

MinaSolve CapEasy

MinaSolve CapEasy is the **liquid form** of **Capryloyl Glycine**, a **multi-functional ingredient** for the **cleansing** and **protection** of skin and scalp. **MinaSolve CapEasy** is **easier to use on production scale** than the common powder form of Capryloyl Glycine.

- **MinaSolve CapEasy** is a **mild anti-acne ingredient**: it reduces sebum production by inhibiting the enzyme 5 α -reductase. It also inhibits the growth of *Propionibacterium acnes*.
- **MinaSolve CapEasy** is a **water-soluble anti-dandruff ingredient**: it shows anti-microbial activity against the yeast *Malassezia furfur* (*Pityrosporum ovale*), and it simultaneously reduces fatty scalp.
- **MinaSolve CapEasy** can be used in **deodorant applications**: it inhibits the growth of bacteria that are involved in the formation of body odour.
- **MinaSolve CapEasy** can also help to **protect cosmetic formulations**: thanks to its general anti-microbial properties, it can be used to reduce or even substitute traditional preservatives.

ONE FOR
EVERYONE

The multiple fields of application for MinaSolve CapEasy are highlighted by a range of example formulations, designed to care for the whole family:

ONE FOR EVERYONE anti-acne face cleanser, **ONE FOR EVERYONE** anti-dandruff shampoo, **ONE FOR EVERYONE** deodorant and **ONE FOR EVERYONE** moisturizing face lotion.

Functions

- Anti-acne and anti-seborrhoea
- Anti-dandruff
- Purifying and deodorizing
- Microbial protection of formulations

Applications

- Skin care
- Hair care
- Toiletries



Properties

- **MinaSolve CapEasy** is a **water-soluble liquid**, which is **compatible with cold processing**.
- **MinaSolve CapEasy** is a **self-preserved aqueous solution**, **cost-effective** and **easy to use**.
- **MinaSolve CapEasy** is **pre-neutralized**, avoiding the handling of powder or caustic neutralizer.

Specifications and characteristics

INCI name	Water, Capryloyl Glycine, Sodium Bicarbonate
CAS reg. N°	[7732-18-5]; [14246-53-8]; [144-55-8]
Recommended pH of use	4.0 – 7.0
Recommended use level	1.5 – 7.0 %
Appearance	Clear, colourless or almost colourless liquid
Odour	Odourless or faint
Purity (HPLC)	Min. 98.0 area-%
Assay (HPLC)	28.0 – 32.0 wt.-% Capryloyl Glycine
Density at 20 °C	1.05 – 1.10 g/mL
pH at 20 °C	7.0 – 8.5
Regulatory status	Globally approved; safety and regulatory data are available upon request
Origin, ISO 16128	- Derived-natural - Natural origin index: 0.8 - Contains 80 % renewable carbon
Chemical structure	

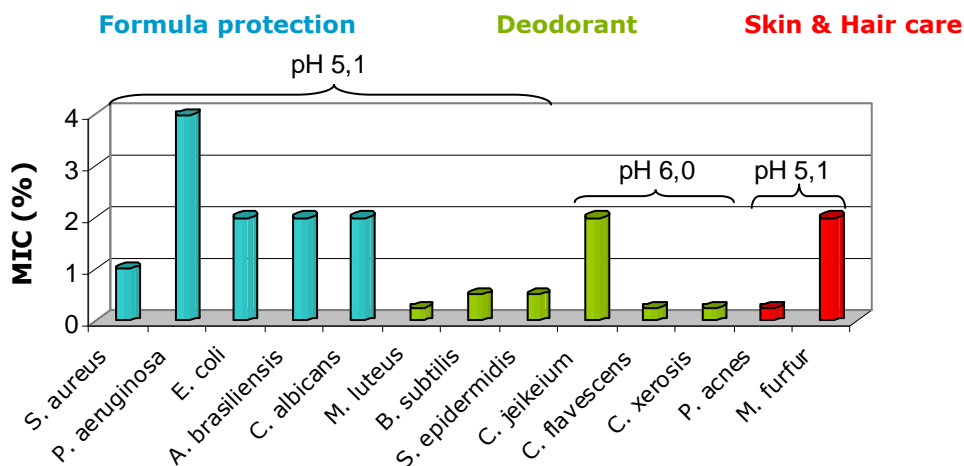
The above information is accurate to the best of our knowledge. Customers are advised to make their own studies on the usefulness of any ingredient for a particular application. Recommended usage information is only provided as indication and should not be considered as recommendations to use Minasolve 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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Performances

