Esaflor® EC

More than a conditioner

There is a common desire on both ends, formulators and consumers, for natural and highly performing ingredients for their personal care products.
ESAFLOR® EC guars are naturally derived cationic polymers that convey the dual benefit of conditioning and thickening to your hair and body care formulations.
The polymeric backbone is obtained from the guar plant, an abundant and renewable source. The cationic derivatives of this high molecular weight, fully water-soluble polysaccharide are able to thicken both aqueous and surfactant-based solutions. Thanks to their cationic charge, they provide excellent conditioning properties to hair and skin, reducing in the meanwhile the negative effects of anionic surfactants and soaps.
ESAFLOR® EC products meet also the needs of formulators interested in bio-based and certified cosmetics, being Cosmos (use in hair products only), Halal and GMO free.

INCI name: Guar Hydroxypropyltrimonium Chloride

Summary of benefits

- Hair & skin conditioning effect
- Improved hair combability and detangling
- Soft and smooth skin feel
- Enhanced deposition of water-insoluble actives
- Foam booster
- Viscosity enhancer
- Natural and renewable origin

Applications

ESAFLOR® EC products can deliver multiple formulation benefits:

- CONDITIONING EFFECT: ESAFLOR® EC series can meet all conditioning requirements. ESAFLOR® EC 3 and EC 4 provide optimal conditioning, for daily use while ESAFLOR® EC 5 is recommended for lighter conditioning or thin hair.
- DEPOSITION-AID: upon rinse-off and dilution, ESAFLOR® EC form a complex (coacervate) with anionic surfactants, which entangles water-insoluble ingredients, maximizing their delivery onto hair and skin, increasing actives deposition and substantivity.
- VISCOSITY ENHANCEMENT: thanks to their high molecular weight, ESAFLOR® EC products increase the viscosity of formulations, even at low concentrations. They are not affected by salt addition and they can work together with sodium chloride to build viscosity in surfactant systems.
- FOAM BOOSTING: foam texture and volume are of primary importance to consumers. ESAFLOR® EC can enhance and stabilize the foam generated by surfactants systems, improving the sensorial attributes of formulations.

ESAFLOR® EC are used in shampoos, conditioners, moisturizing lotions and creams, body washes and liquid soaps.

Formulation tips

ESAFLOR® EC powders can be easily dispersed in water at room temperature, under stirring.
Viscosity develops when pH is adjusted to 5 – 6 or less; 20 minutes' stirring time is recommended, to ensure the complete hydration of the polymer.
ESAFLOR® EC 4 is pre-neutralized and does not require any pH adjustment.
To avoid any possible incompatibility between cationic ESAFLOR® EC and the surfactant system, the following order of addition is suggested: water, cationic guar, pH adjuster, amphoteric surfactants, non-ionic surfactants, anionic surfactants, other ingredients, final pH adjuster.
Typical use level: 0.1-0.5 %.

Product name	Brookfield Viscosity[1]	Nitrogen Content	pH[2]	Self-hydrating
ESAFLOR® EC 3	3000 - 4500	1.3 - 1.7	9 - 11	NO
ESAFLOR® EC 4	3000 - 4500	1.3 - 1.7	5 - 7	YES
ESAFLOR® EC 5	25 - 65	1.1 – 1.5	9 - 11	NO

[1] Brookfield RVT RVF 20 rpm at 20 °C, mPa*s [2] Aqueous solution

Lamberti
personal care

SOFT TOUCH BODY WASH - LAMCOS 196

Phase	Ingredient name	% w/w
A		
1	Aqua (Water)	To 100
2	**VISCOLAM® GD19**	5.0
3	Tetrasodium EDTA	0.05
4	Sodium Laureth Sulfate (~ 27% a.m.)	35.0
5	Glycerin	2.0
6	NaOH, 20% soln.	To pH ~ 5.0
7	Cocamidopropyl Betaine (~ 30% a.m.)	5.0
B		
1	Aqua (Water)	20.0
2	**ESAFLOR® EC 3**	0.4
3	Citric Acid, 20% soln.	To pH ~ 5.5
C		
1	**STEROL CC/595**	1.5
2	Styrene/Acrylates Copolymer, Aqua (Water)	0.1
3	Sodium Benzoate	0.3
4	Parfum (Fragrance)	0.5
5	Sodium Chloride	1.0
6	Glycol Distearate, Laureth-4, Cocamidopropyl Betaine	2.0
7	Citric Acid, 20% soln.	To pH ~ 5.0

Manufacturing procedure:
In the main vessel, under stirring, add VISCOLAM® GD19 into water, followed by A3-A5. Adjust pH to ~ 5.0 if needed, then add A7. In a support vessel, add B2 into water with vigorous stirring; adjust pH to ~ 5.5 with B3, then keep stirring for ~ 20 min to ensure the complete hydration of the polymer. Add phase B into phase A under stirring, then add ingredients of phase C in given order, mixing well. Adjust pH to ~ 5, if necessary.

