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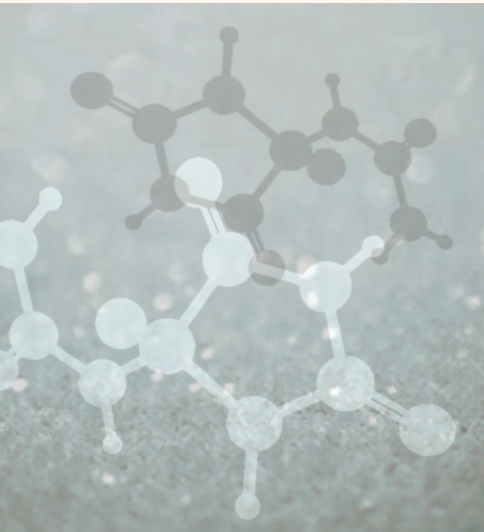
03

Cosmetic ingredients



**AKEMA**  
FINE CHEMICALS

# Company highlights



- » Over 40 years production experience
- » Manufacture based in Italy
- » Family-owned company
- » Complete series of allantoin derivatives
- » Traditional & alternative preservation
- » Focus on cosmetic ingredients
- » Worldwide distribution network
- » Commitment to customer care
- » Microbiological service & challenge testing



COMPANY PROFILE  
ALLANTOIN + ALLANTOIN EP/USP  
ALLANTOIN DERIVATIVES  
COSMETIC PRESERVATIVES  
PRESERVATIVE SYSTEMS  
PRESERVATIVE SYSTEMS WITH PARABENS  
PRESERVATIVE SYSTEMS WITH IPBC

PRESERVATIVE SYSTEMS WITH ORGANIC ACIDS  
PRESERVATIVE SYSTEMS FOR NATURAL COSMETICS  
PRESERVATIVE SYSTEMS WITH BOOSTERS  
MULTIFUNCTIONAL SYSTEMS WITH ANTIMICROBIAL PROPERTIES  
MICROBIOLOGICAL SERVICE  
HAIR CARE  
PRODUCT LIST

# Company profile



Akema S.r.l. is an Italian manufacturer of specialty chemicals for the cosmetic industry. Akema is an independent **family-owned** business **founded in 1973**. All the products are **manufactured in our plant in Italy**.

The company has focused its activity on two main product lines:

- » **Allantoin & allantoin derivatives**
- » **Preservatives for cosmetics**

Akema has a large **distribution network** of more than 40 agents highly specialized in the cosmetic business that make our products available over the five continents.

Akema was one of the first manufacturers of **allantoin** and for more than 40 years has successfully supplied the cosmetic and pharmaceutical industry, gaining an outstanding reputation as manufacturer of high-quality material.

An exclusive range of **allantoin derivatives** is also produced, which offers formulators a valuable family of safe and effective functional ingredients for various specific applications in personal care and dermocosmetics.

With long manufacturing experience, Akema is one of the **leading manufacturer** of the preservatives Imidazolidinyl Urea, Diazolidinyl Urea and DMDM Hydantoin.

Over the years the company has widened its range of preservation solution to include new **mild and alternative preserving systems**. Now Akema offers the cosmetic industry a comprehensive range of traditional & non-traditional preservative systems to match the challenging **needs of modern cosmetics**.

We are committed to providing a constant and **qualified support** to our customers ranging from marketing assistance to technical and lab service.

The **challenge tests**, which can be offered to customers, play an important role in the selection of preservatives and in determining the appropriate levels of use.

At present Akema is renowned as a reliable **manufacturer** of cosmetic ingredients with a long history and an established presence within the global marketplace.

Akema provides high quality products and service to successfully serve the **global cosmetic industry**. We continue to form successful partnerships giving a competitive advantage in the current demanding market.



# Allantoin

Allantoin is a well recognized and largely used **skin protectant** for personal care and dermatological preparations.

It is an effective **healing agent** that stimulates cell proliferation and healthy tissue formation. Applied to injured skin it promotes the regeneration of damaged epithelium and accelerates wound healing.

Allantoin has a mild **keratolytic & keratoplastic action** that helps the natural desquamation of the stratum corneum and promotes soft skin.

A pronounced **moisturizing effect** results

from its ability to increase the water binding ability of the stratum corneum which in turn improves skin appearance.

As an **anti-irritant & soothing agent**, allantoin helps relieve irritated skin, itching and redness. Also reduces the irritant potential of certain cosmetic ingredients such as surfactants, by forming complexes and neutralizing them.

Allantoin as a natural component is found in many plants, particularly in comfrey roots (*Symphytum officinale*), in animals and as an organic component of many types of soil.

With a long history of use and an excellent safety profile with no evidence of adverse effects, allantoin represents an **absolutely safe** and effective cosmetic ingredient, ideal for modern cosmetics.

It is **compatible** with practically all cosmetic ingredients and highly **stable** over wide range of process conditions and formulations.

Allantoin is **effective at low concentrations**. It is typically used in cosmetics at **0.1-0.5%**, although the use levels can be increased to 2% and over.



## APPLICATIONS:

- » Skin care (face, lip, body, hands)
- » Hair care
- » Shaving products

- » Baby care
- » Sun care
- » Bath products
- » Oral care

As a company primarily focused on the production of Allantoin for over 40 years, Akema offers unique **specialized expertise** and the highest quality and purity. Our product arises from a manufacturing process free from solvents, without the use of animal or

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# Allantoin EP/USP

Allantoin EP/USP is the pharmaceutical grade which conforms to pharmacopeial specifications (USP, EP & JPC).

Due to its skin protecting and healing properties Allantoin has always had widespread use in various **dermatological and veterinary preparations**.

In topical pharmaceutical products it is a useful active ingredient that enhances **cell proliferation**, promotes the formation of granulation tissue and accelerates wounds healing.

As a **keratolytic agent** it promotes the removal of damaged tissue and dead cells, cleansing the areas where applied.

