

The evaluation of microbiological purity of a cosmetic product according to European Standard EN-ISO 21149 – case study.

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INTRODUCTION

The evaluation of microbiological purity is one of the safety criteria to permit trading of a cosmetic product on the territory of the European Union. This requirement provides for safe use of cosmetics and protects users against possible microbiological infections while using cosmetics.

AIM OF THE STUDY

The objective of the study was to evaluate the microbiological purity of a cosmetic product – moisturising cream for all skin types.

MATERIAL AND METHODS

The material for the study involved randomly selected three packaging units of the same cream, with the volume of 100 ml, commercially purchased, before its expiry date. The products were originally packed and additionally secured with lamination, without any traces of use. The evaluation of microbiological purity as regards the presence and the number of aerobic mesophilic bacteria was performed according to the methodology specified in EN-ISO 21149 for cosmetic products.

RESULTS AND DISCUSSION

The analysis revealed presence of aerobic mesophilic bacteria in each of the creams, with the following contamination rate: sample 1: 5.9×10^4 cfu/g; sample 2: 4.7×10^4 cfu/g; sample 3: 3.2×10^5 cfu/g. The pH analysis of the creams pointed to high values: sample 1: 9.5; sample 2: 8.2; sample 3: 10.1. The obtained results of microbiological analyses significantly exceed the permissible limit for bacteria specified in EN-ISO 17516, according to which number of such bacteria cannot be higher than $\leq 1 \times 10^3$ cfu/g of a sample. Pursuant to the ingredients stated on the label, the presence of preservatives was detected: potassium sorbate and sodium benzoate. In cosmetic products, such compounds are active up to the value of pH 5.5, hence probably the change of pH of the products caused lack of preservatives' activity, and therefore proliferation of the bacteria in the creams.

CONCLUSIONS

The evaluation of the obtained results clearly points to no efficiency of the preservative system applied in the cosmetic product, causing its microbiological contamination. The cosmetic is not safe for use in humans.

Literature:

1. Regulation (EC) No 1223/2009 of the European Parliament and of the Council of 30 November 2009 of cosmetics products.
2. Cosmetics – Microbiology – Evaluation of the antimicrobial protection of a cosmetic product.