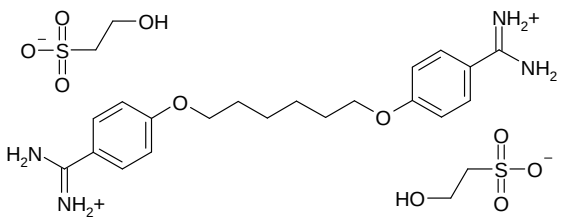
MINASOLVE®
BIO-INGREDIENTS FOR YOUR APPLICATIONS

Technical Data Sheet
March 2020 – V5

MinaSolve Hexam

Chemical structure



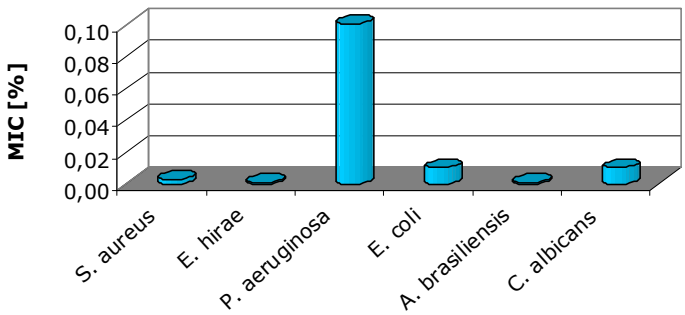
Performance

MinaSolve Hexam is an efficient preservative and sanitizer with good cutaneous and mucous tolerance. [1]

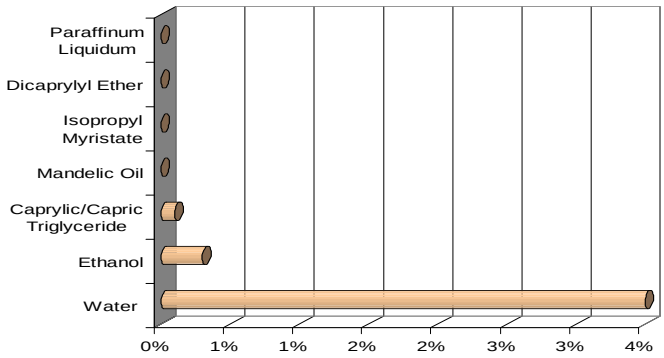
MinaSolve Hexam is applied at a low use level of 0.01 - 0.1 %, and is also suitable for oral and eye care products at max. 0.05 %.[1]

MinaSolve Hexam is active within a wide pH range of 3.5-6.0.

Minimum inhibitory concentration



Solubility in cosmetic solvents



Specifications and characteristics

INCI	Hexamidine Diisethionate
CAS Reg. No	659-40-5
Appearance	White or slightly yellow powder
Purity	Min. 98.0 %
Loss on drying	Max. 0.5 %
MW	606.72 g/mol

Quality and mode of action

MinaSolve Hexam is a unique quality of Hexamidine Diisethionate, manufactured via a proprietary, eco-improved process avoiding the presence of toxic impurities. It is globally approved with a long track record of use.[2]

MinaSolve Hexam belongs to the class of membrane-active microbicides. Related to its structure, MinaSolve Hexam is a stable ingredient that does not contain, nor release formaldehyde or any other substance of concern.

Application in cosmetic formulations

MinaSolve Hexam is soluble in water at ambient temperature. Solubilisation in alcohols can be accelerated by heating up to 50-100 °C. The compound is stable in slightly acidic to acidic solutions, but alkaline conditions should be avoided.

MinaSolve Hexam can be dissolved in the aqueous phase, or added as a solution in water or alcohols at any stage of the process. Before adding MinaSolve Hexam to any formulation, the pH of the product should be adjusted to ≤6.0 in order to avoid the precipitation of neutralized Hexamidine. This pH should be maintained during the formulation process.