Allantoin can be used in topical drug products at levels of **0.5-2%** in the treatment of several conditions of the skin and mucous membranes.

## APPLICATIONS:

- » Cuts, abrasions, ulcers
- » Slow healing wounds
- » Burns & sun-burns
- » Acne & skin eruptions
- » Ano-rectal diseases
- » Dermatitis, xerosis, psoriasis
- » Dental hypersensitivity & periodontal diseases.





# Allantoin Derivatives

The amphoteric characteristic of allantoin permits **combination with various chemical substances** to form salts and complexes.

When combined with other dermatological agents, allantoin synergizes their activity showing the properties of both components. The addition compounds and salts thus formed have been shown to possess useful **dermatotherapeutic properties**.

In particular the **aluminum allantoinate complexes** combine the properties of allantoin with the astringent action of the aluminium salts to provide beneficial effects in the treatment of acne, in oral, foot & dermatological problems.

**The other allantoin complexes** are valuable combinations of allantoin with skin active ingredients that can be useful in various specific skin conditions.

## ALCLOXA

INCI name: Alcloxa

Aluminium allantoinate complex with mild **astringent**, anti-irritant, keratolytic and healing action. Well tolerated antiperspirant agent, it reduces the irritant potential of cosmetics & OTC preparations, useful for individuals with sensitive skin.

### APPLICATIONS:

- » Antiperspirants & deodorants
- » Oral care
- » Acne & greasy skin
- » Shaving care
- » Foot care
- » Baby care
- » Dermatological & anorectal products

USE LEVELS: 0.1-2%

## ALCLOXA A.S. MODIFIED

INCI name: Aluminium Chlorohydrate, Allantoin

**Alcohol-soluble form** of Alcloxa, complexed with propylene glycol. Designed for use in high alcohol antiperspirant-deodorants, pre/after-shave preparations, aerosols & lotions. Produces anti-irritant action with a comfortable sustained drying activity, leaving a non-sticky film.

### APPLICATIONS:

- » Antiperspirants, deodorants
- » Shaving care

USE LEVELS: 6-20%

## ALDIOXA

INCI name: Aldioxa

Aluminium salt of allantoin with astringent, soothing and healing properties. Provides a mild antiperspirant action which serves to dry up weeping areas, prevents skin irritations and promotes the regeneration of injured tissue. Effectively employed for the prevention and the treatment of **baby diaper rash & decubitus ulcers**. Meets JP specifications.

### APPLICATIONS:

- » Antiperspirants & deodorants
- » Oral care
- » Baby care
- » Foot care
- » Antiacne & skin eruptions

USE LEVELS: 0.2-2%



### ALPANTHA®

INCI name: Allantoin Panthenol

Functional ingredient with **anti-irritating**, soothing, and moisturizing properties. Stimulates epithelization and healing of skin impaired functions and mucous membranes. Penetrates into hair with long lasting moisturizing effect, repairs hair damage and improves hair sheen. Wide range of cosmetic and cosmeceutical applications to help skin & oral mucosa regeneration and for dry sensitive skin.

#### APPLICATIONS:

- » Skin care
- » Sun care
- » Oral & lip care
- » Shaving care
- » Baby care
- » Hair care

USE LEVELS: 1-5%

### ALGLYCERA®

INCI name: Allantoin Glycyrrhetic Acid

Functional ingredient with **anti-inflammatory**, **anti-allergic**, mild keratolytic and skin whitening properties. Reduces the irritant and sensitizing effect caused by cosmetics, environmental agents and sun exposure with a **steroid-like** anti-inflammatory action. Suitable for high quality cosmetics and dermocosmetics dedicated to individuals with dry-sensitive skin, skin hyperpigmentation, sun care.

#### APPLICATIONS:

- » Face care
- » Sun care
- » Lip care
- » Non-steroidal dermatologic products

USE LEVELS: 0.1-1.0%

### ALMETH®

INCI name: Allantoin Acetyl Methionine

Derivative of the sulphur-containing amino acid methionine with **antiseborrheic**, **anti-dandruff**, anti-acne and healing properties. Useful in hair products for the treatment of dandruff and seborrhea capitis. Soothes the irritated skin and promotes healing of acne lesions.

#### APPLICATIONS:

- » Oily hair & dandruff scalp
- » Greasy & acneic skin

USE LEVELS: 0.2-1.0%

### ALLANTOIN VC®

INCI name: Allantoin Ascorbate

Functional ingredient with **antioxidant**, anti-aging, bleaching and anti-irritant properties. Useful to protect from free radicals and UV damage, for the treatment of signs of aging, to promote skin renewal and to stabilize oxidizable ingredients. Particularly suggested for anti-aging and aged-skin products, skin bleaching preparations, sun care and hair care.

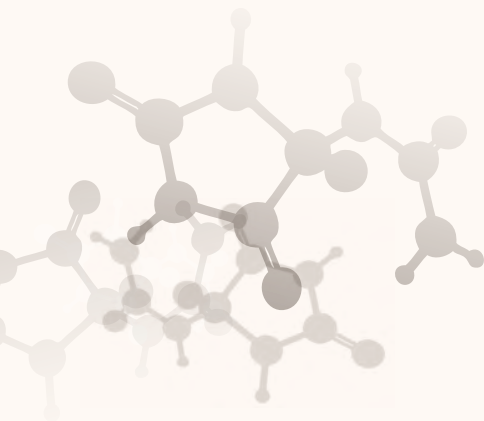
#### APPLICATIONS:

