

**AAK**

# GLOBAL

AAK Beauty and Personal Care  
Magazine 2010



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## Create opportunities with Lipex®!

Natural trends are more in focus now than ever before. Mintel expects the popularity of natural beauty products to continue rising in 2010. However, we envisage a new, scientific approach to natural products with Nu Natural. This is a vision of natural care with less emphasis on certifications and a greater focus on results, effectiveness and safety.

Natural skin care products derived from botanical sources are now extremely popular. One of these natural secret ingredients is shea butter, which is widely used in beauty care. The Lipex® Shea family from AAK meets all your shea butter needs.

AAK is introducing two new shea butters in the Lipex® Shea Family range. Lipex® Shea Tris is a bioactive shea with high concentrations of triterpenes, which improve the moisturisation properties of skin care products (page 4).

The second product is a shea butter ester, Lipex® Shea WM. This is a high performance ingredient that brings extra benefits, like higher spreading properties and lighter skin feel in skin care formulations (page 5).

For soft lips Lipex® Sheasoft is the key. It adds extra moisture to lip balm and prevents lips from drying out.

All AAK Lipex® products are made in Sweden, where we support sustainable soft processing methods and remove all residues, but retain all the goodness like antioxidants and tocopherols.

For shea products we have full control over all the stages of process from kernels to Lipex®, making us real Lipid Expert!

All of this comes together to produce Lipex® – *Performance for Care*

Enjoy!



Rita  
Leisner



## Soft lips – lip balm applications using Lipex® Sheasoft

**An aspect of lipsticks and lip glosses that is sometimes overlooked is the need to include moisturising ingredients in the formula. A lack of moisturising ingredients can result in dry and chapped lips, especially in cold and dry weather conditions. But there's a solution – Lipex® Sheasoft.**

Shea butters have traditionally been used in skin care creams and lotions as bases for body butters and as ingredients in sunscreen and after-sun products. With its higher melting point and semi-solid consistency, Lipex® Sheasoft is ideal for formulating lip balms and other anhydrous formulations. In lip balms the moisturising benefits of Lipex® Sheasoft can be used to prevent the typical drying-out of lips in cold and dry weather conditions.

### All natural formula

The following lip balm formulation combines Lipex® Sheasoft with Lipex® Shea as the base for the formulation, using an all-natural formulation with vegetable oil emollients. Beeswax is used to start the solidification and to further increase the high temperature stability. Other natural waxes such as carnauba or candelilla can be exchanged for beeswax as they also have good compatibility with Lipex® Sheasoft. Akoline PGPR is added for extra gloss and for viscosity.

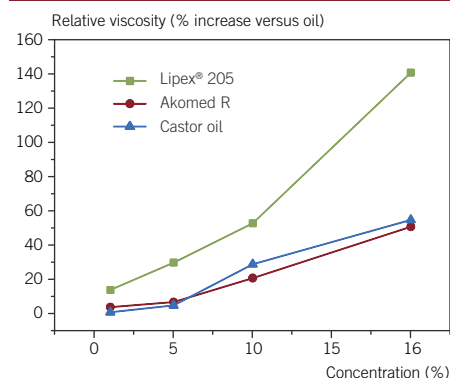
### Optimise sensory properties

The function of Lipex® Sheasoft in lip balm formulations is to act both as a moisturiser and consistency regulator. The effect on consistency depends on the concentration used, but it can also be modified by the selection of the

liquid phase. The viscosity of different blends of Lipex® Sheasoft with liquid emollients has been measured using a temperature-controlled cone/plate rheometer. As expected, relative viscosity increases with greater addition of Lipex® Sheasoft. The behaviour is similar to castor oil and caprylic/capric triglycerides, while a stronger structuring effect is seen in the liquid shea butter (Lipex® 205). This synergistic effect is due to the structures formed by the crystals of Lipex® Sheasoft in the different liquid phases, with crystals forming more stable aggregates in the liquid shea butter. This effect can be used to optimise the sensory properties and the stability of lip balms.

