BIOAFFECTION AND BIOSTABILITY OF LEATHER MATERIALS

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PROSPECTS FOR THE BIOCIDAL TREATMENT OF LEATHER AND SHOE MATERIALS

Tarasenko A.[1], Andreyeva O.[1], Kachan R.[2]
[1] *Kyiv National University of Technologies and Design, Ukraine*
[2] *LLC «Interdez», Kyiv, Ukraine*
antar_knutd@ukr.net

In operation, the shoe, including made of the skin, its contamination by microorganisms takes place, which leads to a deterioration of consumer properties, occurrence of an unpleasant odor, the development of various infections. As a rule, inside the shoe is set high relative humidity, resulting in increased growth of fungi and bacteria, as leather, from which manufactured footwear products, and its individual components, for example, water, protein and fat, fillers are a favorable environment for the development of microorganisms. Infection of the skin of the foot cover, microtrauma caused as a result of growing nails, abrasions and lacerations, leads to microbial invasion of the epidermis and, consequently, to the human skin diseases. All this necessitates the biocidal treatment of leather and shoe materials to give them antibacterial, antifungal and other biocidal properties.

Introduction biocides possible at different stages of the manufacture of leather and shoe materials, and is especially important in the production of leather for the internal parts of the shoe, as in the operation of footwear products as a result of sweating feet inside the shoe are formed and are actively multiplying bacteria. The disadvantages of the majority of known methods and technologies for biocide treatment of the skin are the high consumption and a narrow range of action of the biocidal use of antimicrobials, and their negative effect on the environment.

The aim of this work is to find effective ways of biocidal treatment of leather and shoe materials through the creation and use of modern means (drugs), which, due to its antibacterial, antifungal and other biocidal characteristics, provide long-term operation of footwear products without compromising consumer properties, without compromising human health and the environment.

Analysis of the results of several studies indicates the advantage of antimicrobial action of silver, its ability to exhibit antibacterial effects at very low concentrations («oligodynamic effect»). The widespread introduction of the preparations prevents their relatively high cost.

One of the promising areas of preservation of the quality of shoe materials is their treatment of microencapsulated biocide containing natural antimicrobial oils. When testing lining and insole material from skin and textiles in abrasion resistance and molding at different temperatures found that the effectiveness of microcapsules with natural antimicrobial oils depends not only on the type of shoe material and the portion of footwear, but also on the nature of the material of construction of the shell microcapsules.

In view of the expressed idea of creating a new generation of microencapsulated antibacterial agents based on the different nature of the reagents.

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