Ester India



PRODUCT DATA SHEET

EsoDant SC10

CAPRYLYL GLYCOL & ETHYLHEXYLGLYCERIN

(INCI: CAPRYLYL GLYCOL, ETHYLHEXYLGLYCERIN)

EsoDant - SC10

Product Code FP 048 | Synonym : 1,2-Octanediol / Ethylhexylglycerin blend | INCI : Caprylyl Glycol, Ethylhexylglycerin

Description :

EsoDant - SC10 is a multifunctional cosmetic additive: a clear, anhydrous blend of caprylyl glycol (1,2-octanediol) and ethylhexylglycerin in a ratio of about 70 : 30. It combines the moisturising and antimicrobial properties of caprylyl glycol with the skin-conditioning and deodorising properties of ethylhexylglycerin. In the formulation it works as a mild humectant and emollient with a distinctive light skin feel, as a deodorant active, and as a booster that improves the efficacy of conventional preservatives such as phenoxyethanol, parabens and organic acids. Neither component is a listed preservative, so EsoDant - SC10 is unrestricted under the EU Cosmetics Regulation and is the basis of paraben-free, formaldehyde-free and 'preservative-free' concepts in leave-on and rinse-off products.

Features and Benefits

EsoDant - SC10 demonstrates the following features and benefits:

- Multifunctional: humectant and emollient, deodorant active and preservative booster
- Contributes to the antimicrobial stability of the formulation at 0.5 - 2.0 %
- Not a listed preservative - unrestricted in the EU, USA and Asia
- Stable to hydrolysis, temperature and pH up to 12
- Medium-spreading emollient; increases the viscosity of surfactant systems
- No effect on foam character, volume or stability in rinse-off products
- Clear, colourless to light yellow, with only a slight odour
- Ready-made alternative to dosing EsoDant - EHG and caprylyl glycol separately

Application / Use

EsoDant - SC10 is incorporated into emulsified, surfactant-based and alcoholic personal care products, such as:

- Creams, lotions and emulsions - leave-on skin care
- Deodorants and antiperspirants
- Wet wipes and baby wipes
- Shampoos, conditioners and body washes
- Sun care and after-sun products
- Micellar waters, toners and serums (with a solubiliser)
- Foot care and intimate care products
- 'Preservative-free' and natural-positioned concepts

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Physical properties and Product Specifications

Appearance	Clear colourless to light yellow liquid
Colour (APHA)	100 maximum
Odour	Characteristic
Density at 20°C	Approx. 0.94 g/cm³
Refractive index	Approx. 1.448
Water solubility at 20°C	Approx. 1 g/l
Moisture (KF)	1.0 % maximum
Flash point	> 100°C (ISO 2719)
Solidification temperature	Approx. 15°C

Chemical Identification

CTFA / INCI Name	CAS Number	EINECS Number
Active Ingredients		
Caprylyl Glycol	1117-86-8	214-254-7
Ethylhexylglycerin	70445-33-9	408-080-2

Ingredient Information

Active Ingredients

Caprylyl Glycol	65 - 75 %
Ethylhexylglycerin	25 - 35 %

EsoDant - SC10 is an anhydrous blend of the two active ingredients. Each batch is produced to exact specifications and a certificate of analysis is provided with each order. The above is presented as typical composition and does not constitute specifications.

Formulating Considerations

Both components of EsoDant - SC10 are surface-active, which is what gives the blend its booster effect and its skin feel, and also what governs how it is incorporated. The following guidelines will help optimise performance; as part of a best practice manufacturing strategy, confirm compatibility and efficacy in the development of new products.

Typical Use Levels - EsoDant - SC10 is used at 0.5 - 2.0 % by weight in the final formulation. As a booster alongside a conventional preservative 0.5 - 1.0 % is usual; in deodorants 0.5 - 1.0 %; in 'preservative-free' concepts, where the blend is the main antimicrobial component, 1.0 - 2.0 % together with a chelating agent and a controlled water activity or pH. There is no regulatory ceiling. Ester India can supply samples and technical support to help determine the optimum system.

