

## DEVELOPMENT OF COMPOSITION AND TECHNOLOGY OF FOAM-CLEANING AGENT IN SOLID FORM

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**Introduction.** Microbial contamination of the skin by pathogenic, conditionally pathogenic microorganisms under certain conditions provokes a number of pathologies of the skin, indicating the urgency of the use of antibacterial agents. Solid antibacterial soap has not lost its relevance and demand among staff of medical institutions of various profiles as means of hand treatment immediately before performing various medical manipulations in the complex procedure of antiseptic skin treatment..

**Aim.** The aim of the research is the development of the composition and technology of solid antibacterial soap with chloroxylenol and essential oil of tea tree.

**Materials and methods.** The object of the study served the samples of antibacterial soap from different manufacturers; experimental samples of toilet soap. The organoleptic, physico-chemical properties of soaps of different manufacturers and developed samples of solid soaps were studied; the antibacterial properties of the latter were studied.

Study of organoleptic properties of solid soap and determination of physical and chemical parameters (qualitative number, mass fraction of soda products, temperature of freezing of fatty acids, mass fraction of sodium chloride were determined according to State Standard 4537: 2006.

The calculation of the mass fraction of each base oil, as well as additives and alkali, was performed taking into account the numbers of saponification of each component of the fat phase. Experimental samples of a solid-release antibacterial soap were made in a cold way.

**Results and discussion.** In order to substantiate the composition of the soap base, there were analyzed the organoleptic, physical, chemical and consumer properties of 11 samples of solid antibacterial soap of various manufacturers and their composition was studied.

It was established that in order to provide an antibacterial effect, the following additives were added to their composition: triclosan, tetranyl-U, sulfur, birch tar, silver particles, propolis, medicinal plant extracts (sage, green tea, etc.).

Synthetic surface-active substances can cause severe allergic reactions of the skin, provoke a series of dermatological pathologies. Therefore, in developing the formula of soap, there were chosen the products of natural origin: cocoa butter, coconut oil, palm oil, and walnut oil. Antibacterial components are chloroxylenol, tea tree essential oil, glycerin softener. An aqueous solution of sodium bicarbonate was used to neutralize.

The results of studying the organoleptic, physical and chemical parameters of the quality of experimental samples of antibacterial soap are given in the table.

Table

Quality indicators of antibacterial soap samples

<i>Indicator</i>	<i>The result of the study</i>
Appearance	homogeneous surface without cracks and stains
Form	oval
Colour	white
Odour	Pleasant smell of essential oil of tea tree
Mass fraction of free alkali,%	not found
Mass fraction Na <sub>2</sub> CO <sub>3</sub> ,%	not found
Mass fraction of soda products,%	not found
Mass fraction NaCl, %	not found
Fatty acid freezing point, ° C	39

**Conclusion.** The study of organoleptic and physico-chemical properties of solid soap of Ukrainian and foreign production was conducted. The basis of the solid soap of antibacterial action was substantiated and the quality indicators were investigated in accordance with the requirements of normative documentation.