

The Aminat[®] Range: High Efficacy Preservatives Based on Ethyl Lauroyl Arginate HCl

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Abstract

As a result of an increasing demand for safe cosmetic products, the preservative market has moved to more innocuous compounds. Due to its broad spectrum of activity and high solubility in the aqueous phase, Aminat[®]-G is an innovative natural-based antimicrobial that fulfils all the cosmetic market requirements.

Moreover, Aminat[®]-G has the additional advantage of Ecocert, Cosmos and NaTrue certification following the current guidelines of a more environmentally acceptable cosmetic ingredient.

Ethyl Lauroyl Arginate HCl (LAE[®]), which is the active of Aminat[®]-G, shows a very mild profile in terms of irritation and it shows added benefits provided by its cationic nature, such as good emulsifying properties and being a good smoothing agent for skin or hair.

LAE[®] is a food-grade cationic surfactant with antimicrobial properties, which is derived from natural building blocks: lauric acid and the amino acid *L*-arginine. This compound inhibits the proliferation of several microorganisms such as bacteria, fungi and yeasts by means of disturbance of the membrane potential, altering cell permeability and therefore, inducing the loss of cell viability.

Due to its broad spectrum of activity, LAE[®] can be used as the only preservative for many cosmetic formulations. However, it is well known that LAE[®], being a cationic surfactant, is not fully compatible with natural polymers that contain anionic groups, such as Xanthan Gum or Carbomer, resulting in a reduced ability to preserve the formulation. Under those circumstances, the combination of LAE[®] with other preservatives may be necessary.

LAE[®] has been fully studied as a preservative in different formulations (as Aminat[®]-G, alone or in combination with other preservatives, or as the main antimicrobial of the blends Aminat[®]-CP or Aminat[®]-CB). The Aminat[®] range

has been compared to some of the latest preservatives and preservative blends present in the cosmetic market, which are based on organic acids and alcohols as well as the ones based on combination of multifunctional products with some antimicrobial activity. The preservation ability of the Aminat[®] range has been proven to be superior to that of other preservative blends, due to the quick-killing effect provided by the cationic antimicrobial (LAE[®]).

Despite the presence in most formulations of anionic ingredients, the role of LAE[®] in achieving a good initial killing effect has resulted in it becoming essential. Therefore, combinations of LAE[®] with other preservatives are a universal solution to achieving, at the same time, the desired preservation level with an optimum toxicological profile.

Introduction

The Skin Care market in Europe is highly concerned about the risks of chemicals for human beings as well as for the environment. For this reason, in recent years, several preservatives have been banned or their use is being strongly limited. This is the case for formaldehyde and its releasers as well as isothiazolinones⁽¹⁾.

The most recent preservatives to receive negative feedback from the market have been the parabens. Parabens are the most widely used preservatives in skin care formulations, because of their low sensitising potential, as well as good efficacy. Nevertheless, some studies have linked them with a higher risk of breast cancer⁽²⁾ and many manufacturers are marketing their products as 'paraben-free'.

On the other hand, personal care manufacturers are starting to consider the origin of the ingredients which constitute a formulation and organisations such as Ecocert⁽³⁾, the Soil Association⁽⁴⁾, NaTrue⁽⁵⁾ or Cosmos⁽⁶⁾ are issuing certificates to formulations and raw materials taking into account the origin (natural or synthetic) of the ingredients such as surfactants, additives, extracts and also preservatives.