Antimicrobial effects

MinaSolve CapEasy inhibits the growth of many micro-organisms. The **minimum inhibitory concentrations (MIC)** of **Capryloyl Glycine** were determined in suspension-based tests at pH 5.1. The *Corynebacteria* were tested at pH 6, since these germs are sensitive to pH < 6:

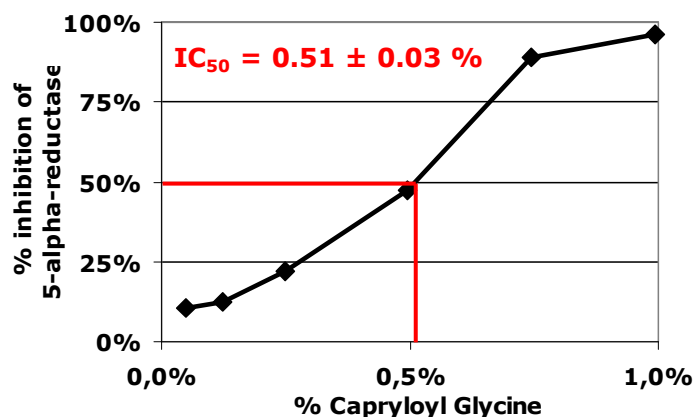


MinaSolve CapEasy also inhibits the growth of microbes that play a role in the formation of **body odour**. It can therefore be regarded as an interesting additive for deodorant formulations. Due to its inhibiting effects on the growth of *Malassezia Furfur* and *Propionibacterium acnes*, **MinaSolve CapEasy** can further support the treatment of acne and dandruff via this second mechanism.

Furthermore, **MinaSolve CapEasy** prevents the growth of all common test organisms used in microbial challenge tests. It can therefore be considered as **a co-protecting agent for cosmetic formulations**. **MinaSolve CapEasy** can be beneficially combined with preservative boosters for enhanced activity, such as e.g. the eco-sourced alkanediol **A-Leen 5**.

Inhibition of 5- α -reductase

MinaSolve CapEasy inhibits the 5 α -reductase, a key enzyme in the regulation of sebum production. The IC_{50} -value of Capryloyl Glycine was determined in an in-vitro assay on the isolated enzyme:



MinaSolve CapEasy can reduce the formation of sebum in sebaceous glands. Skin and scalp therefore become less greasy, and those microbes that are consuming sebum grow less. This concerns e.g. the dandruff forming yeast *Malassezia Furfur*, and the acne-forming bacterium *Propionibacterium acnes*.

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Self-preservation effect

The efficacy of **MinaSolve CapEasy** in creating self-preserved formulations was confirmed in a challenge test according to ISO 11930. The numbers of test germs present in the formulation were checked after 7, 14 and 28 days. The variations in the numbers of colony forming units (cfu) are presented below in a logarithmic form. The following O/W-emulsion (pH 5.5) was tested:

Phase	Ingredient	INCI name	%
A	Water	<i>Aqua</i>	ad 100
	Xanthan Gum ⁽¹⁾	<i>Xanthan Gum</i>	0.5
	MinaSolve CapEasy ⁽²⁾	<i>Water (and) Capryloyl Glycine (and) Sodium Bicarbonate</i>	0 or 6.7
	A-Leen 5 ⁽²⁾	<i>Pentylene Glycol</i>	2.0
B	Emulgade PL 68/50 ⁽³⁾	<i>Cetearyl Glucoside (and) Cetearyl Alcohol</i>	5.0
	Shea Butter ⁽⁴⁾	<i>Butyrospermum Parkii (Shea) Butter</i>	3.0
	Joboba Oil ⁽⁴⁾	<i>Simmondsia Chinensis (Jojoba) Oil</i>	3.0
	Hazelnut Oil ⁽⁵⁾	<i>Corylus Americana (Hazel) Seed Oil</i>	3.0
C	Bioxan T70 ⁽⁶⁾	<i>Tocopherol</i>	0.1
D	50 % aq. citric acid	<i>Citric Acid (and) Aqua</i>	ad pH 5.5

