

CHEMISTRY OF LIPSTICK

In the modern world, girls seek to emphasize the individuality of their appearance and stand out from the crowd. They are often helped in this by cosmetic products, including lipstick! Lipstick is a product that not only helps us to beautify our face, but also cares for the skin of our lips. Currently, hygienic lipsticks, lip oils, glosses, matte and satin lipsticks, lipsticks with mother-of-pearl and glitter, liquid lipsticks and lipsticks - "pencils" are distinguished, and a huge variety of shades allows every fashionista to make a choice.

Traces of the first lipstick were found in ancient Babylon - where women achieved a bright lip color with the help of a special mixture of semi-precious stones crushed to the smallest particles. The ancient Egyptians also appreciated bright lips. They are considered the first inventors of lipstick. Dark lips were in fashion in Ancient Egypt, so women had to literally follow the proverb "beauty requires sacrifice", because very harmful substances - bromine, iron oxide - were added to the lipstick to make the color brighter. The Egyptians loved lipstick so much, that's why they even took it with them to the "afterlife" [1].

Let's talk about the filling of a cosmetic product. The basis of any lipstick is wax. Beeswax connects the components of a lipstick, gives it elasticity, softness and promotes better fixation of colorants on the lips. Carnuba wax, which is extracted from the leaves of the Brazilian palm tree, gives lipstick the desired hardness and specific melting point. This substance allows the lipstick not to melt or deteriorate in the sun.

Oils are also important components of lipsticks like wax. Castor oil, olive oil, cocoa butter and minerals are widely used. They give lipstick softening and glossy effect. In addition, they act as solvents for dyes and pigments [2].

Lanolin is another structural component of lipstick. It is isolated from sheep's wool. Previously, it was considered the cause of allergies in some people, but now science refutes its harm [4].

Pigments and dyes contain a small percentage of the lipstick composition, but they are the most important elements, because they add color to the lipstick. Carmine red, also known as carminic acid, is a common red pigment that is obtained from the Ararat cochineal.

There is a variety of insects that live on cacti. Another pigment component is called eosin. It is a colorant that actually changes color when applied. Lipstick contains eosin of a slightly blue hue. When it comes into contact with the skin, it reacts with the amino groups of the skin proteins and the color is activated on the lips. Titanium dioxide is used to dilute red dyes and obtain various shades of pink. The addition of the smallest spherical particles of this compound, known as microspheres, improves the texture of a lipstick, giving it a more pleasant consistency [3].

Other several compounds can be added in small amounts to impart secondary properties to the lipstick. Vitamin E is used as auxiliary components for moisturizing. Essential oils and fragrances serve for a pleasant aroma of lipstick, as well as capsaicin.

This compound used in lipsticks claims to increase the volume of the lips. Pearlescent lipstick contains boric acid, which gives it extra shine. Some lipstick manufacturers add particles of mica or quartz to its composition, which also creates an overflowing effect.

In recent years, there has been concern about the very small amounts of heavy metals found in some lipsticks. Lead is the most potentially harmful ingredient in lipstick. It improves color fastness. Do not forget that lead, as a heavy metal, tends to accumulate, which means that its concentration in the body increases over time. Lead can be eliminated from the body for more than 20 years [2].

In the production of a lipstick pencil, its ingredients are heated and mixed together until a homogeneous mass, which is poured into metal molds, where it solidifies to form rods. The resulting rods are brought into an open flame for half a second. As a result, all irregularities are removed from their surface and lipstick becomes smooth and shiny.

The composition of glosses and liquid lipsticks differs from solid ones only in a large amount of oils. Thanks to chemistry, lipstick has been significantly modified over the past ninety years. Now it is an indispensable component of female attractiveness, which is so important for a special kind of chemical reactions between a man and a woman [4].

ЛІТЕРАТУРА

1. <https://www.spletnik.ru/beauty/review/40329-istoriya-gubnoy-pomady-ot-proshlogo-k-nastoyashcemu.html>
2. <http://web.kpi.kharkov.ua/nanochem/sostav-gubnoj-pomady-infografika/>
3. <https://www.compoundchem.com/>
4. http://hnb.com.ua/articles/s-krasota-sostav_gubnoy_pomady-1502