- » Face & eye care
- » Sun care
- » Hair care

USE LEVELS: 0,2-1,0%

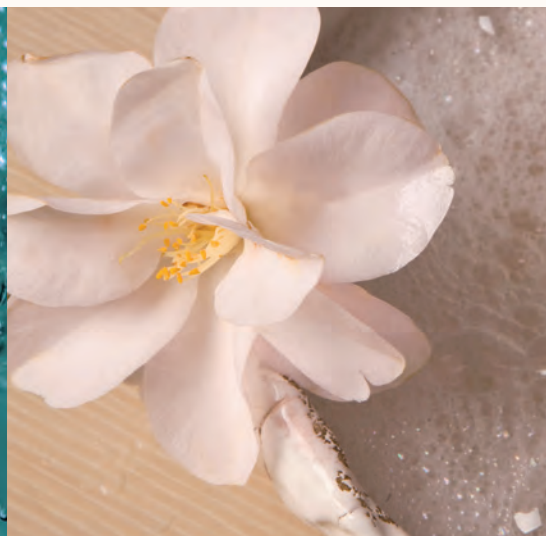
Other allantoin derivatives are also available:

- » **ALLANTOIN CALCIUM PANTOTHENATE**
- » **ALLANTOIN POLYGALACTURONIC ACID**
- » **ALLANTOIN BENZOCAINE**
- » **ALLANTOIN ZINC UNDECYLENATE**
- » **ALLANTOIN MICRONIZED**
- » **ALLANTOIN ENCAPSULATED**
- » **ALDIOXA ACETYLMETHIONINE**





# Cosmetic preservatives



Due to their complex nature and content of nutrients, cosmetics can easily support the proliferation of microorganisms. **Microbial contamination** of cosmetics is a substantial risk to product quality, consumer health and regulatory compliance.

A safe and effective preservation is essential for any personal care formulation, especially if it contains water. The choice of proper **preservation technology** is required to ensure that microorganisms do not proliferate and to ensure protection during manufacture, storage and usage.

Cosmetic formulators require preservatives which are **safe for the consumer** and at the same time inactivate different types of microbial contaminants.

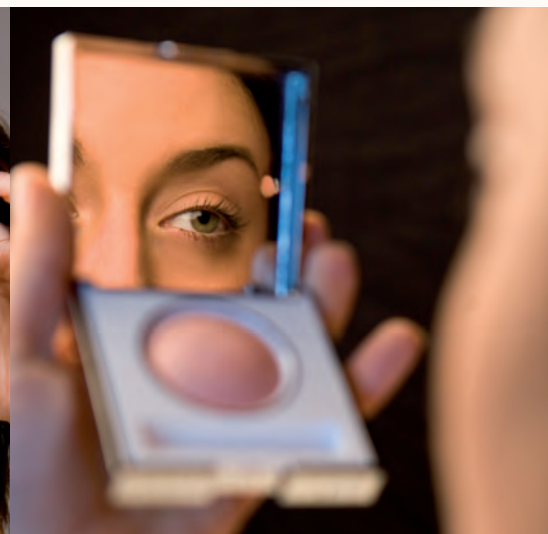
They should also be **compatible** with the formulation, **stable** throughout the product's life, meet the **regulations** and be in line with ever changing **market needs**.

To meet the latest requirements of the current cosmetic market Akema has developed a complete range of preservative systems based on different chemistries.

We offer a variety of preservation options, ranging from traditional actives to systems based on IPBC, organic acids and preservative boosters. Preservatives for natural cosmetics and alternatives to the listed preservatives have been developed as well.

This wide range of products give formulators the opportunity to find the most appropriate **preservation for any specific needs**.





#### **PRESERVATIVE A15**

INCI name: Imidazolidinyl Urea

**Long history** of safe use. Fine white powder highly soluble in water, very active against Gram+ and Gram- bacteria. Widely used in cosmetics & **topical pharmaceutical** products. Meets USP/NF requirements.  
USE LEVELS: 0.2-0.4%

#### **PRESERVATIVE A2**

INCI name: Diazolidinyl Urea

Fine powder highly soluble in water. **Highly effective** against Gram+ and Gram- bacteria with some antifungal activity. Suitable in most personal care products for rinse-off, leave-on & wet wipes.  
USE LEVELS: 0.1-0.3%

#### **KEMIDANT**

INCI name: DMDM Hydantoin

White powder with **99% active**, highly effective against bacteria and molds at very low levels. Extremely stable to storage conditions and wide pH range. Very soluble in water and suitable for a variety of personal care products.  
USE LEVELS: 0.1-0.3%

#### **KEMIDANT L**

INCI name: DMDM Hydantoin, Water

Clear liquid with **55% of active** in water solution, highly effective against Gram +, Gram - bacteria, active against molds. Long history of use in most type of cosmetics for rinse-off, leave-on & wet wipes.  
USE LEVELS: 0.2-0.5%

#### **KEMIDANT L40**

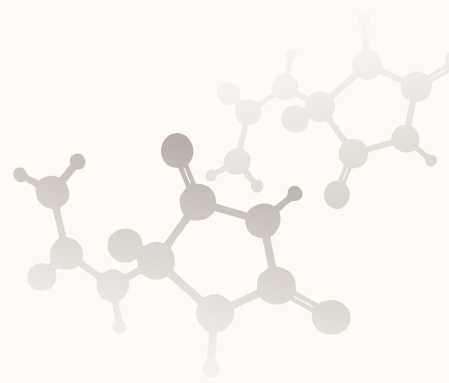
INCI name: Water, DMDM Hydantoin

Clear liquid with **40% of active** in water solution, highly effective against Gram +, Gram - bacteria, active against molds. Stable in wide pH range. Tolerates low storage temperature. Suitable for the preservation of most types of cosmetics.  
USE LEVELS: 0.3-1.0%

#### **KEM 30**

INCI name: Sodium Hydroxymethylglycinate, Water

Liquid preservative derived from glycine with 50% of active in water. **Broad spectrum** antimicrobial activity, highly effective against Gram+ bacteria, Gram- bacteria and molds. Can be used **upto pH 12**, also useful for the neutralization of carbomer gels & anionic systems. Effective as unique preservative in many formulations.  
USE LEVELS: 0.2-0.5%



# Preservative systems



No single preservative meets the requirements for a **complete preservation** in all situations. Individual preservatives are often less effective against certain microbial species than others; most do not have broad spectrum activity against both bacteria and fungi.

