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Harmful chemicals in cosmetics

This problem is relevant since most people use cosmetic products daily (various creams, shower gels, deodorants, etc.). Therefore, we must know what we use and what harmful substances are part of cosmetics and how they affect our health and body. The choice of cosmetics, which include harmful chemicals, can significantly harm our health (allergies, dermatitis).

We would like to be more competent in this area so as not to make mistakes when choosing a cosmetic product.

To address this problem, we chose care cosmetics, specifically creams and deodorants.



The purpose of our work: familiarization with the most common harmful chemicals in ear cosmetics. Also the effect of toxic substances on the human body. In our work, we collected and systematized information about the most harmful chemicals that are contained in cosmetics.

Formaldehyde

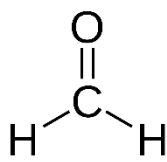


Formaldehyde is an organic compound, a colorless gas with a pungent odor, readily soluble in water, alcohols. Carcinogen toxic Depending on its concentration in a cosmetic product, it can have a negative effect on vision, respiratory and nervous systems, cause dermatitis and allergies.

Formaldehyde can be found in shower products, conditioners and shampoos, moisturizers for the body and face, lotions for the face and body, mascara. In the above products, mainly formaldehyde is used as a preservative. It destroys the fungus, successfully fights with most bacteria and some viruses.

Systematic Name (IUPAC): Metanal

Chemical formula: CH_2O



Structural formula of the compound:

Formaldehyde affects the body at the cellular level. It causes a deficiency of ATP molecules, in particular, in the brain and retina, which contributes to the destruction of nerve tissue and visual analyzers. When it enters the bloodstream, formaldehyde binds to blood proteins, most of it quickly turns into formic acid, which is very slowly eliminated from the body.

This gas causes irritation of the mucosa, resulting in damage to the central nervous system. Skin irritation and allergic reactions can occur. It affects the liver, kidneys, acts as a strong irritant to the mucous membranes of the eye.

BHT

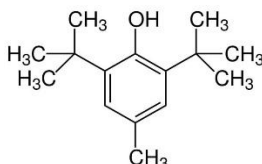
BHT is a lipophilic organic substance, a representative of the phenol class, widely used in the chemical industry as an antioxidant, also found in cosmetics.

BHT can be found in almost all cosmetic products (as part of creams, deodorants, lipsticks, baby oils, and food products). BHT ensures the long life of any product and promotes tissue regeneration. On the other hand, it can cause allergies, hives, dermatitis.

As a rule, preservatives such as BHT have an accumulating effect on the skin.

Traditional name: ionol, butylhydroxytoluene.

Systematic Name (IUPAC): BHT abbreviation.



Structural formula of the compound:

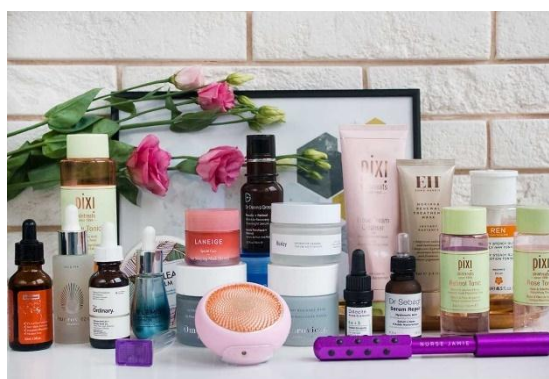
Butylhydroxytoluene is one of the preservatives that you should definitely pay attention to. Especially dangerous for health is the use of BHT in lipstick, as it can directly enter the oral cavity and, as a result, into the digestive tract.

Various moisturizing and whitening creams contain E321, as a result of which the butyl hydroxytoluene is absorbed through the skin pores into the skin and into the bloodstream.

BHT antioxidants can penetrate the skin and interfere with the human hormonal system. This is done by the so-called "endocrine disruptor."

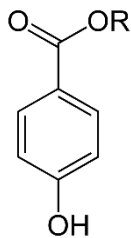
Parabens

Parabens are the common name for a whole class of chemicals widely used in cosmetics as preservatives. They are esters of para-hydroxybenzoic acid, which gave the name parabens. The most famous are ethyl paraben, methyl paraben, propyl paraben, butyl paraben, isobutyl paraben and their sodium salts. All commercially



used parabens are produced synthetically and are classified according to the classification of excipients as so-called antimicrobial reagents or, in other words, as preservatives.

According to the IUPAC nomenclature: para-hydroxybenzoate



Structural formula of the compound:



Parabens disrupt the permeability of the cytoplasmic membrane of the cell; as a result, the transport function of the membrane changes. The substances necessary for life do not enter the cell, and harmful metabolic products are not excreted, which leads to the death of the body. Parabens inhibit the function of mitochondria.

Conclusions

1. Formaldehyde is a preservative with bactericidal and antifungal effects. It is also a carcinogen with a general toxic effect on the body. Formaldehyde acts on the nervous system, respiratory tract, liver and acts as a strong allergen. Formaldehyde is found in shower gels, body creams, shampoos.
2. Butylhydroxytoluene - is a lipophilic (fat-soluble) water-insoluble organic compound that is used as an antioxidant, as a food supplement (E321), as well as for pharmaceutical and cosmetic purposes. BHT is oxidized primarily in fats or oils that protect foods from spoilage. BHT can be found in almost all cosmetic products. There is a danger to the brain, nervous and respiratory systems. It also causes allergies, dermatitis, urticaria.
3. Parabens are the common name for a whole class of chemicals widely used in cosmetics as preservatives. Currently, there are different points of view regarding parabens: there are opponents who oppose the use of parabens, and advocates who actively prove that parabens are not able to provoke various diseases.



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