

THE ROLE OF EMULSIFIERS IN MODERN TECHNOLOGY OF COSMETIC MEDICATIONS

Nesterenko T. A., Derehuz L.V., Malysheva Y.O.

The College of the National University of Pharmacy, Kharkiv, Ukraine

tanyan393@gmail.com

Actuality of the subject:

There are just a few investigations of the quality of hand creams being done nowadays and Ukraine is not an exception. According to the Internet resources they are generally held by a specific cosmetic company in a close mode. Of course, this information is very limited and it is very difficult and expensive for the average consumer to check it.

To make the right choice in the assortment of the hand creams and to have a good result after using it you should pay attention to the characteristics of a cream.

Therefore, having analyzed several hand creams of industrial production we made a conclusion that some components are almost useless, and some of them are even harmful. So, emulsifier Trytanolamin, which is a part of the tested cream, is a strong alkaline compound used in industry: in washing-up liquids, polishes and paints. The next questionable component is acrylate copolymer. It is water-soluble polymer used not only in cosmetics but also in production of varnish-and-paint materials, sanitary engineering, furniture and materials for nail modeling in nail salons.

The presence of useless components in the creams produced at factories motivated us to conduct the research with the cream of our own production.

The requirements, which were set up to the produced emulsion cream are colour and smell, weight homogeneity, absorbency.

An emulsion is a two-phase system. The principal components are an oil phase and an aqueous (water) phase. Emulsions are a fundamental product form for many cosmetic categories and these are made possible by careful selection of the optimum emulsifier system.

The aqueous phase is water plus any combination of materials which are polar and dissolve, at least to some extent, in water. The oil phase comprises one or more oily materials, or other ingredients which are non-polar and exhibit at least some solubility in oily materials.

It is known that the emulsifier is a substance that can mix water and oil – substances that never mix with each other under normal conditions. Emulsifiers are employed in cosmetics to prepare emulsions.

The efficacy of emulsifying agents depends on their ability to reduce surface tension, to form complex films on the surface of emulsified droplets, and to create a repulsive barrier on emulsified droplets to prevent their coalescence.

For the experiment we used a guar gum.

Guar gum is an odourless powder of white or yellowish colour. It is extracted from milled seed endosperms of guar beans. The seeds contain up to 70% of gum.

The composition of the cream of our own production includes olive oil, beeswax, mineral water, bitter orange oil. Beeswax contains esters (70-75%), free fatty acid (12-15%), carbohydrates (10%), and mineral flavors. The main chemical elements are carbon wax (80%), water (13%) and oxygen (7%). Wax is rich in vitamin A. It includes tocopherols (vitamin E) that have an antioxidant properties; carotenoids; flavonoids - bioactive substances involved in redox reactions; chlorophyll; squalene that protects from skin cancer and others.

Technology of production of emulsion creams of o /w type involves the following operations:

1. Preparation of the aqueous phase;
2. Preparation of the oil phase;
3. Both phases (water and oil) are placed into a water bath;
4. Emulsification;
5. Cooling;
6. An essential oil adding;
7. Cream packaging.

Evaluation of consumer characteristics was made with the help of students and teachers.

Conclusion:

According to the research, which was attended by 20 participants, the cream has positive evaluation. All participants who tested the cream said that its structure is quite oily, thanks to the presence of beeswax in its composition. Of course, we took into account the peculiarities and the skin type of the participants, on which the absorbency of the cream depended.

According to the point of view of the participants the cream has a light odour, delicate and soft structure, it is pleasant for the skin, its surface appearance corresponds to the demands required from factory produced creams.

Later we asked again the participants about the feeling on the skin and received the answer that the skin became softer.

Definitely the creams that contain natural components are useful not only for the skin, but also for the consumers' health.

It is profitable, useful and easy to prepare such creams yourself.