

Application note – Soaps, creams and lotions

There are many commonly used products within personal care. Soaps, creams and lotions represent a significant piece of the various product categories excluding cosmetics and perfumes. One important element of formulating the above-mentioned products is to have a solid base of ingredients and approaches. Below we have summarized a few products and ingredients which will greatly assist you in formulating your high-end products.

Product examples



A Sunflower oil based cream with the help of Pair2Phase 1

The Pair2Phase 1 and 2 products from Schill+Seilacher are designed to provide an easy and effective way to formulate creams and lotions. In this case we simply prepared a base of 25% Sunflower oil in water.

Due to its lamellar micelles formed it provides an efficient way to retain moisture. Pair2Phase generally also results in non-sticky lotions and creams with good water resistance, e.g. in the use in sun care products.

Formulation*:

4.5% Pair2Phase1
25.5% Sunflower oil

Optionally preservative. *Balance with water

Procedure: Pair2Phase1 is dissolved in Sunflower oil at 80°C. Complete dissolution was not reached but did not cause issues in the cream formation. Under heavy stirring water (80°C) is added at a slow but steady pace. After full addition of the water the emulsion is left to cool under stirring. The Cream formation takes place at 50°C to form a thick and smooth cream. See picture above.

Additional components such as glycols, butters, glycerol and actives can be added to form a ready cream.



A Rapeseed oil based lotion with the help of Pair2phase 1

A very convenient way of making lotions from most lipophilic phases is to employ Pair2phase 1 or 2 from Schill+Seilacher.

Formulation*:

2.5% Pair2Phase1

14% Rapeseed oil

Optionally preservative. *Balance with water

Procedure: Pair2Phase1 is dissolved in Sunflower oil at 80°C. Complete dissolution was not reached but did not cause issues in the lotion formation. Under heavy stirring water (80°C) is added at a slow but steady pace. After full addition of the water the emulsion is left to cool under stirring. The lotion formation takes place at 50°C to form a smooth and viscous lotion. See picture above.

Additional components such as glycols, butters, glycerol and actives can be added to form a ready cream.



Compact foam soap from Perlasthan SC 25 NKW

Perlasthan SC 25 NKW is a sulphate free, very mild, high foaming surfactant. Perlasthan SC 25 NKW is highly suitable for any cleansing application such as hand, body or baby soap.

Formulation*:



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4% Perlastan SC 25 NKW

0.2% Dissolvine GL-47-S

Optionally preservative. *Balance with water

Procedure: Mix the ingredients with water. Both the Perlastan and Dissolvine GL-47-S dissolves to produce a foam soap phase. The product is employed using a foam dispenser to produce a very stable and creamy foam.



Sulphate free soap from self-thickening Rheo2Green 2

Rheo2Green2 is a sulphate free, easy to use, formulation that is self-thickening upon pH-adjustment. This product is used to produce very mild, sulphate free, hand soaps, shampoos, pet care products and more.

Formulation*:

33% Rheo2Green2

Citric acid for pH adjustment

Optionally preservative. Optionally Dissolvine GL-47S for increased performance and $\text{Ca}^{2+}/\text{Mg}^{2+}$ -control. *Balance with water

Procedure: Mix the Rheo2Green with water. Add Citric acid (in this case as is, i.e. powder), until the optimal pH is reached. Optimal pH is 4.8-4.9 for maximum thickness. In this case it took 2% of Citric acid (on top of the base recipe) to achieve optimal pH and resulting thickness.

Note: The correct surfactant structures are formed within a specific pH-window. This window is $4.7 < \text{pH} < 5.0$, with an optimum at 4.8-4.9. This means that “over titration” results in viscosity loss. A weak acid such as Citric acid is recommended.

Additional components such as perfumes, colorants and other are added to form a ready liquid soap.

For inquires or further information please contact your sales representative.