MinaSolve Hexam is a cationic substance which can interact with anionic ingredients. Incompatibility phenomena, such as precipitation or turbidity, should be checked individually. In products where a thickening agent is required, MinaSolve Hexam is best formulated with non-ionic thickeners, e.g. non-surface treated cellulose and cellulose derivatives, gums (Tara, Guar, Arabic, Konjac Mannan), polyethylene oxyde based thickeners (Poloxamers, PEGs).

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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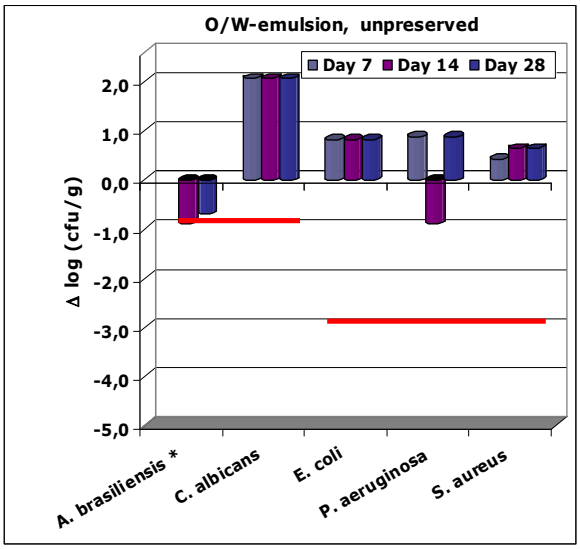
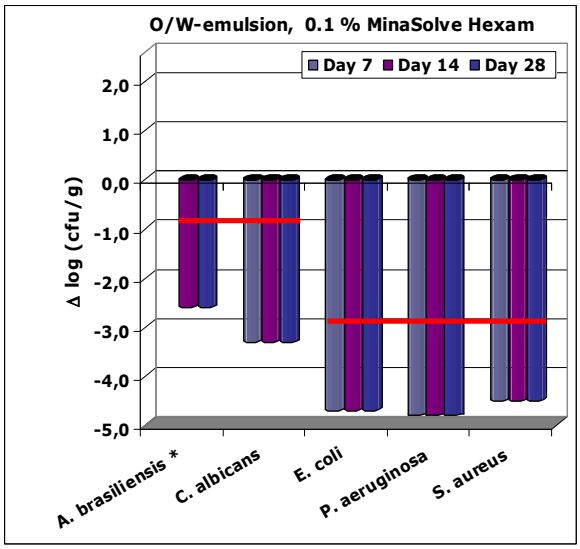
Performance in challenge test

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

Phase	Ingredient	INCI name	%
A	Water	*Aqua*	ad 100
	MinaSolve Hexam [1]	***Hexamidine Diisethionate***	***0.1***
	Xanthan Gum [2]	*Xanthan Gum*	0.5
B	Emulgade PL 68/50 [3]	*Cetearyl Glucoside (and) Cetearyl Alcohol*	5.0
	Shea Butter [4]	*Butyrospermum Parkii (Shea) Butter*	3.0
	Jojoba Oil [4]	*Simmondsia Chinensis (Jojoba) Oil*	3.0
	Hazelnut Oil [5]	*Corylus Americana (Hazel) Seed Oil*	3.0
C	Tocopherol	*Tocopherol*	0.1
D	50 % aq. citric acid	*Aqua (and) Citric Acid*	ad pH 5.5

(1) Minasolve, (2) Jungbunzlauer, (3) BASF, (4) Caesar & Loretz, (5) SanaBio





* According to the ISO 11930 norm, the total germ count of A. brasiliensis is not to be assessed at day 7.

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

Bibliography

[1] Becker L, "Final Report on the Safety Assessment of Hexamidine and Hexamidine Diisethionate", *International Journal of Toxicology* **2007**, *26 (Suppl. 3)*, 79-88.

[2] Paulus W, "Dibenzamidines" in *Directory of Microbicides for the Protection of Materials – A Handbook*, Springer, 1st edition **2005**, pp 634-638.

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