**Lipex® Sheasoft is a truly multi-functional ingredient for your anhydrous formulations – moisturiser, emollient and consistency regulator all in one!**

**Figure 1: Lipex® Sheasoft acts as a thickener in lip balm formulations**



**Table: Lip Balm formulation**

Phase	Ingredient name	INCI name (EU)	Amount (%)
A	Lipex® Sheasoft	Butyrospermum Parkii Butter	27
A	Lipex® Shea	Butyrospermum Parkii Butter	8
A	Akorex L	Canola Oil	49.8
A	Lipex® Omega 3/6	Olus Oil (and) Camelina Sativa Seed Oil	5
A	Beeswax	Cera Alba	5
A	Akoline PGPR	Polyglyceryl-3 Polyricinoleate	5
C	Tea Tree Oil	Melaleuca Alternifolia Leaf Oil	0.2



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Our goal is to provide cosmetic formulators with the most versatile range of shea butters. However, the work starts in the remote villages of the West African countryside. Improving quality requires an increased level of knowledge locally, but this can also result in opportunities for the sustainable development of shea trade.

# Lipex<sup>®</sup> Shea butters – made in Sweden

Some 6 yards of cloth, one goat, 3 litres of kerosene, 10 bowls of sorghum and 20 bowls of rice to feed your family is what you can buy for 50 U.S. dollars if you happen to live in a village in the north of Togo, far from the busy capital of Lomé. A profit of 50 dollars also happens to be what you could expect to make in a month if you have the time and opportunity to work to build your own business, perhaps together with the other women in your village. But how does this relate to buying Swedish shea butter from AAK?

## Secure supply of high-quality shea butter

AAK is a major buyer of shea kernels in several countries in West Africa as we use shea butter to make ingredients for chocolate and foods, as well as for cosmetics. We and our customers worldwide are dependent on a secure supply of high-quality shea butter, and this process starts in the West African villages where the kernels are collected. Our local staff travel around, meeting the local communities and instructing on how to handle the kernels in order to preserve the quality of the shea butter. This is also a way of increasing communication between villages so that best practices are spread, even to the remotest areas.

## Transparent market

Opening up a transparent market where everybody is treated fairly is difficult and takes time, but is necessary for a sustainable future for the shea trade. It often starts with small groups of women who pool their resources to create a better future, sometimes financed by a micro loan. Activities of organisations such as the United Nations Development Programme, supported by companies like AAK, are already changing the lives of many women in the region. Daily chores now take less time and more of

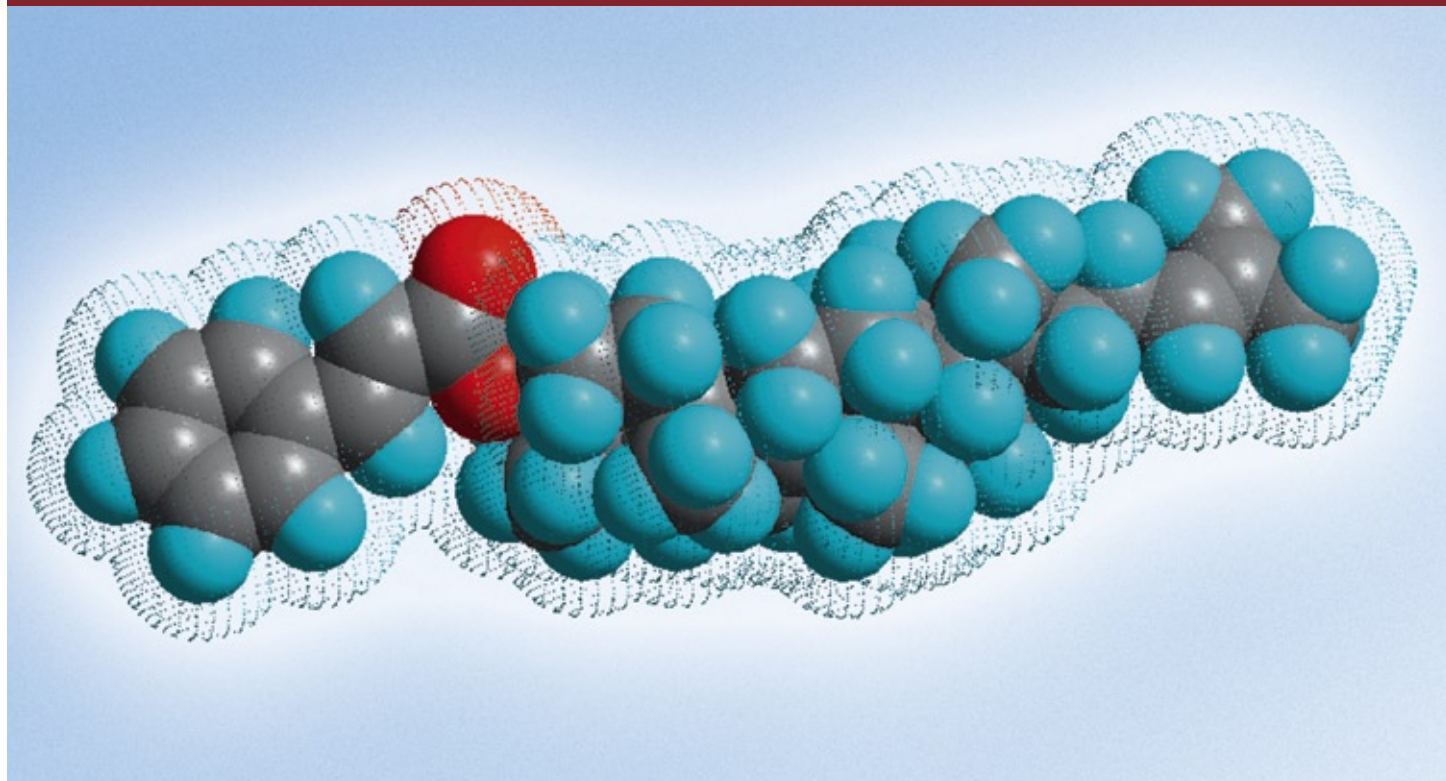
their efforts can be directed at generating alternative incomes. It also means that AAK can source the shea kernels it needs more quickly as more people are available for the harvest.