To enhance the antimicrobial effectiveness and improve final safety of cosmetics, **blends of different actives** with complementary activity are used together in a way that synergistic effects occur.

Such preservative systems are **balanced combinations** of actives that improve the antimicrobial effect, enable significant reduction of preservatives, minimize the undesired side effects and decrease the final costs.

Methylparaben & Ethylparaben are confirmed as **safe** and their status remains unchanged in all cosmetic applications. Propylparaben & Butylparaben are restricted in leave-on baby products and their maximum concentration slightly lowered.

## KEMABEN

INCI name: Propylene Glycol, Imidazolidinyl Urea, Methylparaben, Propylparaben

Synergistic combination of **widely used** cosmetic preservatives in liquid form. Broad spectrum activity against bacteria, yeasts and moulds. Suitable for rinse-off, leave-on & wet wipes.  
USE LEVELS: 0.6-1.2%

## KEMABEN 2

INCI name: Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben

The **longest used and most popular** preservative blend for cosmetics. Synergistic combination in liquid form with broad spectrum activity against bacteria, yeasts and moulds. Highly effective in wide range of cosmetics for rinse-off, leave-on & wet wipes.  
USE LEVELS: 0.5-1.0%

## KEMABEN 2E

INCI name: Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben

Liquid system with broad spectrum activity against bacteria and **enhanced activity against fungi**. Particularly indicated for emulsions and cosmetics very susceptible to fungal contamination.  
USE LEVELS: 0.3-1.0%

## KEMABEN ME

INCI name: Phenoxyethanol, Methylparaben, Ethylparaben

Liquid blend with the **shortest-chain parabens** in Phenoxyethanol. Optimized combination with broad spectrum efficacy and activity comparable to the standard parabens systems. Suitable for the protection of most types of cosmetics for rinse-off, leave-on & wet wipes in wide pH range.  
USE LEVELS: 0.3-1.0%

## KEMABEN 4

INCI name: Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, Propylparaben

**Very popular** preservative system with broad spectrum activity against bacteria and highly effective against fungi. Liquid combination widely used for the protection of emulsions, oils & wet wipes. Global approval for rinse-off & leave-on applications.  
USE LEVELS: 0.2-1.0%

## KEMABEN 5

INCI name: Phenoxyethanol, Propylene Glycol, Methylparaben, Ethylparaben, Propylparaben

Liquid preservative active against bacteria, yeasts and moulds. Optimised blend with **higher water solubility** suitable for aqueous and anhydrous cosmetics. Worldwide approved for rinse-off, leave-on & wet wipes.  
USE LEVELS: 0.5-1.5%

# Preservative systems with parabens

Parabens have been successfully used in foods, medicines and cosmetic preservation for almost a century. They were the most **widely used antifungals** in personal care products.

During the last years, more studies have been carried out on parabens and all existing data were deeply scrutinized. In 2013 the EU SCCS has issued a final opinion on the safety of parabens.



# Preservative systems with IPBC

Iodopropynyl Butylcarbamate, often abbreviated as IPBC, is a highly effective **fungicidal agent**.

It is widely used in cosmetic preservation in combination with antibacterials that complete its spectrum of action. Such blends show **synergistic effects**, allowing the use of lower levels of single preservatives.

IPBC is a **globally approved** cosmetic preservative. The very low use levels make it a cost-effective alternative to other antifungal agents like parabens in various applications.

It represents an efficient and **pH unsensitive** option for cosmetics which are susceptible to fungal contamination and for wet wipes preservation.

## **PRESERVATIVE A2 PLUS**

INCI name: Diazolidinyl Urea, Iodopropynyl Butylcarbamate

Synergistic combination in powder form, **highly effective** against bacteria, yeasts and moulds. Can be used alone at low use level in wide range of cosmetics over a broad pH range, particularly suggested for rinse-off products.

USE LEVELS: 0.05-0.2%

## **KEMIDANT PLUS**

INCI name: DMDM Hydantoin, Iodopropynyl Butylcarbamate

Powder form, synergistic combination **highly active** against bacteria, yeasts and moulds. Effective alternative with low use levels that can be used alone in many types of cosmetics, particularly in rinse-off products.

USE LEVELS: 0.05-0.3%



## **KEM PLUS**

INCI name: Phenoxyethanol, Iodopropynyl Butylcarbamate

Liquid preservative system based on the antifungal IPBC, highly active against yeasts and moulds. Effective alternative to parabens and useful for the protection **against fungal contamination** of a wide range of cosmetics for rinse-off, leave-on & wet wipes.

USE LEVELS: 0.02-0.4%

## **KEM PLUS 2**

INCI name: Phenoxyethanol, Iodopropynyl Butylcarbamate

Liquid preservative system with **broad spectrum activity** against bacteria, yeasts and moulds. Cost-effective and versatile alternative to paraben systems suitable for the protection of a wide range of cosmetics for rinse-off, leave-on & wet wipes.

USE LEVELS: 0.5-0.9

# Preservative systems with organic acids



Organic acids are a group of compounds with **weak acidic properties**, which are widely represented in nature as constituents of plants. Organic acids and their salts are largely used in foods, medicines and cosmetics.

They are good antimicrobial agents, mainly antifungals, which are effective in **formulations with acidic pH**. These preservatives exhibit their full activity in the undissociated form presents in acidic conditions. Only in this uncharged form they are able to pass through the microbial membrane and inhibit the growth of microorganisms.

With a long history of safe human use and **global approval**, the family of organic acids represents an efficient and well-accepted alternative for the preservation of cosmetics.

