

та по снижению выбросов, эффективному управлению отходами и следованию высоким стандартам позволяет не только минимизировать воздействие на природу, но и укреплять деловую репутацию.

1. ПАО «Северсталь». Выбросы парниковых газов [Электронный ресурс]. – URL: <https://severstal.com/rus/sustainable-development/climate/greenhouse-gas-emissions/> (дата обращения: 03.11.2025).
2. ПАО «Северсталь». Ключевые экологические показатели [Электронный ресурс]. – URL: <https://severstal.com/rus/sustainable-development/environment/waste-management/> (дата обращения: 03.11.2025).
3. ПАО «Северсталь». Рециклинг отходов Череповецкого металлургического комбината в 2023 году превысил 98% [Электронный ресурс]. – URL: <https://severstal.com/rus/media/archive/retsikling-otkhodov-cherepovetskogo-metallurgicheskogo-kombinata-v-2023-godu-prevysil-98-/> (дата обращения: 03.11.2025).

HOW THE INORGANIC COMPONENTS INFLUENCE THE QUALITY OF INDIGENOUS PRODUCED TOOTHPASTES OJSC «MODUM» AND AYURVEDIC TOOTHPASTES FROM SRI LANKA

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Nowadays the industry produces a big variety of cosmetic tools and the most common are toothpastes. This sector takes about 20 % from overall volume of cosmetics.

Toothpastes are efficient and economical means for preventing and treatment of mouth cavity. Using of toothpastes is regular and doesn't require the involvement of medical staff. Hygienic and prophylactic toothpastes are widely used means of oral care, so their consumer properties play the main role. The color of toothpaste, its taste. Consistency and the content of trace elements – all this criteria are important.

Audience survey. There are the most noticeable groups of testees. We made a research to learn how do young people usually make a choice of a toothpaste: 31 % (from 100 of testees) look at the composition and company's promises; 17 % (from 100 of testees) pay attention on color and odor of a toothpaste. The price, the country of origin, other consumer opinions are also important. Some students pay special attention to companies which are ecologically-friendly and do not test on animals. Students from Sri Lanka usually use Ayurvedic toothpastes.

The objective – to analyze the impact of inorganic components on the quality of indigenous produced toothpastes OJSC «Modum» and Ayurvedic toothpastes.

Material and methods. The review of the composition of toothpastes produced by OJCS «Modum» on the market in Belarus and Ayurvedic toothpastes from Sri Lanka.

Results and their discussion. The quality of toothpastes is determined by a number of criteria. The international standard ISO 116909 «Stomatology. Toothpastes. Requirements, test methods and marking» recommends to consider the following options: a toothpaste must be compatible with the oral tissues, a toothpaste must be free of easily fermentable carbohydrates, it must have pH from 5,5 to 10,5. If its pH is less than 5,5 a toothpaste must be tested on demineralization, mass fraction of fluorides shouldn't be more than 20 mg/kg, it must be abrasive, organoleptic indicators (appearance, taste, color, odor).

The quality of toothpastes is determined by:

1. Microbiological indicators: the amount of microorganisms CFU/1 g must be less than 1×10^2
2. The content of fluorine must be less than 1500 mg/kg.
3. The fraction of heavy metals less than 0.01 %.
4. pH 7.5-10.5.
5. Organoleptic properties.

The main constituents of toothpastes are abrasive binding components, surfactants, also it could have substances for oral care. There are variant additives: Fluorine, Anti-inflammatory substances, Vitamins, Calcium chloride (for reducing the sensitivity).

Audience survey. There are the most noticeable groups of testees. The results of our research show that: 45 % (from 100 of students) use «32 pearls», 10 % use «WÜNDERDENT», 10% use «SILVER DENT» and the others use another kinds of toothpastes.

Analyzing the composition of toothpastes «32 pearls», produced by OJSC «Modum» shows that it contains the great amount of inorganic components, which give significant therapeutical effect. It's necessary to highlight: pentacal triophosphate (prevents teeth scurf formation), silicon dioxide hydrate (cleans and polishes teeth), silicon dioxide (an abrasive, cleans and polishes teeth), sodium fluoride (strengthen tooth enamel, prevents caries).

Calcium Carbonate; Sorbitol; Aqua; Glycerin; Sodium Lauryl

Conclusions. Bioactive components, which are parts of the composition of toothpastes, produced by OJSC «Modum», enrich tooth tissues with fluorides and calcium compounds, microelements, vitamins and increase their resistance. Well-balanced composition of toothpaste could only be made with considering of all components, because many of them could have double effect and inreact with other components.

On the assumption of the researches, toothpastes produced by "Modum" are as useful for health, as import toothpastes are.

1. Official site of belarusian cosmetics MODUM [Electronic resource] //URL: <https://www.modum.by/>.