Mascara

Mascara is a cosmetic (a beauty product) applied to the eyelashes to make them look thicker, longer, and darker. Mascaras have been used since ancient times. As far back as 4000 B.C.E., both Egyptian men and women used makeup to outline and decorate their eyes. The Egyptians used soot or mixed eye powder with animal fat to make eye cosmetics. The powders were usually made from green malachite (copper ore) or dark gray galena (lead ore). The present-day name for galena is kohl.

The Babylonians and ancient Greeks also used eye cosmetics, as did the Romans in later centuries. After the fall of the Roman Empire (476 C.E.), the use of cosmetics declined, although eye cosmetics continued to be used in Middle Eastern countries. During the Renaissance (fourteenth through sixteenth centuries), cosmetics were again used in Europe.

Modern Mascara

Before the 1900s, American women did not commonly wear cosmetics. Cosmetics were generally associated with prostitutes or other “sinful” women who painted their faces. However, as women fought for the right to vote and other opportunities that men enjoyed, such as to become lawyers and doctors, they started wearing makeup to assert their independence. In 1913, a chemist, T.L. Williams, created the first mascara out of Vaseline® petroleum jelly and coal dust, subsequently establishing the company Maybelline.

The color additive kohl is not approved for use in the United States. Kohl contains salts of lead or antimony and has been linked to poisoning in some people.
named after his sister Mabel and the ingredient Vaseline®. In 1917, Maybelline produced the first modern mascara, a cake mascara, which was applied to the eyelashes with a dampened brush. Helena Rubinstein (1871–1965) developed the first waterproof mascara in 1939. In the early 1960s, Maybelline produced the Ultra Lash Mascara, the first automatic mascara. Instead of a cake, the mascara came in a tube along with a grooved brush. When pulled from the tube, the brush was already coated with the mascara for easy application.

**Raw Materials**

There are many different formulas for making mascara. All contain pigments (coloring substances). The United States prohibits the use of pigments derived from coal or tar in eye cosmetics. Therefore, manufacturers have to use natural colors and artificial pigments. Most mascara formulas use carbon black for the black pigment and iron oxide for brown colors. Some recipes use the ultramarine blue color.

One common type of mascara consists of an emulsion of oils, waxes, and water. Oils may be mineral oil, lanolin, linseed oil, castor oil, oil of turpentine, eucalyptus oil, or sesame oil. The waxes used include beeswax, carnauba wax, or paraffin. Some formulas use alcohol. Lotion-based formulas contain stearic acid and stiffeners, such as cerasin and gum. The gum used may be gum tragacanth or methyl cellulose. Some mascaras have fine rayon fibers, which make the product more viscous (thick and sticky).

**The Manufacturing Process**

There are two main types of mascara manufactured. One type is made using the anhydrous (without water) method. Mascaras that have a lotion base are made using the emulsion method.
Anhydrous method

1 The ingredients are carefully measured and weighed. They are then put into a mixing tank or kettle to make a small batch of 10 to 30 gallons (38 to 114 liters) of mascara. Heat is applied to melt the waxes, and the mixture is stirred using a propeller blade. The stirring continues until the mixture reaches a semi-solid state.

Emulsion method

2 Water and thickeners are combined to make a lotion or cream base. In a separate container, waxes and emulsifiers are heated, and pigments are added. The lotion base and wax-emulsifier mixture are combined in a homogenizer, or mixer. Unlike the tank used in the anhydrous method, the homogenizer has a closed lid that keeps out the air and prevents evaporation. The homogenizer blends the ingredients at a very high speed, breaking down the oils and waxes and holding them in suspension in the water. The homogenizer may contain as little as 5 gallons (19 liters) or as much as 100 gallons (380 liters) of mascara. The blending continues until the mixture reaches room temperature.

Filling

3 This step is used for both methods of manufacture. After the mascara solution has reached a semi-solid state (anhydrous method) or a cooled state (emulsion method), it is transferred to a tote bin. The tote bin is rolled to a filling area, and the mascara is poured into the hopper (a receptacle that holds the mascara) of a filling machine.

4 The filling machine pumps a measured amount (about 0.175 ounce, or 5 grams) of the mascara into glass or plastic bottles. The bottles are usually capped by hand. Samples are removed for inspection, and the rest are packaged for distribution.

Quality Control

Factory inspectors check for quality and purity at various stages of the manufacturing process. The ingredients are checked in the tank before mixing begins to ensure that the correct ingredients and proper amounts are in place. After the batch is blended, it is checked again. After bottling of the

**EYELASH DYEING**

Some beauty salons offer “permanent” eyelash and eyebrow dyeing by using hair dyes for coloring. According to the U.S. Food and Drug Administration (FDA), no natural or artificial color additives have been approved for such use at home or at beauty salons. When misused on eyelashes or eyebrows, hair dyes could cause serious reactions, including blindness or even death.

emulsion: A suspension of small beads of one liquid within another liquid with which the first liquid will not mix; for example, oil in water.

kohl: A cosmetic used by women, especially in Asia and the Middle East, as an eye makeup. It usually consists of salts of metals, such as lead and antimony.

pigment: A coloring substance.
Mascara can be manufactured using the anhydrous method or the emulsion method.

In a closed-lid homogenizer, the lotion base created by the water and thickeners is combined with the wax mixture. The closed lid keeps out the air and eliminates evaporation.
mascara batch is completed, samples representing the beginning, middle, and end of the batch are taken. These samples are tested for chemical composition, as well as for impurities from microorganisms.

Interestingly, the federal government does not require mascara manufacturers to seek approval or review of their products before selling them to the public. Manufacturers may use any ingredient, except for color additives and a number of prohibited ingredients. The U.S. Food and Drug Administration (FDA) can regulate these products only after they are already in the market. If a certain product proves dangerous after consumers have used them, the FDA has to go through the Justice Department in order to take action, including inspecting the cosmetic factory and collecting mascara samples.

The Future

Cosmetic companies do not seem to run out of creative ideas when it comes to mascara. Today, mascaras not only darken, lengthen, and thicken, they also curl, soften, and condition lashes. Some boast of having ingredients that fight bacteria that may invade the eyes. Ingredients found in hair products, such as vitamin E, panthenol, and ceramide, are being added to mascara formulas. Aside from the standard colors of black and brown, other colors are available, such as burgundy, blue, green, and violet. This assortment of colors and pearlized mascaras are popular with young women. Some companies have even come out with mascaras that thicken the lashes to give the impression of false lashes.

For More Information

Periodicals


Web Sites