## Natural beauty starts in West Africa

A shorter harvesting time means better-quality shea kernels, which results in better shea butter. With more than 20 years of experience in making shea butter for cosmetics, we know that our customers expect high-quality butter in which the natural bio-active lipids are preserved. This requires advanced processing knowledge and quality control at every step. But natural beauty starts in the remote West African villages where the kernels are harvested.



Figure 1. Butyrospermol cinnamate – one of the bioactive esters in Lipex® Shea Tris.



# Lipex® Shea Tris – a new bioactive ingredient from shea butter

**What do you do if you are developing a new formulation targeting the cosmeceutical or dermocosmetic market but are having problems innovating? You need ingredients that are easy to formulate with, bring skin care benefits and are recognised by the consumer. The formulation needs to be stable and aesthetically appealing, while the cost has to be reasonable. Lipex® Shea Tris could be the new ingredient that offers what you need.**

Lipex® Shea Tris is a highly concentrated fraction of shea butter unsaponifiables, long known to provide formulations with anti-inflammatory and skin-enhancing effects. By applying modern separation techniques, the triterpene esters present in shea butter have been concentrated to a level of about 55% in Lipex® Shea Tris. The resulting ingredient is a thick, pasty semi-solid which dissolves easily in esters, vegetable oils and other commonly used emollients, making it easy to incorporate in emulsions of many kinds. It is also sufficiently polar to be used in surfactant-based serums and facial cleansers at concentrations of up to 0.5% for improved moisturisation.

## Concentrated triterpene esters

The positive effects of triterpene esters have been substantiated in many scientific studies. Amyrin, lupeol and butyrospermol cinnamates

**Table 1: Characteristic properties of Lipex® Shea Tris**

Appearance	Yellow to orange thick paste
Triterpene cinnamates and acetates	50-60%
Shea butter mono-, di- and triglycerides	40-50%
Use level in formulation	0.1-0.5%

are the dominant bioactive esters in Lipex® Shea Tris. The anti-inflammatory mechanism of one of these triterpene alcohols, lupeol, was examined in a study by Fernandez, who concluded that lupeol acts by inhibiting PGE-2 and several other inflammatory mediators (1). This effect may be further enhanced if the triterpene alcohol is esterified (2). The esterification decreases the melting point and increases solubility to make the triterpene alcohol more bioavailable.

The combination of a well-known ingredient and beneficial bioactivity could mean

Lipex® Shea Tris is just the ingredient you're looking for!

## References:

1. Fernández, MA et al. New insights into the mechanism of action of the anti-inflammatory triterpene lupeol. *J Pharm Pharmacol* 53[11], 1533-1539 (2001)
2. Kweifio-Okai, G. et al. Esterification improves antiarthritic effectiveness of lupeol, *Drug Dev. Res.* 35, 137-141 (1995)

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# New!

## Natural softness from shea butter esters – Lipex® Shea WM



**Cosmetic formulators today face significant challenges. First, they need to meet consumer demands for aesthetics, performance, novelty and flair in a stream of new products. In addition, given current financial difficulties and increased legislation, formulators need to deal with restrictions for new raw materials. But we can solve this dilemma for you with our introduction of Lipex® Shea WM.**

For a long time AAK has used a well-known cosmetic ingredient, Shea butter, and has modified it to give it new and even better properties. The inherent properties of shea butter have been optimised with cosmetic formulators in mind, providing stable, high-performance ingredients that bring real benefits to the consumer.

