

Surprising Ingredients Found in Lipstick

Analysis by [Dr. Joseph Mercola](#)

October 07, 2024

STORY AT-A-GLANCE

- › The annual revenue in the U.S. cosmetic industry is over \$49 billion each year and yet the U.S. government does not require testing cosmetics before you start using them
- › The average woman will apply up to 9 pounds of lipstick in her lifetime and swallow 30% of it; 65% wear lipstick daily and 40% own more than 20 different lipstick tubes
- › Your cosmetic ingredients include a unique blend of chemicals, heavy metals, pesticides, sperm whale excrement, snail slime and ground fish scales

Editor's Note: This article is a reprint. It was originally published November 23, 2016.

The annual revenue in the cosmetic industry is over \$49 billion,¹ yet the U.S. government does not require mandatory testing for these products before they hit store shelves. This means that the lipsticks, moisturizers and lip balms you use may contain more than you bargained for.

The U.S. Food and Drug Administration (FDA) is charged with regulating the cosmetic industry² but not approving products, except for color additives.³ Essentially the FDA is responsible for regulating a cosmetic product only after it has reached the consumer, except if it contains a color additive, such as lipstick.

However, the entire tube of lipstick does not require approval, only the color additive. So, unless research links a cosmetic product to damage to your health, or demonstrates it

contains an ingredient harmful to your health, the FDA has no legal reason to investigate.

There are a number of interesting ingredients you might find in your makeup and perfumes you might otherwise not apply to your lips or your body. Some of these are harmful to your health, and others are just downright strange.

The Reign of Cosmetics

Lipstick is foundational to many women's beauty routines. On average, a woman will apply up to 9 pounds of lipstick in her lifetime, 65% wear lipstick daily and 40% of women own more than 20 tubes of lipstick.⁴

Although 70% of men polled believe red lipstick is sexy, 90% of women say wearing it makes them feel better about themselves and they don't wear it to attract men.

Lipstick carries a big punch in a woman's cosmetic arsenal, the history of which is traced back to ancient civilizations. Lip color was popular among the Egyptians, Babylonians and Greeks.⁵ Later, during the mid-1500s, Queen Elizabeth I and her court used red mercuric sulfide to add color to their lips and cheeks.

Western society turned a cheek to red lips and makeup in the late 1800s when only promiscuous women were believed to wear lipstick.

It wasn't until the 1900s that cosmetics and lipstick enjoyed a resurgence in society, spurred by an improvement in the manufacturing process and a reduction in price. Throughout history cosmetics have played a role in the way society interprets beauty.

Through the flapper era when makeup was bold and colorful, to the hippie years when flower power was face-painted and into the latter years of the 21st century when makeup has taken on a more natural look, **cosmetics** have made a unique impression on society.

Lipstick is the least expensive and most popular cosmetic in the world today. It has a distinctive role in the cosmetics you choose since it's one of the few that will actually end up in your stomach.

When you wash your face, 15% ends up washing down the drain, 5% is left on the lip of your cup, another 5% ends up on your eating utensils and an amazing 30% is swallowed when you lick your lips and eat.⁶

How Is Your Lipstick Manufactured?

As your lipstick is more likely to end up in your stomach than other cosmetics, it's important you know both how it's made and what's going into the products. The largest ingredients by content are usually waxes, alcohol, pigments and oil.⁷

The wax is there to give the product structure. The higher the melting point of the wax, the less likely it will melt in the sun or heat of your purse.

There is no industry standard for the shape of a lipstick or lipstick size. There is also no standardization for the type, number or amount of ingredients used. Aside for the base ingredients (alcohol, oil, wax and pigment) the amount and number of other materials will vary greatly between different manufacturers.

The manufacturing of the product occurs in three separate steps. First the ingredients for the different parts of the lipstick are melted and mixed. The solvents, fats and waxes are all melted and mixed separately. Pigment is ground to avoid small granules in the lipstick and the ingredients are then all mixed together.

At this stage the lipstick can be stored and poured later, or poured into lipstick tubes immediately. Mixing a large batch helps to maintain color consistency across many shades of pinks, reds and mauves that cosmetic companies produce.

Long-wearing lipstick formulas are designed with emollients that evaporate quickly, leaving the pigment and a film that protects the pigment.⁸ Glossy formulas have ingredients that are uniformly reflective and matte finishes have more wax.

Your lipstick also contains fragrances, chemicals and heavy metals. Although the FDA is charged with regulating cosmetics, they evaluate risk based on your exposure to one tube of lipstick and not your lifetime potential of ingesting pounds of the product.

Chemical Additives

In an effort to improve the wearability, durability and customer satisfaction with their products, manufacturers continue to experiment with chemical additives, none of which need FDA approval.