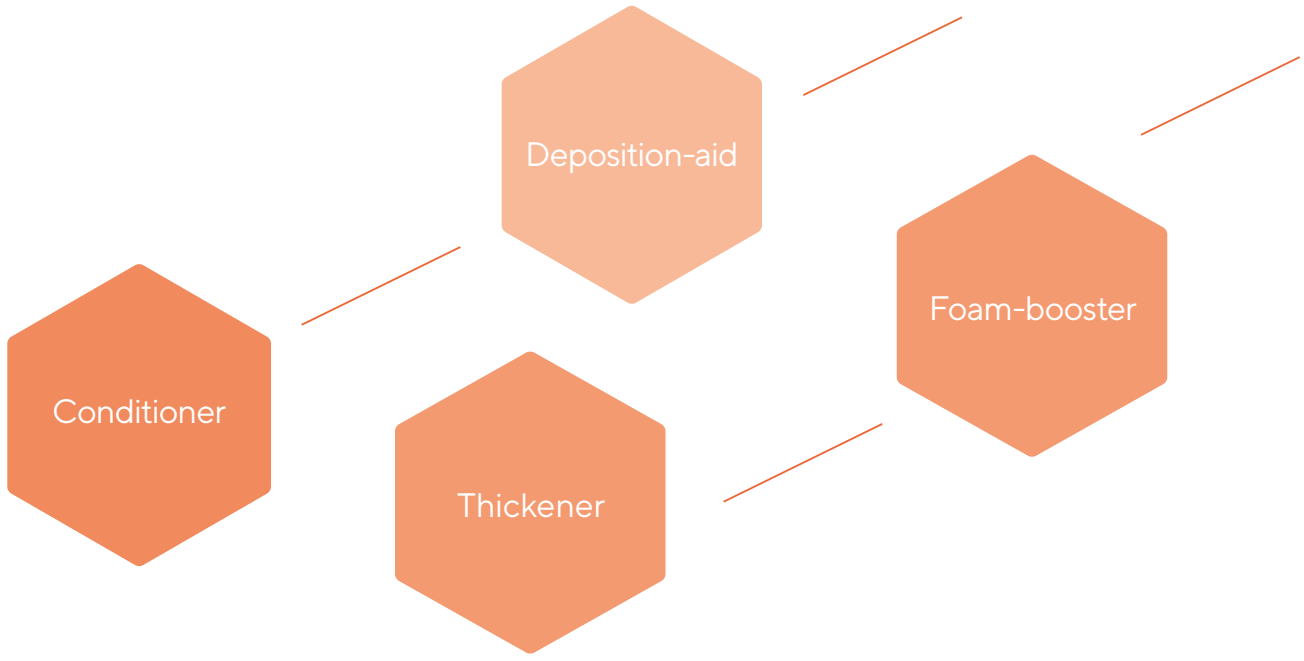
General characteristics:
Appearance: thick opaque pearlescent detergent
pH: ~ 5.0
Viscosity (Brookfield RVT, 20rpm, 25°C): ~ 7000 mPa*s

SMOOTH & SHINE SHAMPOO - LAMCOS 197

Phase	Ingredient name	% w/w
A		
1	Aqua (Water)	To 100
2	Glycerin	2.0
3	**ESAFLOR® EC 4**	0.3
B		
1	Sodium Coco-Sulfate	23.0
2	Lauryl Glucoside	8.0
3	**EUCAROL® AGE/EC MB**	10.0
4	Glyceryl Oleate	2.0
5	Sorbitan Sesquicaprylate	1.0
6	Sodium Benzoate	Q.S.
7	Parfum (Fragrance)	q.s.
8	Citric Acid, 20% soln.	To pH ~ 5.0

Manufacturing procedure:
Add A2 into water, then add A3 under vigorous stirring at room temperature and mix until dispersed. Keep stirring for ~ 20' to ensure the complete hydration of the polymer. Add ingredients of phase B in given order and adjust pH to ~ 5.0 with a citric acid solution.

General Characteristics:
Appearance: off-white viscous liquid
pH : ~ 5.0
Viscosity (Brookfield RVT, 5 rpm, 25°C) : ~ 7000 mPa*s



For more information please contact:

Personal Care Headquarter | Via Marsala, 38/d | 21013 Gallarate (VA) | Italy
T + 39 0331 715 824 | cosmetics@lamberti.com
personalcare.lamberti.com