MINASOLVE®
BIO-INGREDIENTS FOR YOUR APPLICATIONS

Technical Data Sheet
March 2020 – V6

E-Leen
Green B

E-Leen Green B is a **patented** dual-functional blend, designed for the **microbial protection** of cosmetics and for the **moisturizing of the skin**. It represents a socially and environmentally responsible solution for **green, safe and easy preservation**. The "two in one" activity supports today's trend of simplifying formulations to their essentials.

- **E-Leen Green B** shows a **broad spectrum anti-microbial activity** that ensures complete protection of water-based cosmetics against microbial degradation. Its composition is optimized for maximum availability of the ingredients within the aqueous phase of cosmetic products.
- **E-Leen Green B** also exhibits a **long-lasting skin moisturizing effect** comparable to that of glycerin. It contributes to a pleasant, non-sticky and non-greasy skin feel of personal care products.
- **E-Leen Green B** consists of **nature-derived** and **nature-identical** components suitable for **natural cosmetics**. Its major ingredient, **bio-sourced** Pentylene Glycol, is **sustainably made** from sugarcane bagasse.
- **E-Leen Green B** is **ECOCERT/COSMOS** approved.

E-Leen Green B protects natural cosmetics, as highlighted by these two example formulations: Body Cream and Sulfate Free Shampoo

Functions

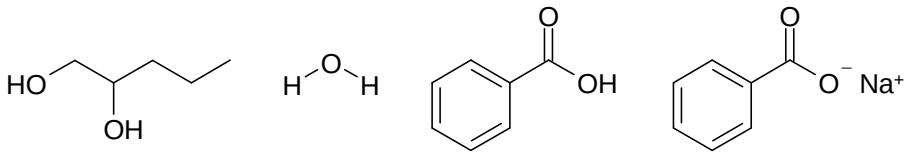
- Preservative
- Skin humectant
- Emollient

Applications

- Skin Care
- Hair Care
- Toiletries

Verified by ECOCERT
COSMOS APPROVED

Specifications and characteristics

INCI names	Pentylene Glycol, Water, Sodium Benzoate, Benzoic Acid
CAS reg. N°	[5343-92-0]; [7732-18-5]; [532-32-1]; [65-85-0]
Appearance	Clear, colourless liquid
Odour	Odourless or faint
pH of E-Leen Green B	5.5 – 6.5
Density at 20 °C	1.00 – 1.02 g/ml
Purity by HPLC	≥ 99.0 %
Recommended pH of use	3.0 – 6.0
Recommended use level	1.0 to 3.0 % (max. 5.5 %)
Origin, ISO 16128	- Derived Natural - Natural origin index: 0,88 - Contains 88 % renewable carbon (of total carbon)
Chemical Structure:	

The above information is accurate to the best of our knowledge. Customers are advised to make their own studies on the usefulness of any ingredient for a particular application. Recommended usage information is only provided as indication and should not be considered as recommendations to use Minasolve SAS's products in violation of any laws, patents, or official regulations dealing with manufacture, composition, local procedures, product design, or end usage.

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Preservation performance of E-Leen Green B:

O/W-emulsion, pH 5.5, subjected to challenge test according to ISO 11930

Phase	Raw material	INCI name	%
A	Water	*Aqua*	71.00
	Xanthan Gum [1)]	*Xanthan Gum*	0.30
B	Emulium Kappa 2 [2)]	*Candellila/Jojoba/Rice Bran Polyglyceryl-3 Esters (and) Glyceryl Stearate (and) Cetearyl Alcohol (and) Sodium Stearoyl Lactylate*	1.50
	Glyceryl Monostearate	*Glyceryl Monostearate*	2.30
	TEGO Care PS [3)]	*Methyl Glucose Sesquistearate*	1.20
	Jojoba Oil [4)]	*Simmondsia Chinensis Oil*	5.00
	Almond Oil [4)]	*Prunus Amygdalus Dulcis Oil*	4.00
	Cocoa Butter [4)]	*Theobroma Cacao Butter*	3.00
	BergaCare FG 5 [5)]	*Ethylhexyl Palmitate (and) Ethylhexyl Stearate (and) Hydrogenated Olive Oil*	2.00
	Grape Seed Oil [4)]	*Vitis Vinifera Seed Oil*	4.00
C	**E-Leen Green B [6)]**	***Pentylene Glycol (and) Aqua (and) Sodium Benzoate (and) Benzoic Acid***	**2.00**
	Perfume Champ [7)]	*Perfume*	0.10
	Tocopherol	*Tocopherol*	0.10