## **KEM K**

INCI name: Phenoxyethanol, Water, Potassium Sorbate

Skin-friendly and effective preserving blend with broad spectrum activity against bacteria, yeasts and moulds. **Efficient alternative** in cosmetic preservation, can be used for the protection of wide range of personal care products with a slightly acidic pH up to 6. Globally allowed in rinse-off, leave-on & wet wipes with no restrictions.  
USE LEVELS: 0.5-1.0%

## **KEM NK**

INCI name: Phenoxyethanol, Water, Sodium Benzoate, Potassium Sorbate

Optimised combination of mild cosmetic preservatives with broad spectrum action. Particularly suggested for individuals with sensitive skin and for the **most delicate** skin applications. Suitable for cosmetics with slight acidic pH, preferably up to 5.5. Worldwide permitted with no category restrictions.  
USE LEVELS: 0.5-1.2%

## **KEM PBD**

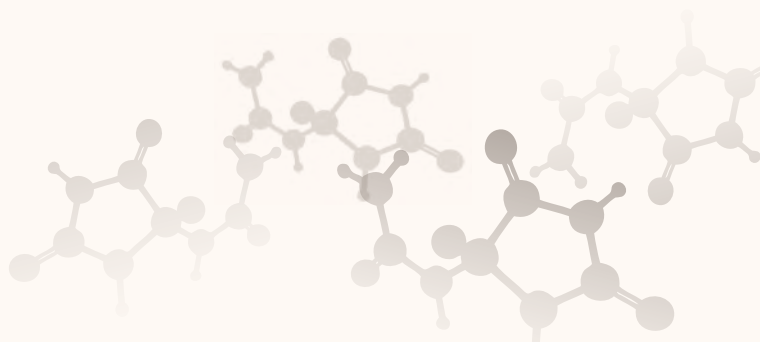
INCI name: Phenoxyethanol, Benzoic Acid, Dehydroacetic Acid

**Largely used** mild preserving blend with broad spectrum activity. Effective and gentle to skin option in cosmetic preservation. Globally approved for rinse-off and leave-on applications with slight acidic pH below 6.  
USE LEVELS: 0.5-1.2%

## **KEMIDANT K**

INCI name: DMDM Hydantoin, Water, Potassium Sorbate

**Highly active** preservative blend with broad spectrum antimicrobial activity against bacteria, yeasts and moulds. Stable and **cost-effective** system for the protection of wide range of cosmetics in acidic condition up to pH 6. Suitable for rinse-off, leave-on & wet wipes.  
USE LEVELS: 0.2-0.6%





# Preservative systems for natural cosmetics



Natural ingredients are generally perceived as a **safer choice** for the environment and for the consumers. During the last years natural cosmetics have grown from a niche segment to one of the **fastest growing** categories in personal care.

Consumers and formulators are looking for preservatives for natural cosmetics that are eco-friendly and maintain the same standard of efficacy and stability at reasonable costs.

Certification and **approval by certification bodies** for natural & organic cosmetics is becoming increasingly important as consumers are looking for third part verification of the natural claims.

## KEM NAT

INCI name: Benzyl alcohol, Glyceryl caprylate, Glyceryl Undecylenate

Innovative & unique preservative blend based on natural approved ingredients. Mild combination of benzyl alcohol with glyceryl esters as preservative boosters and emollients. Synergistic system effective against bacteria, yeasts and moulds in **broad pH range** from 4 to 8. Colourless and almost odourless, it is globally approved in rinse-off & leave-on products and ideal for more delicate cosmetics. It is COSMOS approved for use in natural & organic cosmetics.

USE LEVELS: 0.5-1.5%

## KEM NAT β

INCI name: Benzyl alcohol, Glyceryl caprylate, Benzoic acid, Propanediol

Synergistic combination of established preservatives with boosters, suitable for natural & mild cosmetics with acidic pH. Kem Nat β is gentle on the skin and effective against bacteria, yeasts & moulds. With **superior activity** against yeasts & moulds, it represents an efficient option even for wet wipes and formulations susceptible to fungal contamination. Colourless and almost odourless, it is effective in the pH range 4-6. It is globally approved without restrictions for rinse-off & leave-on cosmetics. Meets the requirements of Ecocert, Soil Association, BDIH, ICEA, NaTrue & COSMOS Standard.

USE LEVELS: 0.8-1.2%

## KEM E

INCI name: Benzyl alcohol, Water, Potassium Sorbate, Sodium benzoate

Liquid preservative with broad spectrum efficacy based on natural-identical ingredients. Gentle on the skin preserving system **highly effective** against bacteria, yeasts and moulds in acidic conditions up to pH 5.5. Globally approved in rinse-off & leave-on cosmetics. Conforms to the major certification standards for natural & organic cosmetics (COSMOS, NaTrue, Ecocert, BDIH, Soil Association, ICEA).

USE LEVELS: 0.5-1.0%

## KEM DHA

INCI name: Benzyl Alcohol, Dehydroacetic Acid, Water

Gentle on the skin and broad spectrum preserving combination **largely use** in cosmetics. Effective against bacteria, yeasts and molds, it is suitable for rinse-off & leave-on products with acidic pH **up to 6.5**. Globally approved and permitted in certified natural & organic cosmetics (COSMOS, NaTrue, Ecocert, Soil Association, BDIH, ICEA).

USE LEVELS: 0.2-0.8%

## KEM BS

INCI name: Water, Sodium Benzoate, Potassium Sorbate

Liquid blend with broad spectrum efficacy based on **food-grade preservatives**. Mild preserving system effective against bacteria with high activity on yeasts and molds. It is suitable for use in a wide variety of cosmetic products with acidic pH range up to 5.5. Globally approved without restrictions in rinse-off and leave-on products, permitted in natural & organic cosmetics (COSMOS, NaTrue, Ecocert, Soil Association, BDIH, ICEA).

Notes on regulatory status:

All listed preservatives can be used in cosmetics according to EU Cosmetics Regulation and US legislation. Restrictions on use levels, application and warning labels may apply. For more information please refer to specific product documentation.