Addition to the Formulation - In emulsions add EsoDant - SC10 after emulsification, once the emulsion has formed, so that its interaction with the emulsifier system is minimal. It is soluble in ethanol, glycols and glycol ethers and dispersible in water at about 0.1 %; in clear aqueous systems pre-dissolve it in propylene glycol or a similar glycol, or in the surfactant concentrate. It behaves as a medium-spreading emollient, comparable to octyldodecanol or dicaprylyl ether.

Effect of Temperature - Stable to hydrolysis and temperature; may be added to formulations processed up to 80 °C. The blend solidifies below about 15 °C - warm the drum to 25 - 30 °C and homogenise before use; solidification does not affect quality.

Effect of pH - Both components are non-ionisable, so activity is independent of pH and the blend is stable across the entire formulation range up to pH 12. It boosts pH-independent preservatives such as phenoxyethanol and pH-dependent organic acids such as benzoate and sorbate alike.

Compatibility - Compatible with anionic, cationic, nonionic and amphoteric surfactants and with most personal care raw materials. In surfactant systems it increases viscosity and can reduce the salt needed for thickening; it does not change foam. High levels of ethoxylated solubilisers may reduce the free fraction. For handling the concentrate, stainless steel, PE, PP, PET, PS, PC, PMMA and hard PVC are suitable; use PTFE, EPDM or fluorine-rubber seals.

Spectrum of Activity

Caprylyl glycol is active against the bacteria, yeasts and moulds typically found in cosmetic formulations, and ethylhexylglycerin inhibits the Gram-positive odour-causing bacteria on skin - Corynebacterium and Staphylococcus species - without affecting the beneficial skin flora. Together they accelerate and extend the kill of conventional preservatives across the USP <51> and EP 5.1.3 panel:

- Staphylococcus aureus
- Escherichia coli
- Pseudomonas aeruginosa
- Candida albicans
- Aspergillus brasiliensis
- Corynebacterium species (odour)

Regulatory Status

Both components are globally approved cosmetic ingredients with no concentration limit:

Europe

- Neither component is listed in Annex V of Regulation (EC) No 1223/2009 - used as skin-conditioning, humectant and deodorant agents, no restriction on concentration
- See the Safety Data Sheet for the CLP classification of the concentrate

Americas Approved for use - no restriction

Asia

- Japan (JSQI / ENCS), China (IECIC) and ASEAN: listed cosmetic ingredients, no restriction

Regulations are subject to revision. Users should confirm the status against the current local regulation before placing a finished product on the market.

Handling, Storage, and Disposal Store in tightly closed original containers in a cool, dry place away from heat and direct sunlight, above 15°C. Shelf life 24 months from the date of manufacture when stored as directed. Available in 25 kg and 200 kg HDPE drums and smaller packs.

Health and Safety EsoDant - SC10 is classified as causing serious eye damage and as harmful if inhaled as a mist; wear eye protection when handling the concentrate and avoid aerosols. Please refer to the Safety Data Sheet (SDS).

Recommended Use Levels

Application	EsoDant - SC10	Partner preservative
Booster in creams, lotions, sun care	0.5 – 1.0 %	EsoDant - PE 0.4 – 0.8 %
Booster in surfactant rinse-off products	0.5 – 1.0 %	EsoDant - PE, 510 or SB
Wet wipes	0.5 – 1.0 %	EsoDant - PE or 9010
Deodorants and antiperspirants	0.5 – 1.0 %	– (deodorant active)
'Preservative-free' leave-on concept	1.0 – 2.0 %	Chelator, pH ≤ 5.5 or low aw
Micellar waters, toners (with solubiliser)	0.5 – 1.0 %	EsoDant - PE 0.5 – 0.8 %

EsoDant - SC10 contributes to antimicrobial stability but is not a registered preservative; in 'preservative-free' concepts the whole formulation - water activity, pH, chelation and packaging - must be designed around it. Recommended use levels are guideline starting points only. It is the responsibility of the customer to establish stability and preservative efficacy in the final formulation by challenge testing to USP <51> or EP 5.1.3.

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