Raw material suppliers

⁽¹⁾ Jungbunzlauer

⁽²⁾ **Minasolve**

⁽³⁾ BASF

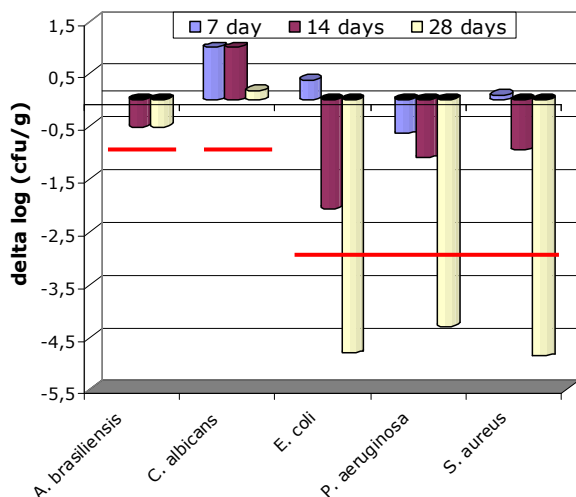
⁽⁴⁾ Caesar & Loretz

⁽⁵⁾ SanaBio

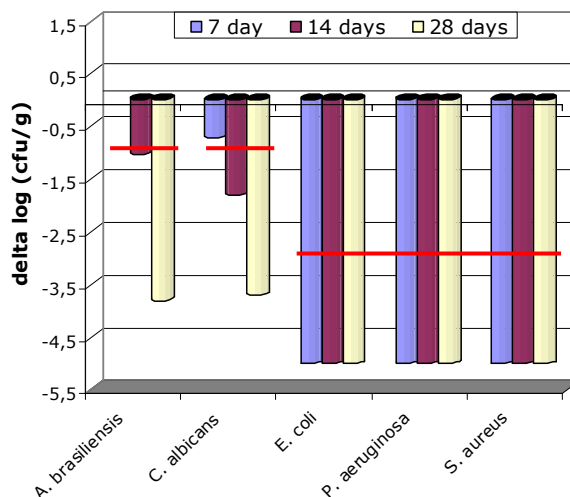
⁽⁶⁾ BTSA

Results of the microbial challenge tests*:

0 % MinaSolve CapEasy



6.7 % MinaSolve CapEasy (= 2 % Capryloyl Glycine)



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

*Results within experimental error of 0.5 delta log (cfu/g)

MinaSolve CapEasy protects the tested O/W-emulsion. It thereby acts synergistically with the eco-sourced boosting agent **A-Leen 5**. The tested formulation fulfils criteria A of the norm ISO 11930.

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Formulation guidelines

MinaSolve CapEasy is an aqueous solution of Capryloyl Glycine in its carboxylate form. This solution is **soluble in water, alcohols, alkanediols and glycerine**. **MinaSolve CapEasy** is **suitable for hot and cold processing** and can be simply added to the aqueous phase of any cosmetic product. It can also be added at any later stage of the production process.

MinaSolve CapEasy can be used to replace one by one the original powder form of Capryloyl Glycine (Caprocine). **No heating, premixing, or pH-adjustment is needed in advance**. The overall activity profile of Capryloyl Glycine is fully maintained. **MinaSolve CapEasy** contains 30 mass-percent of Capryloyl Glycine, so that the equivalent amount relative to the powder form "Caprocine" can be easily calculated.

MinaSolve CapEasy at a use level of $\geq 5\%$ increases significantly the viscosity of a Xanthan gum gel, allowing for using less of the gum in the formulation. In order to achieve a uniform product, **MinaSolve CapEasy** is preferably added, after the thickening agent has been fully hydrated.

MinaSolve CapEasy is effective in formulations at pH 4-7. The pH of the final formulations should therefore be adjusted within this range for optimum efficacy. Capryloyl Glycine is active only in its neutral acidic form. Higher pH-levels will therefore necessitate higher concentrations of **MinaSolve CapEasy** for achieving similar effects compared to lower pH.

Bibliography

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- Boon N et al. *Characterization of Staphylococcus and Corynebacterium Clusters in the Human Axillary Region*, PLOS One **2013**, vol. 8 (8), e70538.
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