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*The Best ingredients for a beautiful life*

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## ESAFLOR PFT

TRANSPARENT, WATER-SMART GUAR DERIVATIVE  
FOR ECO-CONSCIOUS FORMULATORS

ESAFLOR® PFT is a sustainable derivative of natural guar gum specifically developed for transparent formulations. This product is obtained through ESAFLOR® ZERO-X technology, a patented water-smart process to obtain guar derivatives suitable for personal care formulations. Besides the significant water saving, supplementary advantages of this proprietary process are a higher yield, a relevant reduction of waste and energy consumption.

### APPLICATIONS

Guar derivatives manufactured with ESAFLOR® ZERO-X technology can be

used in a wide variety of personal care applications. ESAFLOR® PFT is a cationic derivative of hydroxypropyl guar, specifically developed for transparent formulations. Thanks to its cationic character it interacts with keratin, providing hair and skin conditioning benefits. ESAFLOR® PFT is ideal for crystal-clear shampoos and 2-in-1 formulations, delivering light conditioning, enhanced combability and improved hair feel. It can be a valuable ingredient also for toiletries and skin care products, providing formulators with a proper tool to achieve smooth conditioning and excellent skin feel. In shower gels, liquid



INCI Name :  
HYDROXYPROPYL GUAR  
HYDROXYPROPYLTRIMONIUM  
CHLORIDE

soaps and body washes, it ensures skin-conditioning performances, leaving the skin silky and soft. The addition of ESAFLOR® PFT in skin cleansing formulations can also help in reducing the negative effects of harsh soaps and surfactants.



### Summary of benefits

- Ideal for transparent formulations
- Light conditioning
- Enhanced wet combability
- No build-up and no heavy feel
- Smooth and soft on hair and skin
- Improved foam characteristics
- Natural origin, eco-friendly and sustainable

### MICELLAR SHAMPOO - LAMCOS 158

Phase	Ingredient name	% w/w
1	Aqua (Water)	To 100
2	Disodium EDTA	0.05
3	ESAFLOR® PFT	0.5
4	Citric Acid (20% solution)	To ~pH 5.5
5	Cocamidopropyl Betaine (30% a.m.)	9.3
6	Ammonium Lauryl Sulfate (27% a.m.)	45.3
7	Decyl glucoside (50% a.m.)	3.0
8	Panthenol	2.0
9	Sodium Benzoate	0.3
10	Parfum (Fragrance)	0.3
11	Sodium Chloride	q.s.
12	Citric Acid (20% solution)	To ~pH 5.0

### Manufacturing Procedure:

Add A2 add A3 into water under vigorous stirring at room temperature and mix until dispersed. Adjust pH to ~ 5.5, then stir for ~ 20 min to ensure the complete hydration of the polymer. Add remaining ingredients in given order, while stirring. After each addition, stir until homogeneous. Adjust pH to 5.0 with a citric acid solution.

### General Characteristics:

Appearance: thick clear detergent  
pH: ~ 5.0

Viscosity (Brookfield RVT, 20rpm, 25°C): ~3500 mPa\*s



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## SOOTHING SHOWER GEL - LAMCOS 159

Phase	Ingredient name	% w/w
Phase A		
1	Aqua (Water)	To 100
2	Glycerin	3.0
3	Disodium EDTA	0.05
4	<b>VISCOLAM® CL5</b>	3.0
5	Sodium Laureth Sulfate (27% a.m.)	33.3
6	Cocamidopropyl Betaine (30% a.m.)	10.0
Phase B		
1	Aqua (Water)	20.0
2	<b>ESAFLOR® PFT</b>	0.2
3	Citric Acid (20% solution)	To ~pH 5.5
Phase C		
1	ALPICARE NS	1.0
2	Parfum (Fragrance)	0.5
Phase D		
1	Sodium Benzoate	0.4
2	Citric Acid (20% solution)	To ~pH 5.0
3	Jjoba Esters (beads)	0.5

### Manufacturing Procedure:

In the main vessel, under stirring, add ingredients A1-A6. Mix well after every addition, until a homogeneous mixture is obtained. In a support vessel, add B2 into water with vigorous stirring; adjust pH to ~ 5.5, then stir for ~ 20 min to ensure the complete hydration of the polymer. Add phase B into phase A under stirring. In another support vessel, premix ingredients C1 and C2 until a clear solution is obtained. Add phase C into phase A under stirring. Add ingredient D1, then adjust pH to ~ 5, if necessary, and add D3 with gentle mixing.

### General Characteristics:

Appearance: thick clear detergent

pH: ~ 5

Viscosity (Brookfield RVT, 20rpm, 25°C): ~ 6000 mPa\*s

### FORMULATION TIPS

ESAFLOR® PFT is water-dispersible. Add ESAFLOR® PFT to well-agitated water at room temperature and mix until dispersed. Viscosity develops when pH is adjusted to ~5.5-6 or less. Continue stirring for 15-20 minutes to ensure complete hydration of the polymer, then add the remaining ingredients.

To avoid any possible incompatibility between cationic guar derivatives and the surfactant system, the following order of addition is recommended: add ESAFLOR® PFT into water; adjust pH to ~5.5; add amphoteric or non-ionic surfactants and, once homogeneous, add anionic surfactants; add the remaining ingredients of the formulation.

ESAFLOR® PFT is not sensitive to electrolytes and it does not affect the appearance and rheology of the surfactant system.

### SUSTAINABILITY

Next to air, water is the most important element for the preservation of life. Water is a finite resource which, if not properly managed, will result in shortages in the near future. Companies' ability to reduce industrial water consumption plays a pivotal role to mitigate these impending shortages. Fully engaged in this important challenge, Lamberti developed ESAFLOR® ZERO-X technology, a sustainable and water-saving process.

Everything starts from the guar plant, a drought-tolerant legume that requires very little water and is an economically important pulse crop of India. A part of the seeds of this renewable vegetable is then transformed by Lamberti into guar gum, without use of chemicals and according to a water-smart process, in its up-to-date Indian plant. This natural gum is the backbone of ESAFLOR® PFT, a double substituted guar produced through ESAFLOR® ZERO-X technology that allows saving water, also avoiding the corresponding need of waste-water treatment. Patented ESAFLOR® ZERO-X technology reduces CO2 emission, energy and raw material consumption at the same time.