### Ideal in facial and eye care

Lipex® Shea WM is one of the latest developments in this line. Converting the shea triglycerides to fatty alcohol esters forms new emollients. Lipex® Shea WM contains an oleyl ester produced using an energy-efficient processing method, creating an ingredient with lower viscosity and a lighter skin feel than liquid shea butter. Its spreadability index is close to that of liquid shea butter, making Lipex® Shea WM an ideal ingredient in facial and eye care products.

### Health benefits

The high level of shea butter unsaponifiables (triterpene esters at 6-7%) adds to the skin health benefits and improves the moisturising effect of this emollient. It is highly compatible with all types of emollients, but for natural formulations other esters and vegetable oils are the ideal complements to Lipex® Shea WM.

### Typical properties of Lipex® Shea WM

Shea butter oleyl esters	73-89%
Shea butter unsaponifiables	6-7%
Viscosity @ 20°C	33-38 cP
Spreading index @ 40°C	25 mm <sup>2</sup>
Melting point	20-22°C
Use level	1-5%

### Provides moisturising effect

Lipex® Shea WM is also a good component for formulations that require a less shiny appearance. This can be an advantage in facial care creams and lotions, as well as when formulating lipsticks and lip glosses. The use of an ester is the easiest way to include a shea butter ingredient in a traditional lipstick: it presents no crystallisation problems or incompatibilities and also provides a healing and moisturising effect from the unsaponifiables.

Try it out in your next formulation and experience the luxurious feel and emolliency of a light shea butter ester.

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# Improve sensory properties with

**Aesthetics plays a key role in all cosmetic products. AAK natural emollients have a strong influence on their sensory profile, providing consumer sensorial appeal while also meeting demands for natural and functional products.**

The challenge for formulators is to develop new products that grab consumers' attention. Although different product categories have different objectives, aesthetics plays a key role in all of them. Consumers appreciate the feel-good factor that this sensorial appeal adds to everyday life. Vegetable lipids improve sensory properties and meet the great demand from consumers for natural products that provide functional and environmental benefits.

## Determining the type of formulation

Lipex® emollients can be used to improve the skin feel of cosmetic formulations in many product categories. Your choice of vegetable emollients is of great importance when tailoring your formulation to the demands of the consumer. You therefore first need to determine what type of formulation you are developing and in which product category.

## Sensory profiles

The variety of sensory profiles for different product categories for skin care emulsions can be determined by their application spreadability (light versus rich) and absorbency (dry versus oily); see table 1. Vegetable emollients have a strong influence on the sensory profile in any formulation owing to their differences in physicochemical profiles.

## Influence skin feel

Most emulsions use a combination of different emollients (esters, mineral oils, silicones) to improve the sensory skin feel and reduce any tackiness. Lipex® emollients are highly compatible with these traditional emollients and can be used to widen the sensory spectrum, with the natural Lipex® emollients providing properties that benefit your product. Here are

some examples of how you can use our natural and functional emollients to improve the skin feel in your formulations right from the start in your next product development.

## Lipex® influences sensory properties

The formulations in table 2 show how Lipex® products can provide a broad range of sensory opportunities by bringing a specific skin feel character to the different formulation categories described in table 1. The ingredients are the same except for the emollients, which comprise specific mixtures of natural lipids that influence the key sensory character of all the formulations. The differences in the sensory properties of these formulations depend on the choice of Lipex® vegetable emollients. Their specific physicochemical properties can provide a range of sensations, including a silky smooth feel, a more elegant skin feel or a quick or dry silky skin feel.

**The Body Butter** guideline formulation is a typical rich formulation with a long play time ending in a high slip. Lipex® Shea initially provides a richer skin feel, while Lipex® Sheasoft gives longer play time due to its semi-solid character, bringing elegance and a rich skin feel. Lipex® Shea WM has a higher slip, which gives the formulation spread and makes the product easy to apply, resulting in a rich and elegant skin feel.

**The Night Cream** is a rich cream with a dry after-feel ending in a low slip. The richness strengthens the consumer's perception of a caring product, just as a night cream should be. Lipex® L'sens and Lipex® Shea Tris provide function and caring as well as a long play time. Lipex® Shea and Akogel gives the formulation its creamy and rich skin feel, while Lipex® Shea W produces the necessary dry after-feel with its low slip.

