

Harmful Chemicals in Your Makeup: Part I

A survey conducted by the David Suzuki Foundation revealed that around 80% of makeup products used by Canadians contained at least one harmful industrial chemical (2020). In the past decade, research findings have been able to confirm the link between these chemicals and health conditions ranging from allergies to cancer. Unfortunately, despite existing knowledge of harmful chemicals, many industries continue to use them to manufacture their products (Roeder, 2014). This is especially dangerous for consumers who are often unaware of the ingredients present in their products.

The following article will present current concerns regarding toxins in cosmetics and list some of the most well-researched chemicals that consumers should dodge when picking products.

Why should consumers care about toxins in their beauty products?

Cosmetic products such as foundations, eyeshadow, and mascara are meant to be used directly on the skin of the face. The skin is a permeable organ that can easily absorb chemicals through diffusion (CDC, 2013), and different factors can increase the likelihood of absorption such as:

- High temperature from rubbing a product into the skin (friction);
- Damaged, ruptured, and/or dry skin;
- Large quantities of product (or high concentrations);
- Long-wear/exposure time.

Absorption also varies depending on the region of the body. For example, the skin around the eyes or on the lips is much thinner than the skin on the neck, for instance, and this creates a quick passageway for toxins to find themselves into the bloodstream.

Why do toxins continue to be used in cosmetics?

There are three main reasons why harmful chemicals continue to be used in the beauty industry (Roeder, 2014):



1. **Cost:** Toxins are cheaper than their safer and/or organic alternatives.
2. **Lack of Testing:** Ethical testing can be time-consuming, costly to fund, and tricky to operate.
3. **Limited Regulations:** Depending on the country of origin, there can be little to no laws asking agencies to regulate chemicals in the production of cosmetics.

In Canada, laws require all cosmetic manufacturers to register their products with Health Canada to have them evaluated for their ingredient list (Government of Canada, 2020). Health Canada regulates cosmetics under the *Cosmetics Regulations Food and Drug Act* and maintains a list called "Cosmetic Ingredient Hotlist". Chemicals on that list contravene the Food and Drug Act, but this does not necessarily make them eligible for a ban; rather, companies may still be free to use them under certain conditions.

Once again, this leaves it all in the hands of the consumer to know what is in their product so that they can make an informed decision.

Toxins You Should Avoid

Toxin	Health Concerns	Use*
BHA (butylated hydroxyanisole)	BHA (butylated hydroxyanisole) has been found to act like carcinogens , skin irritants , and hormone disruptors .	✓
BHT (butylated hydroxytoluene)	BHT (butylated hydroxytoluene) has been found to have negative effects on the organ systems in animals. It has also been found to play a role in tumor development and reproductive problems.	✓
Fragrances and/or Perfume Ingredients	Fragrances and/or perfumes can cause irritation of the skin and airways . Effects can include headaches , allergic reactions , and asthma symptoms amongst other lesser studied consequences. Fragrances/perfumes can be especially problematic for individuals with multiple chemical sensitivities (MCS) .	✓
DEA (Diethanolamine)	DEA has been found to cause skin and eye irritation . Other studies have found DEA to have carcinogenic effects on the liver and the thyroid gland.	✗
Formaldehyde	Formaldehyde is classified as a human carcinogen that often enters the body through inhalation or absorption through the skin. Effects can include skin irritation and allergic reactions .	✓
Parabens	Parabens are endocrine disruptors that mimic estrogen and affect the male and female reproductive systems. Studies have also found parabens in breast cancer tissues, demonstrating a possible carcinogenic effect .	✓
Siloxanes	Siloxanes are endocrine disruptors that can interfere with reproductive function and fertility in humans. Animal studies found that siloxanes caused the growth of uterine tumors and impairment of the immune and nervous system functions .	✓
Polyethylene Glycol (PEG) Compounds	PEG compounds are often contaminated with 1,4-dioxane, which is a known human carcinogen . If not purified properly, PEG can be dangerous.	✓
Lead and other heavy metals	Lead and heavy metals can disrupt the functioning of many organs like the liver , kidneys , lungs , and brain .	✗
Phthalates	Phthalates are endocrine disruptors that can impair reproductive function and development. Phthalates can also cause liver and kidney failure in young children.	✓
Coal Tar Dyes	Coal tar dyes are known carcinogens that can also be contaminated with heavy metals, which presents a toxicity risk for the brain .	✓
Petrolatum	Petrolatum can cause skin irritation , allergies , and is labeled as a carcinogen . Petrolatum can be concerning if it is not purified properly as its risk of being contaminated with other toxins is high.	✓
Sodium Laureth Sulfate (SLS)	Sodium laureth sulfate can be contaminated with carcinogens like ethylene dioxide and 1,4-dioxane. On its own, this chemical can cause skin and eye irritation .	✓
Triclosan	Triclosan is an endocrine disruptor , but can also cause eye and skin irritation . At high exposures, studies show that triclosan can lead to the growth of antibiotic-resistant bacteria .	✓

This table presents the most well-researched chemicals found in cosmetics. This information is based on the evidence pulled from the Health Canada Cosmetics Hotlist and the David Suzuki's Dirty Dozen Cosmetic Chemicals List.

*The column "Use" identifies whether or not this chemical is in use in beauty products made in Canada.

Why are these chemicals still in use if they are harmful?

Many factors can influence the decision of banning or allowing the use of a chemical. Typically, the use of a harmful chemical is permitted when its concentration or quantity is low enough. For example, triclosan is allowed to be used in Canadian cosmetic products as long its concentration does not exceed 0.30% (Health Canada, 2020). Similarly, formaldehyde is also tolerated for usage as long as concentrations remain below 0.02%.

The issue with the use of low dose chemicals is that their effects are widely unknown. As well, the potential risks increase when considering the fact that multiple low dose chemicals are often mixed together. At this point, consumers become exposed to multiple harmful chemicals whose exposures can accumulate to reach doses high enough to cause negative health effects.

Then, the lack of research can also affect the decision to ban a chemical. Thus, it is important for consumers not to mistake the absence of literature as safety of use.

Cautious Consumption of Cosmetics

Over time, consumers will encounter many sources stating whether or not a chemical is safe or unsafe. Unfortunately, it is not always easy to interpret the information that is presented. However, there are certain steps that one can follow to become a cautious consumer:

1. **Acknowledge and take all presented information with a grain of salt.** Many sources can be misleading. As a guideline, credible sources that you can trust often come from scientific journals, experts in relevant fields (e.g., cosmetic scientists), governmental websites, educational websites, and academic databases.
2. **Make an informed personal choice.** Ask yourself what you are comfortable with and analyze your risks. For example, you are aware that many harmful chemicals are still present in cosmetics, so should you personally worry about this? Do you have health conditions that put you at risk? Are you worried about future outcomes? And so forth...

Part II of this article will discuss cautious consumerism in detail and provide guidance on how to shop for safer beauty products.

In the meantime, please check out <https://laviyecolo.ca/cosmetics/> for more information on this topic.



References

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