

Bulletin 13 – Emulium Kappa Moisturizing Cushion

Introduction

The adoption of natural plant origin as one of the primary criteria in selection of active ingredients on skincare products is a fairly recent phenomenon. As the cutting edge on the rise of the adoption of the words “Natural”, *Gattefosse* had developed a brand new and yet creative **active texture** – “**Emulium Kappa**” a PEG-free emulsifier inspired by the plant world, opens the door to a brand new world of rich and creamy textures, with a unique cushion feel similar to that of silicone elastomers.



Unique Composition

Emulium Kappa consists of three elements which work together to guarantee **texture, emulsification and stability**.

Texture



Plant waxes ensure the survival of many plants living in hostile environments. They cover exposed surfaces and form a protective layer to prevent dehydration.



In order to create a unique sensorial identity, *Gattefosse* Oleochemistry engineers first worked on a combination of several plant waxes and then studied which sensory characteristics each wax could bring to the final texture or what type of chemical modifications could help create the desired texture.

There are three specific plant waxes that captured *Gattefosse* attention in particular:



Rice bran wax: its perfectly defined composition and hardness contribute to the final powdery touch.



Candelila wax: its thickening power adds richness to the formulas, its ability to retain water is also a key element of an active texture.



Jojoba wax: a unique liquid wax, it allows easy spreading and ensures softness.

In order to ease the use of the plant waxes in formulation, Gattefosse branched each plant wax with polyglycerol-3, using esterification reaction.

This combination has produced an ingredient with a **unique butter consistency**.

Emulsification

The second component of Emulium Kappa, essential for good emulsification, is **Sodium Stearoyl Lactylate (SSL)**.

This emulsifier, based on lactic acid, is very widely used in the food industry. Not only guaranteed have excellent tolerance, it is also known as a skin hydration agent thanks to its contribution towards the “Natural Moisturizing Factors” (NMF).

Stability

The third component of Emulium Kappa is a combination of consistency agents which help stabilize the viscosity of formulation at high temperatures.



Glyceryl stearate



Cetearyl alcohol



Active textures

Thanks to its unique composition, this wax-derived emulsifier enhances the moisturizing potential of formulas by means of a dual effect:



the moisturizing effect of the SSL component,



the anti-dehydration protection of the wax derivative.

Compared to several emulsifiers on the market, formulas containing Emulium Kappa have a higher water retention capacity. A test conducted on various emulsions with an equivalent oil phase, measured water evaporation (inspired by the WVTR-Water Vapour Transmission Rate – method, ASTM E95-96 standard). In this test, a cup filled with water is covered by a porous medium upon which the emulsion to be tested is placed as shown in the figure below.

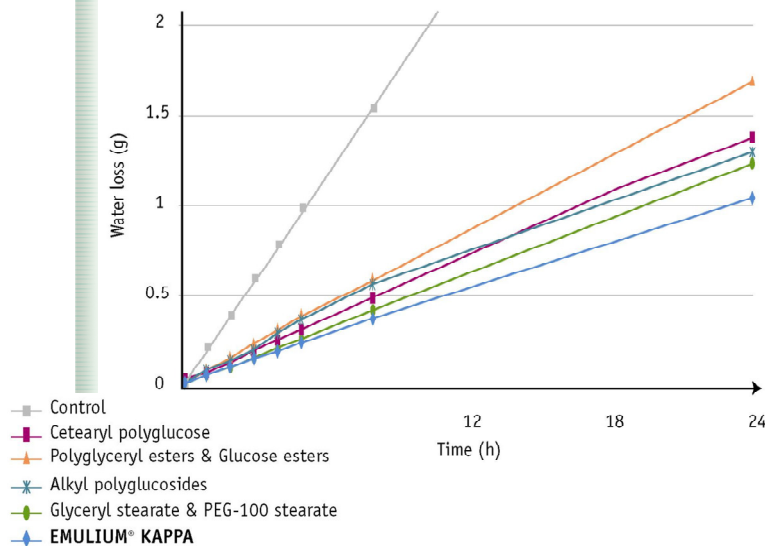
Emulsion
Nylon filter
Water



The emulsion is spread over the medium then left to rest for 16 hours to allow evaporation of the water contained in the emulsion itself. The system is then maintained for 24 hours at 32 C under a laminar flow and water loss is measured over this period of time.

The results obtained with emulsions containing Emulium Kappa or other emulsifier is as shown in the figure below:

Active Texture



In conclusion, Emulium Kappa has a higher water retention property if compared to the others as shown in the graph above.

What can we say about Emulium Kappa?

Emulium Kappa is more than just an emulsifier inspired by plant world. It also offers cosmetic formulations with a unique texture.

The unique texture is explained by Emulium Kappa capacity to structure the aqueous phase of emulsions.

Through the formation of a palpable cushion, the skin is plumped up and smoothed.

There are three main characteristics best to explain Emulium Kappa:



Strong Personality

Close to silicone elastomers → extreme softness, cushion effect without the disadvantage of their dry touch





Sensory Emulsifier (Touch + Pick up)

Always very “rich” touch upon application. Superior cushion effect compared to the other emulsifiers.



Enhances the Moisturizing Ability of the Formulas

Thanks to **Sodium Stearoyl Lactylate** & to the anti-dehydration effect of the wax complex



Emulium Kappa emulsions are truly different to others on the market by TEXTURE.

To remember...

Emulium kappa structures the aqueous phase.

Influence of shear – The most stable emulsions are obtained using the following conditions:



Dissolve Emulium Kappa in the oil phase



Heat both oil and aqueous phase to 70-75°C



Introduce, under rotor-stator type mixing (2000rpm), the aqueous phase in the oil phase (or the contrary). Maintain rapid mixing during 10 minutes, taking care to maintain the temperature >60°C



Stop rotor-stator mixer and cool using planetary or helical mixing.



It is important to limit the shear at the structuring temperatures of Emulium Kappa below 60°C for good stability of emulsions at 40°C and 50°C



Adapted natural gelling agents are recommended to increase the stability.

Note: Most carbomers disturb the modified wax network and are not recommended.

Recommended Usage...

Emulium Kappa is used between 4 and 6%.

(Higher percentages of Emulium Kappa increase the formula viscosity).

Formulation:

1. Moisturizing Cream (MM8177)
2. Eye Contour Cream (JB2104/C)
3. Anti-age Cream (MM8176/A)
4. Protective Moisturizing Cream (MM8223)
5. Anti-Stretch Mark Cream (CA/CR/002/06)
6. Rich Cream (CA/CR/EK/006/07)
7. Lavender Radiance Moisturizing Cream (CR/CA/LA/004/07)
8. Detoxifying Body Mud (CA/BM/001/07)
9. Crack Heel Balm (CA/CH/002/07)
10. Cream Anti-age (JB2104/D)
11. Collagen Booster (JB2193/B)
12. Remodeling Mask (JB2253/C)
13. Sunscreen Cream SPF 16 (MM8323/A)
14. Protective Cream (MM8366)
15. Mature Skin Cream (MM8425/A)



Please try our formulas and feel the difference for yourself or simply call us for even more formulas.

Contact Us Today!

Whether it is a sales enquiry or a sample request kindly contact us right away:

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