**Table 1: Applying Sensory characteristic attributes for some formulation categories**

Spreadability	Rich (Long playtime)	Body Butters	Night Creams
	Light (Quick playtime)	Face Creams	Eye Creams
		Oily (High slip)	Dry (Low slip)
		<b>Absorbency</b>	



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# vegetable emollients

**Table 2: Guideline formulations improving sensory properties with AAK natural emollients**

Raw Material	INCI Name	% w/w			
		Body Butter AAK-10-112tili	Night Cream AAK-10-114tili	Light Face Cream AAK-10-111tili	Eye Cream AAK-10-113tili
Lipex® Shea	Butyrospermum Parkii Butter	13	5		
Lipex® Shea Tris	Butyrospermum Parkii Extract		0,2		0,2
Lipex® Shea WM	Shea Butter Oleyl Esters	2		2	
Lipex® Shea W	Shea Butter Cetyl Esters		2		2
Lipex® Sheasoft	Butyrospermum Parkii Butter	3			
Lipex® 205	Butyrospermum Parkii Oil				5
Lipex® L'sens	Soybean Glycerides (and) Butyrospermum Parkii Butter Unsaponifiables		3		
Akogel Plus	Hydrogenated Vegetable Oil		8		
Lipex® Omega Passiflora	Olus Oil (and) Passiflora Incarnata Seed Oil			3	
Akomed R	Caprylic/Capric Triglycerides			10	
Akoline PG7	Polyglyceryl-3-Stearate	3,5	3,5	3,5	1,8
Akoline MD50	Glyceryl Stearate	1	1	1	0,5
Akoline SL	Sodium Stearoyl Lactylate	0,2	0,2	0,2	0,1
Cetearyl Alcohol	Cetearyl Alcohol			0,5	1
DC 200 Fluid	Dimethicone	3		3	
Water, glycerin, preservatives		q.s	q.s	q.s	q.s

**The Face Cream** is a guideline formulation for a typical light and fresh Facial Cream. The emollient mix comprises a high proportion of caprylic/capric triglycerides and Lipex® Shea WM, which makes for easy spreading and a light skin feel.

**The Eye Cream** is a guideline formulation, with the typical characteristic ease of spread and dry skin feel. Lipex® Shea W provides a velvety after-feel and excellent dry absorbency, which also prevents the cream from migrating into the eyes.

**Sensory properties in a natural way**

Lipex® – Performance for Care – offers you sensory, functional, natural and vegetable-based products for a growing, demanding and exciting market. Try out the significant sensory appeal in your next development range of cosmetic products to meet and exceed your consumers' demands in a natural way!

**Meet AAK Beauty and Personal Care around the world**

- In-Cosmetics, Paris, France **13-15 April**
- NY SCC Suppliers Day, New Jersey, USA **11-12 May**
- FCE, São Paulo, Brazil **25-27 May**
- AAK ACADEMY™, Karlshamn, Sweden **21-22 September**
- In-Cosmetics in Asia, Bangkok, Thailand **2-4 November**

**GLOBAL**

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**AAK**

# Akoline – natural emulsifiers

**Formulate with natural emulsifiers for your natural skin care products. Akoline natural derived emulsifiers provide good functionality, skin moisturisation and an elegant skin feel for your formulations.**

When developing natural derived skin care formulations you may have carefully selected your natural emollient phase. But what about the emulsifiers? Does your emulsifying system fit with your natural claims?

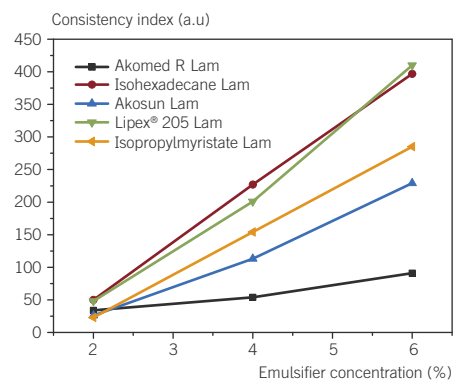
## Food-grade natural emulsifiers

Akoline emulsifiers are derived from natural and renewable vegetable oils, combined with polar groups such as citric and lactic acids and polyglycerols. They are produced to meet demands for high-quality and offer proven mildness for skin care applications. While being food-grade they also meet the needs of long-term emulsion stability and functionality which makes them a perfect choice for safe and natural skin care formulations.

