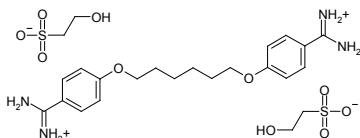


## Specifications and Characteristics

### MinaSolve Hexam

INCI	Hexamidine Diisethionate
CAS REG. N°	659-40-5
APPEARANCE	White or slightly yellow powder
PURITY	Min. 98.0 %
SOLUBILITY	Water (4%)
RECOMMENDED pH OF USE	3.5 ▶ 6.0
RECOMMENDED USE LEVEL	0.01 ▶ Max. 0.1 %
REGULATORY STATUS	Globally approved
ORIGIN	Non-natural (petrochemical)

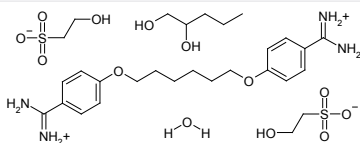
#### CHEMICAL STRUCTURE



### EasySafe Hexam+

INCI	Pentylene Glycol (and) Water (and) Hexamidine Diisethionate
CAS REG. N°	5343-92-0, 7732-18-5, 659-40-5
APPEARANCE	Clear colourless liquid
ODOUR	Odourless or faint
SOLUBILITY	Water and ethanol in all proportions
RECOMMENDED pH OF USE	3.5 ▶ 6.0
RECOMMENDED USE LEVEL	0.2 ▶ Max. 2.0 %
REGULATORY STATUS	Globally approved
ORIGIN	Derived-natural
NATURAL ORIGIN INDEX	<b>0.95 (ISO 16128)</b>

#### CHEMICAL STRUCTURE



The given information is accurate to the best of our knowledge. Buyers are advised to make their own studies on the usefulness of any product for a particular application or purpose. Recommended usage information is only provided as indication, and should not be considered as recommendations to use the products in violation of any patents, intellectual property rights, laws, or regulations relating, but not limited to, manufacture, composition, product design or end usage.

## MINASOLVE is an affiliate of MINAFIN Group

**Minafin Group** is a global leader in fine chemistry, uniting 3 specialized brands that support the pharmaceutical, cosmetic, and high-tech industries.

With strong capabilities in advanced intermediates, APIs, high-potency compounds, and complex chemical processes, **Minafin** drives innovation where it matters most.

As the Green Chemistry Division, **Minasolve** plays a key role by developing innovative, sustainable solutions perfectly aligned with the group's commitment to high performance and responsible chemistry.



**MINAFIN**  
GROUP

# Preservative solutions for Skin Care, Baby Care, Sensitive Areas

## MinaSolve Hexam

- ✓ *Mild and Efficient Preservative*
- ✓ *Proprietary Production Process*

## EasySafe Hexam+

- ✓ *Easy to use liquid*
- ✓ *Boosted antimicrobial effect*
- ✓ *Skin moisturizer*



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bio-ingredients  
for your  
applications.

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## Antimicrobial activity

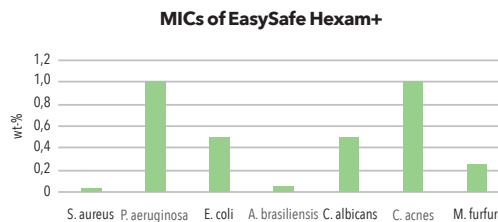
### Challenge test results (ISO 11930) in O/W emulsion, pH 5.5



*MinaSolve Hexam* and *EasySafe Hexam+* act as broad-spectrum standalone preservatives, *EasySafe Hexam+* demonstrates synergistic effect on formula protection

## Multifunctional ingredients

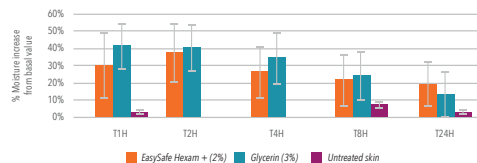
### Anti-dandruff and anti-acne properties



In addition to its preservation effect, *EasySafe Hexam+* also shows activity against *Cutibacterium acnes* and *Malassezia furfur*

## Skin moisturizer

### Corneometry study over 24 hours, 12 volunteers



*EasySafe Hexam+* is an effective skin humectant, with a long lasting moisturizing effect similar to that of glycerin

### O/W emulsion used for the challenge test, pH 5.5

Phase	Ingredient	INCI name	%
A	Water	Aqua	ad 100
	<b>EasySafe Hexam+ or MinaSolve Hexam</b> <sup>(1)</sup>	<b>Pentylene Glycol, Water, Hexamidine Diisethionate or Hexamidine Diisethionate</b>	<b>1.00 or 0.10</b>
	Xanthan Gum OC <sup>(2)</sup>	Xanthan Gum	0.5
B	Emulgade PL 68/50 <sup>(3)</sup>	Cetearyl Glucoside (and) Cetearyl Alcohol	5.0
	Shea Butter <sup>(4)</sup>	Butyrospermum Parkii (Shea) Butter	3.0
	Jjoba Oil <sup>(4)</sup>	Simmondsia Chinensis (Jojoba) Seed Oil	3.0
	Hazelnut Oil <sup>(5)</sup>	Corylus Avellana (Hazel) Seed Oil	3.0
C	Bioxan T70 <sup>(6)</sup>	Tocopherol	0.1
D	Citric Acid (50%)	Citric Acid (and) Aqua	ad pH 5.5
	Sodium Hydroxide (10% aq.)	Aqua (and) Sodium Hydroxide	ad pH 5.5

### Raw material suppliers:

<sup>(1)</sup> Minasolve <sup>(2)</sup> Jungbunzlauer <sup>(3)</sup> BASF <sup>(4)</sup> Caesar & Loretz <sup>(5)</sup> Sanabio <sup>(6)</sup> BTSa

## Applications

**MinaSolve Hexam** is stable within the pH-range of 3.5 - 6.0. Before adding **MinaSolve Hexam** to any formulation, the pH of the product should be adjusted to this range.

**MinaSolve Hexam** is a cationic substance that can interact with anionic ingredients. The compatibility should be therefore checked individually. Nonetheless, **MinaSolve Hexam** is generally compatible with the most common types of anionic surfactants.

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, non-ionic natural gums or polyethylene glycol based thickeners.

The liquid mixture **EasySafe Hexam+** simplifies the formulation with Hexamidine by eliminating the solubilization step.

**EasySafe Hexam+** also enables the formulation in combination with anionic polymers (e.g. Xanthan Gum, poly-acrylates). For instance, **EasySafe Hexam+** can be blended with surfactants at pH 3.5-6.0 prior to the addition to the anionic polymer in its gelled form. Alternatively, the addition of surfactants to a Carrageenan or Xanthan Gum gel allows for the addition of **EasySafe Hexam+** without leading to gel collapse.

## MinaSolve Hexam & EasySafe Hexam+ from MINASOLVE:

### FOR MILD AND EFFICIENT PROTECTION

**MinaSolve Hexam** is a unique quality of **Hexamidine Diisethionate** produced by a proprietary process that avoids the presence of toxic solvents (such as chloroform, dichloroethane, benzene, toluene, xylene). It is globally approved with a long track record of use.

**MinaSolve Hexam** is an **efficient preservative and sanitizer with good cutaneous and mucous tolerance**. It 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.

**EasySafe Hexam+** is a **synergistic blend** of bio-sourced Pentylene Glycol and **MinaSolve Hexam** with a long-lasting skin moisturizing effect in addition to its preservative action.

**MinaSolve Hexam** and **EasySafe Hexam+** are suitable for sensitive skin, scalp and mucous areas (oral, eye and intimate care).

