Bis-PEG/PPG-16/16 Dimethicone, Caprylic/Capric Triglyceride	4.0
C		
1	VISCOLAM® AT 100 P	2.0
D		
1	Parfum (Fragrance)	q.s.
2	Preservatives	q.s.
3	Citric Acid, 10% soln.	To pH 5.5

Manufacturing procedure:

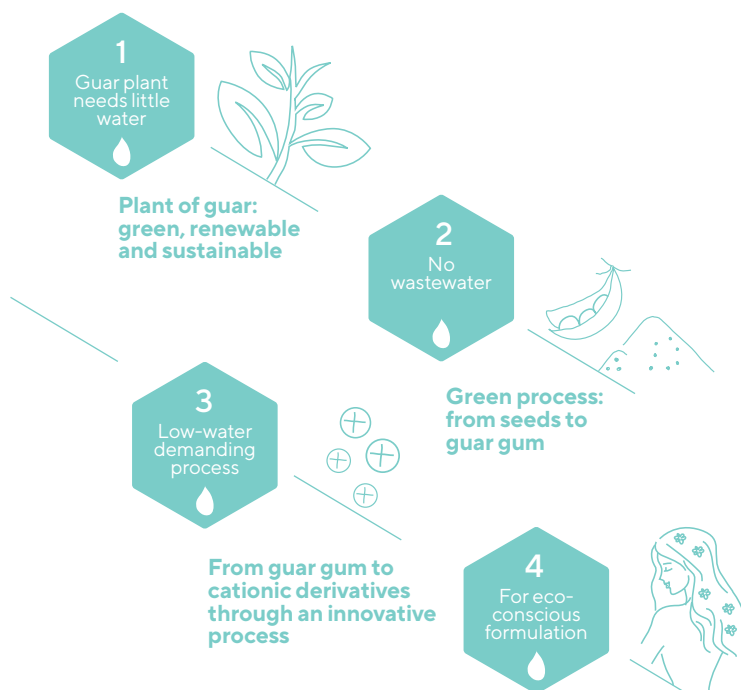
In the main vessel, mix ingredients A1-2. Add A3 under vigorous stirring and keep stirring for ~20 mins, to ensure the complete hydration of the polymer. Heat the vessel to 55-60°C.
 In a support vessel, mix ingredients B1-5 and heat to 55-60°C, until completely melted and uniform. Add phase B into A and homogenize until smooth.
 After cooling below 35°C add Viscolam® AT 100 P, and homogenize with a turbo-emulsifier until a smooth and uniform emulsion is obtained. Add ingredients D1-2 under gentle stirring and correct pH to 5.5 with citric acid.

General Characteristics:

Appearance: white cream
 pH: ~ 5.5
 Viscosity (Brookfield RVT + Helipath, 25°C, S92, 10 rpm, 30''): 20000 – 30000 mPa*s

Sustainability: every drop counts

Water is a paramount element for the preservation of life. If not properly managed, shortages of this precious resource will characterize the near future. Fully engaged in minimizing industrial water consumption, Lamberti developed ESAFLOR® ZERO-X technology, a sustainable and water-saving process.



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Cationic guar derivatives provide conditioning benefits

