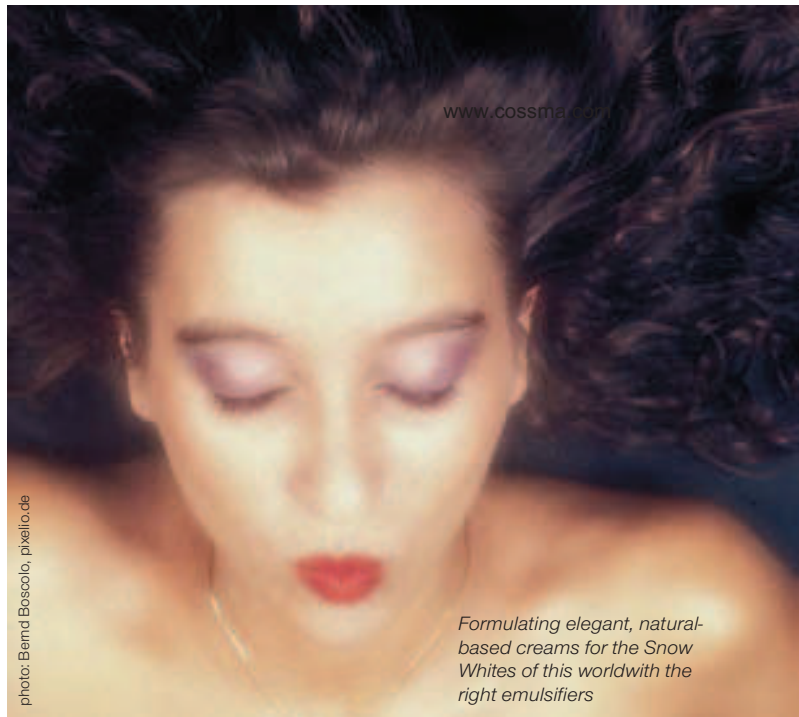


When Kolb were deciding which of their emulsifiers they would submit for Ecocert validation it quickly became clear that by choosing seven items they had chanced upon a magic number. Nicole Häusler, Product Manager Personal Care at Kolb, describes the advantages of these emulsifiers, which are compatible with natural cosmetics, and shows what they have to do with Snow White - a fairy tale about beauty.



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photo: Berni Boscolo, pixelio.de

*Formulating elegant, natural-based creams for the Snow Whites of this world with the right emulsifiers*

## Fairytales . . .

# . . . Emulsifiers

Kolb's new "Ingredients" range consists of seven Ecocert-validated emulsifiers produced using natural basic materials. It is composed of two associated ranges of emulsifiers, **Sympatens** and **Kosteran**, which are largely based on natural sugars and fatty alcohols.

Using **Sympatens-O/4200** (INCI: Sorbitan Laurate (and) Polyglyceryl-10 Laurate) emulsions can be produced under both cold and warm conditions. The temperature when emulsifying depends on the composition of the oily phase. If it contains exclusively components that are liquid at room temperature it is most convenient to emulsify at ambient temperature. Energy consumption and time-consuming process stages such as heating and cooling down, are eliminated. Heat-sensitive ingredients can be added right at the beginning of the bulk production process. Cold emulsifying is clearly advantageous from the point of view of saving time and energy when compared with hot emulsifying. However, if the product contains ingredients that are in a solid state at room temperature then they can be heated with no loss in quality. The emulsifier here described has a low level of self-

emulsifying properties and a high energy input during emulsifying is therefore not required.

It is particularly suitable for the manufacture of low viscosity sprayable O/W emulsions or as an impregnation fluid for moist tissues. Another application is in gel-creams, which are popular with young people that have a slightly oily complexion because the oily phase is relatively low and consists mainly of light emollients. Hence there is no residue of oily film on the skin. The skin is cared for and can be supplied with moisturisers.

**Sympatens-O/2500 G** and **Sympatens-O/3100 G** (both Sorbitan Stearate (and) Methylglucose Sesquistearate)

are suitable for a very wide range of O/W emulsions. Both free-flowing and solid emulsions can be produced. The emulsifiers can be used over such a wide range of emulsions because even where there is a lot of otherwise problematic ingredients their emulsifying action is not reduced – even with sun creams.