# Preservative systems with boosters

An alternative approach to preservation is the use of preservative boosters in combination with traditional preservatives. These boosters are **multifunctional ingredients** that have some antimicrobial effect besides their main cosmetic functions.

Diols like caprylyl glycol or ethylhexylglycerin are the most used preservative boosters. With a surfactant-like structure, they act as emollients, emulsifiers with refatting, wetting and skin-feel enhancers properties.

The **synergistic combination** of preservatives and these multifunctional additives enhances the antimicrobial efficacy, reduce the amount of preservatives needed and improve the safety of formulations.

## KEM DIOL

INCI name: Phenoxyethanol, Caprylyl glycol

Modern preservation concept based on the combination of phenoxyethanol with the preservative booster caprylyl glycol. Kem Diol is a broad spectrum system globally approved, **colourless & odourless**, effective in broad pH range 4-8. Provides safe & efficient antimicrobial protection and can be used to lower the amount of other preservatives into cosmetic formulations.

USE LEVELS: 0.5-1.5%

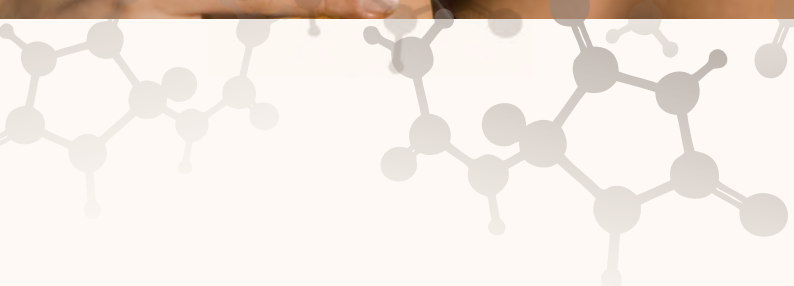
## KEM EHG

INCI name: Phenoxyethanol, Ethylhexylglycerin

Liquid preservative based on the cosmetic preservative phenoxyethanol boosted by the multifunctional ingredient ethylhexylglycerin. This optimized combination provides broad spectrum protection against bacteria, yeasts & moulds to a large variety of cosmetic formulations **without pH restrictions**.

Kem EHG is a colourless & odourless system **largely used** in cosmetic preservation that suits the needs of modern cosmetics for safety, efficacy & global approval.

USE LEVELS: 0.5-1.0%





# Multifunctional systems with antimicrobial properties

Nowadays many traditional preservatives are under attack by media, public and different organizations. Therefore the cosmetic industry is looking for reliable alternatives to classic preservatives that are not under public debate.

The Stabil range contains **no typical preservatives**, instead uses original & optimised combinations of multifunctional ingredients that provide efficient broad spectrum action.

These systems consist of no listed preservatives and can be used to formulate cosmetics that can be claimed as **preservative-free or self-preserving**.

## STABIL ZERO

INCI name: Pentylene Glycol, Caprylyl Glycol, Ethylhexylglycerin

Unique alternative for gentle & effective preservation of personal care products without traditional preservatives & with **no fragrances**. It is a combination of the longest used multifunctional diols that provides full spectrum efficacy on bacteria, yeasts & moulds.

Stabil Zero represents a **neutral & versatile system** with no effect on colour, odour & pH of finished cosmetics. This system can be used alone or at lower levels in combination with other antimicrobials agents or preservatives.

It can be used in wide range of cosmetics for leave-on & rinse-off, especially for the **most delicate applications** like eye, face, baby-care & mucous membranes.

USE LEVELS: 1.0-2.0%

## STABIL

INCI name: Phenethyl alcohol, Caprylyl Glycol

Stabil is an innovative multifunctional system which represents a reliable and safe **alternative to the traditional preservatives** for personal care.

It is a combination of widely accepted cosmetic ingredients which acts as a skin moisturizer, wetting agent and mild fragrance. Furthermore it has a **broad spectrum activity** against bacteria, yeasts and moulds, which allows the complete control of microbial growth.

Stabil is **globally approved** in all applications, contains no ingredients commonly recognized as preservatives and it is an ideal option to create mild and skin-friendly self-preserving cosmetics, which can be described as being **preservative-free**.

Clear, colourless liquid with rose-like scent, it is compatible with the most used cosmetic ingredients and effective in a wide range of pH and temperature. Stabil is a versatile system that can be used in wide range of personal care applications, particularly recommended for individuals with **sensitive skin, in face, eye care & baby care**. No further preservatives are normally required in the appropriately formulated product.

As a combination of largely accepted and safe cosmetic ingredients with **excellent antimicrobial performance**, Stabil offers formulators a reliable alternative preservation strategy which meets the demand of current cosmetic market.

USE LEVELS: 0.8-1.2%



# Microbiological service

Every cosmetic formulation has unique **preservative requirements** which depend on its composition, physical form, type of container, intended use and many other factors.

The complexity of cosmetics and the many interactive possibilities, makes it **difficult to predict** the ultimate effectiveness of preservatives in the final product accurately.

It is therefore necessary to conduct a **preservative-efficacy test** on the finished cosmetic to confirm that the preserved product may withstand the microbial contaminants it might meet during production and consumer use.