Some of these chemicals come with their own list of negative health effects, but they are not tested when combined with other chemicals in the lipstick. **Methylparabens** and propylparabens are preservatives used in many cosmetics in the U.S., but banned in the European Union (EU) for their toxicity to humans.

They are just two types of parabens found in cosmetics and food preservatives and are known endocrine disruptors.⁹ The FDA states they are included to protect consumers from harmful bacterial growth.¹⁰

Vitamin A may pose a significant risk to pregnant women, but Revlon Super Lustrous Lipstick is just one that includes **retinyl palmitate**, a synthetic form of vitamin A.¹¹

As this ingredient is common in cosmetics, sunscreen and some moisturizers, the cumulative exposure could lead to overexposure and increase your risk for some cancers, osteoporosis and vitamin A toxicity.¹²

Titanium dioxide is commonly added to dilute red lipstick and make it pink.¹³ Although chemically inert, these nanoparticles have significant negative effects on your health. Studies have demonstrated genotoxicity, oxidative DNA damage and inflammation in animal models,¹⁴ and also modulate gene expression in your brain.¹⁵

Some of the pigmentation in lipsticks also raise a red flag. D&C red 36 and D&C red 22 Aluminum Lake testing on animals has raised concerns as researchers linked them to nervous system damage.¹⁶

Mineral ingredients that have been reduced to nanoparticles also increases your risk to negative health effects from chemicals that otherwise may have been relatively harmless.¹⁷ The reduction in size allows the chemical greater access to your cells and DNA.¹⁸

Heavy Metals Increase Your Risk of Cancer

Unfortunately, the list of dangerous chemicals in your cosmetics doesn't end there. Many of the products you use on your skin also contain several different **heavy metals**.

In the report "Heavy Metal Hazard: The Health Risks of Hidden Heavy Metals in Face Makeup,"¹⁹ Canada-based Environmental Defence tested 49 different makeup items, including five foundations, four concealers, four powders, five blushes or bronzers, seven mascaras, two eye liners, 14 eye shadows and eight lipsticks or glosses. Their testing revealed serious heavy metal contamination in virtually all of the products:

- 96% contained lead
- 90% contained beryllium
- 61% contained thallium
- 51% contained cadmium
- 20% contained arsenic

Most of the products also contained an average of four of the eight metals tested (arsenic, cadmium, lead, mercury, nickel, beryllium, thallium and selenium).

What's worse, each product contained an average of two of the four metals of highest concern (arsenic, **cadmium**, **lead** and **mercury**). These metals carry a toxic designation in Canada, as they've been proven to trigger health issues.

Lead was found in 75% of the lip products, including 15 of the samples that had concentrations higher than the current FDA published standards for lead in candy consumed by children. Although lead levels in lipstick have received attention in the

past, levels of the trace minerals aluminum, cadmium, cobalt and manganese had higher relative intake indices than lead, according to this study.²⁰

Researchers recommended that these levels of trace metals should also be investigated as the number of times the lipsticks were used represented ingestion or absorption of 20% of the acceptable daily amount of aluminum, cadmium, chromium and manganese from drinking water.²¹

For example, cadmium is a known carcinogenic metal. Previous research has found cadmium in [breast cancer biopsies](#) and found it is used by cancer cells to multiply in lab trials.²² The metals are used to give lipstick their pigment.

Whales, Snails and Fish Scales

Not all ingredients in your cosmetics are hazardous; some of them are just plain strange. In this short video you'll discover information about an interesting excretion from sperm whales, called ambergris, used by perfume manufacturers to fix the perfume scent to your skin.²³ Whales excrete this particular lump of yellow waxy substance through vomiting or with their bowel movements.

The blob usually stays congealed in the ocean and is eventually deposited along the seashore. Produced in the digestive system to protect the lining from sharp objects the whale ingests, it sells for over \$10,000 a pound. High-end perfume houses use the substance to help their perfume stick to human skin and last longer.

Snails are another valuable source of chemicals for moisturizers and skin care products. They secrete glycolic acid and elastin to protect themselves from cuts and bacteria in their environment – compounds said to promote skin renewal and softer, smoother skin.²⁴ A spokesperson from Andes Nature, a company selling a popular snail cream in South America, said:²⁵

"It's a 100% pure and natural product that allows them to replace the typical chemical skin creams. Consumers must usually buy several creams separately to get the same benefits."

In 2006, farmers from Chile noticed their skin was visibly smoother after handling snails being bred for the food market. Snails have been used in skin care as far back as Hippocrates, who recorded using sour milk and crushed snails to soothe inflamed skin. Snails are not the only crushed animal parts in your cosmetics.