The fact that these two emulsifiers are compatible with electrolytes extends their range of applications. They impart a velvety skin feel and because they make it possible to achieve a wide range of viscosities they are suitable for numerous types of skin care and body care products. They can be used as single emulsifiers but there is no reason why they cannot be used with co-emulsifiers.

Using **Sympatens-W/4500** (INCI: Sorbitan Oleate (and) Polyglyceryl-3 Polyricinoleate), even without an in-depth knowledge of formulation, stable emulsions can be produced. The W/O emulsifier is liquid at room temperature and so is also suitable for gentle emulsifying at normal ambient. During a Sensory Trial Counter test some of the volunteers were surprised that this emulsifier formed W/O emulsions that had a skin feel very similar to



O/W emulsions. Thus the advantages of both types of emulsion can be successfully combined. This emulsifier has, thanks to its good skin tolerance and sun filter properties, established itself as an emulsifier for sun protection products, principally for low viscosity lotions that spread well over the skin. Furthermore it is often used in environmentally-friendly, cold emulsified baby care products.

Ingredients in the Kosteran range can be included without any complications. They are compatible with electrolytes and can be used in a wide pH range. **Kosteran-L/1** (INCI: Sorbitan Laurate) is an emulsifier for O/W emulsions, despite which it is frequently used in combination with emulsifiers that are somewhat more hydrophilic. An important area of application for sorbitan laurate is in products with a high pigment content such as eyeliner or mascara. It acts as a co-additive in wetting the pigment and as an intermediary between the pigment phase and the bulk product. In this way the stability of the products is also improved.

Because **Kosteran-O/1** (INCI: Sorbitan Oleate) performs extremely well in light W/O emulsions rich in skin care ingredients that have been developed for use on particularly dry skin areas it is especially useful in regenerating night-time creams or body lotions.

**Kosteran-S/1 G** (INCI: Sorbitan Stearate) also forms W/O emulsions.

### Snow White and the green emulsifiers

The fairy tale of beautiful, young Snow White with hair as black as ebony, lips as red as blood and skin as white as snow, is about a queen who is growing old and, being jealous of Snow White's youth and beauty, poisons her. Cosmetics help to maintain youthful beauty (without resorting to criminal acts).

Because with **Sympatens-O/4200** the oily phase is kept relatively low, and mainly consists of light emollients, gel-creams produced in this way are particularly popular with those who have a young, Snow White type of complexion. There is no oily film left on the skin. Instead the skin is cared for and can be supplied with moisturisers.

Snow White could also have been totally enamoured with a sun cream produced using **Sympatens-O/2500 G** or **Sympatens-O/3100 G** to protect her porcelain complexion from the sun's rays, from sunburn and from light-induced skin ageing.

Perhaps Snow White's sensitive skin would have already been cared for and protected when she was a baby, using products containing **Sympatens-W/4500**, and perhaps these baby care products would have been cold emulsified in an environmentally-friendly way. It can well be imagined that Snow White highlighted the beauty of her eyes with an eyeliner whose pigment phase was stabilised with **Kosteran-L/1**.

Her snow white skin also needed plenty of nightly beauty sleep, which was made more effective by use of a regenerating night-time cream or body lotion with **Kosteran-O/1** (INCI: Sorbitan Oleate) which would have been active while she rested. And if Snow White ever went off on a wellness weekend she surely looked forward to a sensuous massage with a fragrant massage cream formulated with, for instance, **Kosteran-S/1**.

Unlike **Kosteran-O/1**, it is solid at room temperature. That is also the main difference, as this emulsifier, thanks to its structure, forms more compact emulsions. Recommended applications are high viscosity creams such as massage creams, which are required to remain for a longer period on the skin without rubbing in too quickly. It is also highly suitable for fragranced massage creams.

Only a few years ago natural cosmetics were found only in health food

shops and similar outlets. Today many manufacturers of traditional cosmetics have expanded their ranges to include natural cosmetics – the best way to help the tale of Snow White's natural beauty come true.

Additional information can be found on the Internet (see. Internet button)

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### **VIP of the Month**

Dr. Petra Wirth of Alphachem talks about the safety assessment of natural cosmetics products