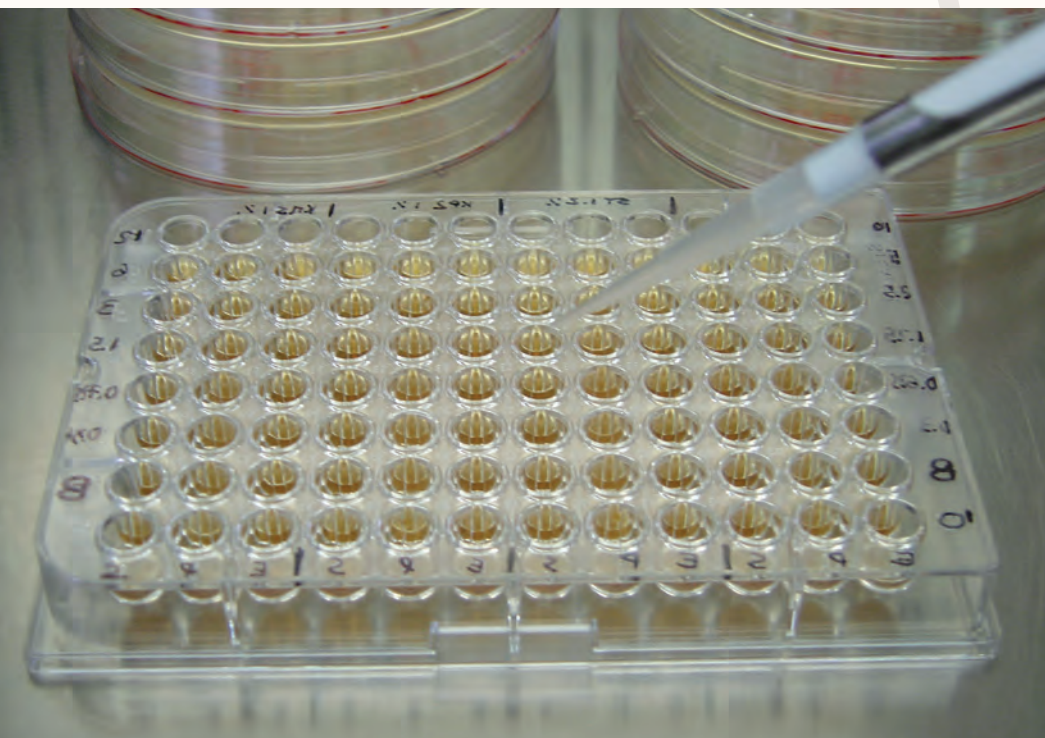
This test is also referred to as the **challenge-test**. It typically consists in the addition of standardized inocula of bacteria yeast and moulds to product samples. The surviving microorganisms are estimated during a 28-day incubation period at different time intervals, then the results obtained are compared with established acceptance standards.

The purpose of conducting a challenge-test is to select the most **appropriate type of preservative** and determine the **optimal use level** that ensures a **safe preservation** without excess. In this way, the preservative concentration is optimised and kept as low as possible in order to improve the skin compatibility, avoid adverse reactions and unnecessary costs.

To meet these specific needs we provide cosmetic manufacturers the experienced **technical support** of our microbiological laboratory.

As a part of our **microbiological service**, challenge tests can be offered to customers to enable formulators to implement the most adequate preservation of their formulations, compare the activity of different preservatives and find the most appropriate level of use.

Our technical service can also assist customers from the early stage of formula development and help solve preservation issues with existing preservative systems.





# Hair care

## GLYOXYLIC ACID 50H

INCI name: Glyoxylic Acid, Water

Hair styling ingredient with semi-permanent **hair straightening** and **hair conditioning** effect. The carboxylic and aldehyde groups of glyoxylic acid react with the amine groups present in hair keratin, resulting in the formation of stable bonds.

In particular, glyoxylic acid produces a **semi-permanent** hair straightening without breaking the cystine disulfide bridge. It provides long lasting relaxing effect of hair fibres, without causing damage to the hair and skin irritations typical of alkaline chemical and other straightening agents.

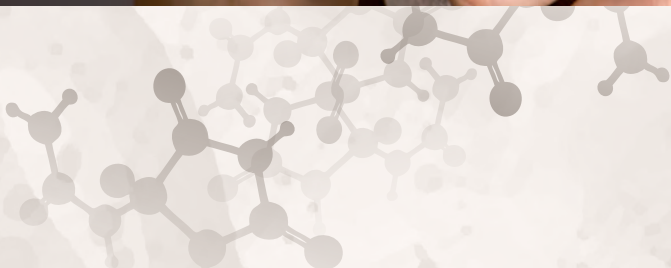
It is an organic acid with 50% of active in water solution, miscible in water and alcohols. Contains no formaldehyde.

Glyoxylic acid 50H finds use in hair straightening formulations to smooth **wavy & tightly curly hair**. When applied with flat iron it softens natural curls providing shiny silk appearance and improving hair maneageability. It represents a milder treatment that is largely used for the semi-permanent straightening of ethnic and frizzy hair.

Can be also employed as a **pH adjusting** agent to neutralize cosmetic formulations with high pH.

### APPLICATIONS:

» Hair straightening products



COMPANY PROFILE  
ALLANTOIN + ALLANTOIN EP/USP  
ALLANTOIN DERIVATIVES  
COSMETIC PRESERVATIVES  
» PRESERVATIVE SYSTEMS  
» PRESERVATIVE SYSTEMS WITH PARABENS  
PRESERVATIVE SYSTEMS WITH IPBC

PRESERVATIVE SYSTEMS WITH ORGANIC ACIDS  
PRESERVATIVE SYSTEMS FOR NATURAL COSMETICS  
PRESERVATIVE SYSTEMS WITH BOOSTERS  
MULTIFUNCTIONAL SYSTEMS WITH ANTIMICROBIAL PROPERTIES  
MICROBIOLOGICAL SERVICE  
HAIR CARE  
» **PRODUCT LIST**