## Favours liquid crystalline phases

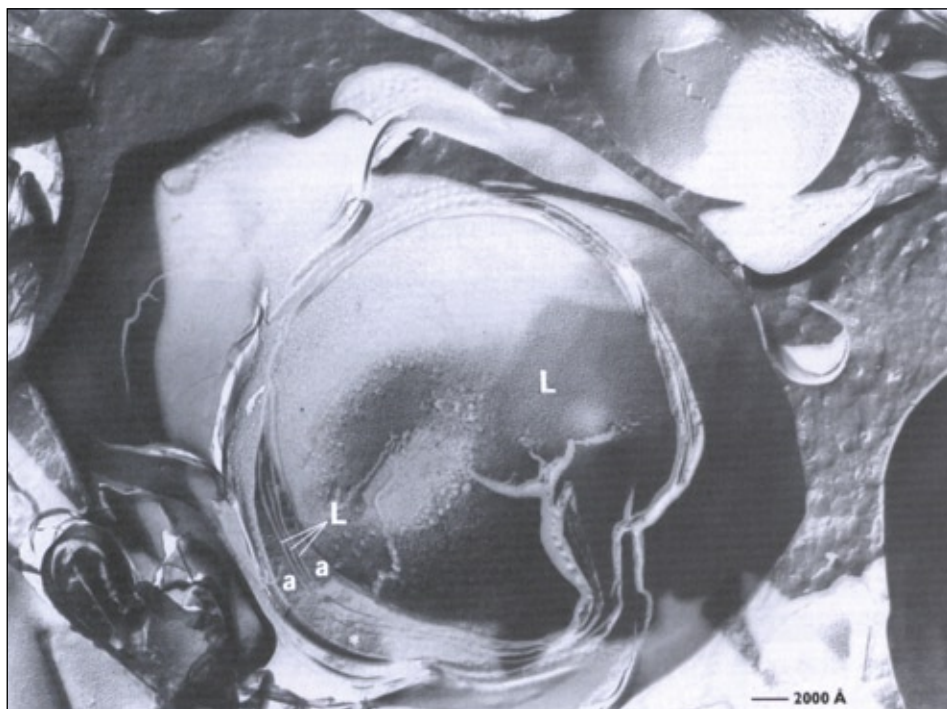
Akoline emulsifiers favour the formation of liquid crystalline phases. By combining the Akoline non-ionic polyglycerolester with a mono/diglyceride and an anionic surfactant at the approximate proportion of 75/20/5 you can easily build a stable emulsifying system of lamellar liquid crystalline phases efficiently surrounding and stabilising the dispersed oil phase droplets. Stable o/w emulsions are formed within a pH range of 5.5 - 7.5.

## Both emollient and emulsifier composition influence consistency



Effect of emollient type with lamellar emulsifier blend.

## Emulsion droplet covered by multiple layers of lamellar liquid crystals



Electron microscopic picture of o/w emulsion based on Akoline PG7 and Akoline SL  
Magnification 48.600 x  
a = aqua, water phase  
L = lipid lamellar structure

The choice of emollient and emulsifier composition will further influence the viscosity and stability of your emulsion. Common natural derived esters and triglycerides fit well into the liquid crystal network and result in a thickened and stable emulsion. The figure below illustrates the effect of various emollient types and emulsifier concentrations on the consistency of an emulsion including Akoline PG7, Akoline MD50 and Akoline SL at recommended proportions. Shown differences in the consistency are due to interactions by the emollients with the lamellar crystalline phases. Aspects such as emollient polarity and molecular structure are accordingly of importance for the final consistency.

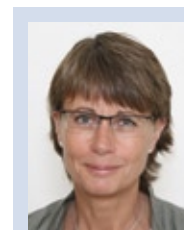
## Provides moisturising and elegant sensory properties

In skin care formulations Akoline emulsifiers offer good skin moisturising capacity. The described lamellar liquid crystal networks help retain a good water balance in the skin and prevent drying out. As good sources of alpha-

hydroxy acids the Akoline SL and GC provide additional moisturising capacity through their contribution to the skin's natural moisturising factor.

Emulsions stabilised by liquid lamellar crystalline networks also influence the skin's sensory properties. They demonstrate reduced friction and improved skin spreadability resulting in a pleasant skin feel during application and a soft elegant after-feel, making them very attractive for natural skin care formulations.

Strengthen your products' natural claims by formulating with the multifunctional Akoline food-grade emulsifiers!



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