Although the ingredient guanine has been confused with bat guano, it is actually ground fish scales used in nail polish and mascara to produce shimmering or light diffusing color.²⁶

More Animal Contributions to Your Cosmetics

Natural ingredients in your cosmetics may also come from road kill. Tallow is a common fatty by-product derived from animal carcasses that manufacturers extract using animals garnered from laboratories, zoos, slaughterhouses, shelters and even roadkill.²⁷

Have you considered your cosmetics contain insects and bugs? While some are ground into your cosmetics accidentally, cochineal are bugs purposefully ground to make a powerful red dye used to pigment your red lipstick.²⁸ This dye has been used for centuries in food and cosmetics and Starbucks even admitted using it in their strawberry drinks.²⁹

Semen is high in protein and bull semen has become very popular in hair products designed for dry or damaged hair.³⁰ High end salons charge between \$90 and \$120 per treatment, which takes approximately 45 minutes.³¹

You may know that lanolin is found in moisturizers, skin protectants, machinery lubricants and metal protectors. New breastfeeding moms use lanolin cream on their nipples to protect and soothe the skin and it is equally effective to oil a baseball glove.

Lanolin is made from sheep's wool after the animal has been sheared and is also called wool grease or wool wax. It begins as a dark and greasy paste that goes through several refinement processes before it becomes the product you purchase from the store.³² Unfortunately, the wool used to produce lanolin typically does not come from sheep that are organically raised.

As a result, you may be using a product that is high in pesticides and genetically modified organisms (GMOs). This lanolin may also be ingested by your newborn when used as nipple cream. To remain compliant with FDA regulations, lanolin sold over the counter may contain up to 40 parts per million (ppm) of pesticides while the products reserved for hospital use may contain no more than 3 ppm.³³

Clean Up Your Beauty Regimen by Making Your Own Products

Considering the fact that everything you put on your skin and lips will enter your system, it would be wise to clean up your beauty regimen. Many products can be replaced with a short list of all-natural compounds. Olive oil and coconut oil, for example, can replace commercial moisturizers and some hair products. Pure essential oils can add scent to homemade products.

Making your own lipstick may be trickier than making your own creams, scrubs, lotions and shampoos, but DIY recipes are found online. Natural Living Ideas contains different homemade makeup guides for you to try, ranging from lipsticks, to blushes and eye liners.³⁴

Sources and References

- ¹ Statista, Revenue of the cosmetic and beauty industry in the United States from 2002 to 2022
- ² U.S. Food and Drug Administration, What does FDA Regulate?
- ³ U.S. Food and Drug Administration, Is It Really 'FDA Approved'?
- ^{4, 6} Lipsource, Did You Know These Lipstick Facts? (Archived)
- ^{5, 7} How Products are Made, Lipstick
- ⁸ WebMD, Anatomy of Lipstick
- ⁹ EWGs Skin Deep, Methylparaben
- ¹⁰ U.S. Food and Drug Administration, Parabens in Cosmetics
- ^{11, 16} Harpers Bazar, Secret Lipstick Ingredients Revealed
- ¹² EWGs Guide to Sunscreens, The Problem with Vitamin A
- ¹³ Daily Mail, What's Really in Your Lipstick?
- ¹⁴ Cancer Research, November 2009; 69(22)
- ¹⁵ Food and Chemical Toxicology, November 2015; 85: 96
- ¹⁷ PhysOrg, April 2007, Nanoparticles can Damage DNA, Increase Cancer Risk
- ¹⁸ Greenopedia, What's in That Lipstick (Archived)

- ¹⁹ Environmental Defence 2016, Report: Heavy Metal Hazard: The Health Risks of Hidden Heavy Metals in Face Makeup
- ²⁰ Environmental Health Perspectives, Concentrations and Potential Health Risks of Metals in Lip Products
- ²¹ Mother Jones, Which 20 Lipsticks Contain the Most Lead?
- ²² Breast Cancer Fund, Cadmium and Other Metals (Archived)
- ²³ National Geographic, September 1, 2012
- ^{24, 25} Today, Snailed It! Snail-Slime Face Cream Is Hot Beauty Trend
- ^{26, 27, 30} Oddee, 10 Disgusting Common Ingredients in Cosmetics
- ²⁸ Live Science, The Truth About Red Food Dye Made from Bugs
- ²⁹ Inhabitat, Starbucks Admits to It's Strawberry Drinks are Colored with Crushed Parasitic Beetles
- ³¹ Metro, New Hair Product Uses Bull Semen
- ³² Lanis Lanolin, From fleece to grease: The production of lanolin
- ³³ Mamavation, Are You Feeding Your Baby Pesticides?
- ³⁴ Natural Living Ideas, "How to Make Your Own Makeup: 14 Tutorials for All-Natural Cosmetics"