Sulfate-free shampoo, pH 5.5, subjected to challenge test according to ISO 11930

Phase	Raw material	INCI name	%
A	Water	*Aqua*	72.40
	Xanthan Gum [1)]	*Xanthan Gum*	0.60
	Plantacare 818 UP [8)]	*Coco Glucoside*	15.00
	Plantapon ACG HC [8)]	*Sodium Cocoamphoacetate*	5.00
	TEGO Betain F 50 [3)]	*Cocamidopropyl Betain*	5.00
B	**E-Leen Green B [6)]**	***Pentylene Glycol (and) Aqua (and) Sodium Benzoate (and) Benzoic Acid***	**2.00**
C	Citric acid (10 % aq. solution)	*Aqua (and) Citric Acid*	qs

Raw material providers:

1) Jungbunzlauer
2) Gattefossé
3) Evonik
4) Caesar & Loretz
5) Berg & Schmidt
6) **MINASOLVE**
7) Luzi
8) BASF

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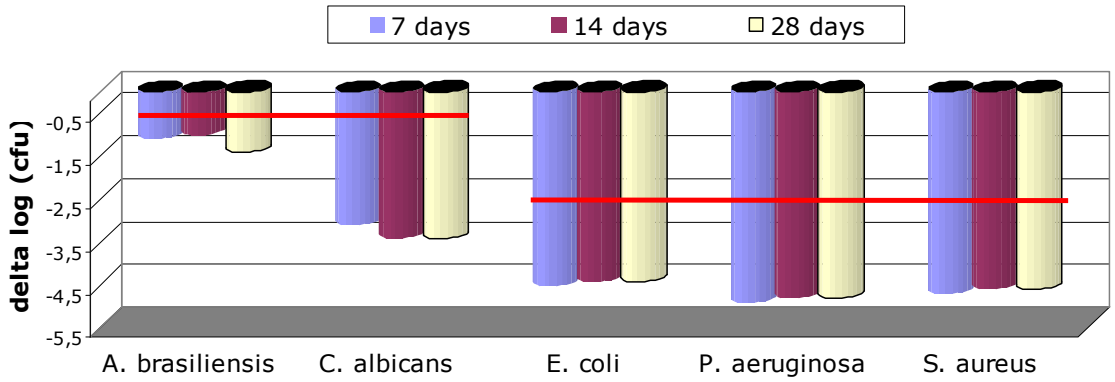
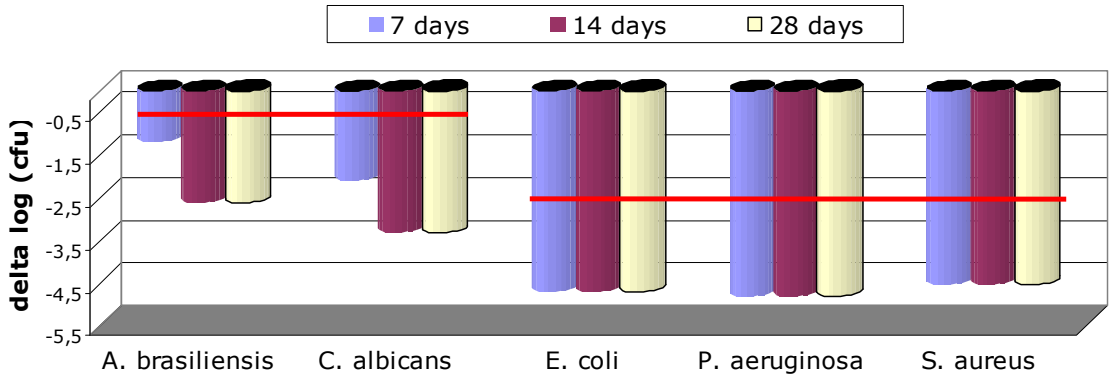
Challenge Test Results:

O/W emulsion, pH 5.5, containing 2 % E-Leen Green B



Sulfate-free shampoo, pH 5.5, containing 2 % E-Leen Green B



ISO 11930 requirements for log cfu/g reduction after 28 days (criteria A)

Corneometry study of aqueous solutions – *PhD Trials, Lisbon*

E-Leen Green B is an efficient **skin humectant**. This property was demonstrated in a corneometry study, where **E-Leen Green B** showed a long lasting moisturizing effect similar to that of Glycerin. The two test substances where both applied as an aqueous solution to the forearm area.

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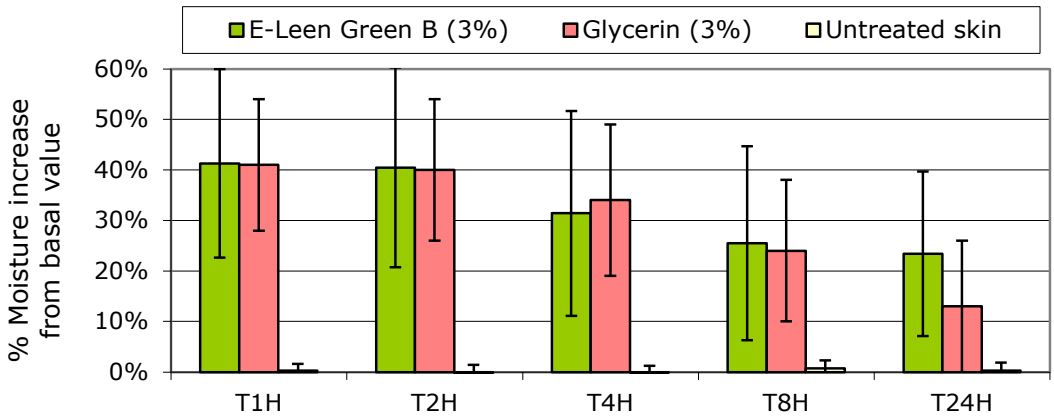

Application in cosmetic formulations

- ✓ **E-Leen Green B** is a **water-soluble liquid** which can be added at any stage of the production process. It is suitable for hot or cold processing and is compatible with all common water-based cosmetic formulations. Its balanced composition minimizes pH shifts, when added to a formulation.
- ✓ **E-Leen Green B** shows a **broad spectrum anti-microbial activity** that ensures complete protection of water-based cosmetics against microbial degradation. It is optimized for maximum availability of its ingredients within the aqueous phase of cosmetic products.
- ✓ **E-Leen Green B** also exhibits a **long-lasting skin moisturizing effect** comparable to that of glycerin. It contributes to a pleasant, non-sticky and non-greasy skin feeling of personal care products.

Further readings

- Konaté N. et al., "Sustainably Sourced Pentylene Glycol – a Green Allrounder", *SOFW Journal*, 142, 44-48, October **2016**
- Bergfeld W.F. et al., "Final Report of the Cosmetic Ingredient Review on the Safety Assessment of 1,2-Glycols as Used in Cosmetics", *Cosmetic Ingredient Review*, **2011**.
- Chipley J.R., "Sodium Benzoate and benzoic acid", *Antimicrobials in Food. 3rd edition, pp 11-38,* **2005.**
- Pillai R. et al., "1,2-Alkanediols for Cosmetic Preservation", *Cosmetics & Toiletries Magazine*, *123 (10), 53-61,* **2008.**
- Schnittger S. et al., "Use of alkanediols in personal care formulations – closer look at antimicrobial activity", *Proceedings of the SCC Annual Scientific Meeting & Technology Showcase*, New York, **2006**.

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