# Product list

	Product name	INCI name
Allantoin	<b>ALLANTOIN</b> <b>ALLANTOIN EP/USP</b>	Allantoin Allantoin (Ph. Eur., USP, JPC name)
Allantoin derivatives	<b>ALCLOXA</b> <b>ALCLOXA A.S. MODIFIED</b> <b>ALDIOXA</b> <b>ALPANTHA</b> <b>ALLANTOIN CALCIUM PANTOTENATE</b> <b>ALGLYCERA</b> <b>ALLANTOIN VC</b> <b>ALMETH</b> <b>ALPOLY GAL</b>	Alcloxa Allantoin, Aluminum Chlorohydrate Aldioxa Allantoin Panthenol Allantoin Calcium Pantothenate Allantoin Glycyrretinic Acid Allantoin Ascorbate Allantoin Acetyl Methionine Allantoin Polygalacturonic Acid
Hair care ingredient	<b>GLYOXYLIC ACID 50H</b>	Glyoxylic Acid, Water
Preservative actives	<b>PRESERVATIVE A15</b> <b>PRESERVATIVE A2</b> <b>KEMIDANT</b> <b>KEMIDANT L</b> <b>KEMIDANT L 40</b> <b>KEM 30</b>	Imidazolidinyl Urea Diazolidinyl Urea DMDM Hydantoin DMDM Hydantoin, Water Water, DMDM Hydantoin Sodium Hydroxymethylglycinate, Water
Preservative systems with parabens	<b>KEMABEN</b> <b>KEMABEN M</b> <b>KEMABEN 2 - KEMABEN 2E</b> <b>KEMABEN 2ME</b> <b>KEMABEN ME</b> <b>KEMABEN 4</b> <b>KEMABEN 4IB</b> <b>KEMABEN 5</b> <b>KEMABEN DHA</b>	Propylene Glycol, Imidazolidinyl Urea, Methylparaben, Propylparaben Propylene Glycol, Diazolidinyl Urea, Methylparaben Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben Diazolidinyl urea, Methylparaben, Ethylparaben, Propylene Glycol Phenoxyethanol, Methylparaben, Ethylparaben Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, Propylparaben Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, Propylparaben, Isobutylparaben Phenoxyethanol, Propylene Glycol, Methylparaben, Ethylparaben, Propylparaben Phenoxyethanol, Methylparaben, Dehydroacetic Acid
Preservative systems with IPBC	<b>PRESERVATIVE A2 PLUS</b> <b>KEMIDANT PLUS</b> <b>KEM PLUS - KEM PLUS 2</b>	Diazolidinyl Urea, Iodopropynyl Butylcarbamate DMDM Hydantoin, IPBC Phenoxyethanol, IPBC
Preservative systems with organic acids	<b>KEM K</b> <b>KEM NK</b> <b>KEM PBD</b> <b>KEMIDANT K</b>	Phenoxyethanol, Water, Potassium Sorbate Phenoxyethanol, Water, Sodium Benzoate, Potassium Sorbate Phenoxyethanol, Benzoic Acid, Dehydroacetic Acid DMDM Hydantoin, Water, Potassium Sorbate
Preservative systems for natural cosmetics	<b>KEM NAT</b> <b>KEM NAT β</b> <b>KEM E</b> <b>KEM DHA</b> <b>KEM BS</b>	Benzyl Alcohol, Glyceryl Caprylate, Glyceryl Undecylenate Benzyl alcohol, Glyceryl caprylate, Benzoic acid, Propanediol Benzyl Alcohol, Water, Potassium Sorbate, Sodium Benzoate Benzyl Alcohol, Dehydroacetic Acid, Water Water, Sodium Benzoate, Potassium Sorbate
Preservative systems with preservative booster	<b>KEM DIOL</b> <b>KEM EH G</b>	Phenoxyethanol, Caprylyl Glycol Phenoxyethanol, Ethylhexylglycerin
Alternative preservation	<b>STABIL</b> <b>STABIL ZERO</b>	Phenethyl Alcohol, Caprylyl Glycol Pentylene Glycol, Caprylyl Glycol, Ethylhexylglycerin



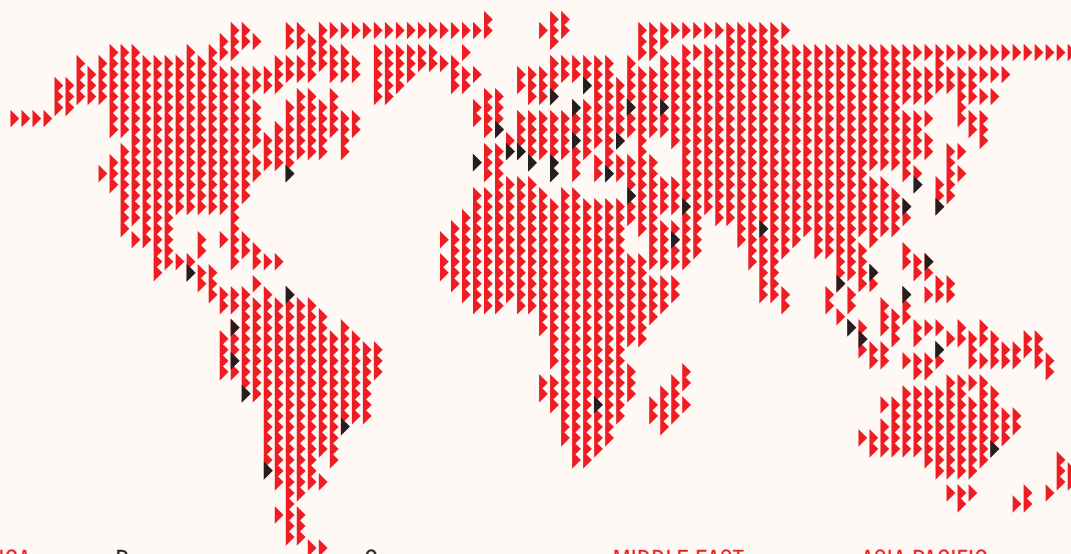
# Distribution network

[www.akema.it](http://www.akema.it)

Our products are available worldwide through our local agents or from our headquarters in Italy. **Additional products** are also available or can be developed according to specific needs.

Akema has a large **network of distributors and agents** in more than 40 countries worldwide. Further information and help finding the best solution for your needs can be obtained directly from ourselves or via our agents.

The complete product **documentation packet** and samples are available upon request. For more information on products, services and distribution in your area, please contact us directly or visit our website



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