

Right to Know: Exposing toxic fragrance chemicals in beauty, personal care and cleaning products.

FAQs

1. Why did BCPP do this testing?

We undertook this testing to gather information about the chemicals in personal care, beauty and cleaning products that does not appear on product labels. The lack of federally mandated cleaning product ingredient disclosure and fragrance ingredient disclosure in beauty and personal care products has meant that we have not been able to capture a full picture of the chemicals of concern in these products. We also wanted to gain a more complete understanding of the chemicals linked to chronic health issues, like cancer, hormone disruption and reproductive harm in cleaning, beauty and personal care products than the labels alone could provide.

2. What ingredients are required on cleaning products labels?

There are two federal laws that require very specific ingredients to be listed on the label of consumer cleaning products, which usually includes only one or two of the often dozens of chemicals contained in an individual product:

(1) The Federal Hazardous Substances Act requires only ingredients that meet the high bar for a “highly toxic” or “toxic” chemical must be disclosed. While some chronic health endpoints are included, specifically cancer, birth defects or neurotoxicity, the threshold for disclosure is high. Most chemical disclosure requirements are related to acute toxicity, such as chemicals that are poisonous, corrosive or strong irritants.

(2) The Federal Insecticide, Fungicide and Rodenticide Act requires the “active” ingredients in disinfectants to be listed on the label along with the percent concentration. However, the law does not require other product ingredients, referred to as “inactive” ingredients, to be disclosed. The misleading term “inactive” may refer to many chemicals that are biologically active (although not a pesticide) and potentially harmful. Yet, consumers do not have access to this information.

Even with these two federal laws on the books, the vast majority of cleaning product ingredients are not required to be labeled on products or product websites.

3. What ingredients are required on personal care product labels?

The Federal Fair Packaging and Labeling Act requires that the ingredients in beauty and personal care products appear on the product label, with the exception of fragrance, flavoring and colorants. Most significantly, companies can list “fragrance” as an ingredient without listing the individual chemicals that make up the fragrance. Fragrances can be made up of dozens – even hundreds - of chemicals that are omitted from the label. Additionally, some listed ingredients may contain contaminants or unintended ingredients that would not be on the label.

4. Why don't fragrance chemicals show up on product labels?

The law does not require companies to list the constituent ingredients in the fragrances they use. In addition, the fragrance industry and the cosmetics industry lobby hard against fragrance ingredient disclosure, arguing that fragrance ingredients should be protected as trade secrets or confidential business information.

5. Do cosmetic companies know what's in the fragrance they buy from fragrance houses?

Often, this lack of disclosure extends to the product manufacturers. Sometimes, the companies creating and selling the products aren't fully informed about the chemicals used in the fragrances they purchase for use in their products from fragrance suppliers.

6. Why are you concerned about fragrance, in particular?

One out of every four fragrance ingredients BCPP detected in the beauty, personal care and cleaning products tested are linked to cancer, birth defects, respiratory harm, neurotoxicity, endocrine disruption or aquatic toxicity. And, shockingly, some of the products tested had an even higher percentage of toxic fragrance chemicals. In fact, $\frac{3}{4}$ of the chemicals linked to chronic health effects in the products we tested were fragrance chemicals.

7. How did you do the testing?

We hired two independent third-party testing laboratories. One assessed volatile organic compounds (VOCs), and the other conducted two-dimensional gas chromatography (GCxGC) Time-of-Flight analysis.

8. What is time-of-flight (TOF)?

Time-of-Flight (TOF) analysis detects the presence of multiple chemicals in a single test by precisely measuring molecular mass. Each detected molecular mass is then matched to a library of chemical formulae and masses to identify a specific chemical's identity.

9. Do the lack of results from the VOC testing mean there are no VOCs in the products tested?

The lack of detectable levels of volatile organic compounds (VOCs) does not mean that VOCs are not present in small amounts. In fact, we found some VOCs via our Time-of-Flight testing, even though they weren't detected in the VOC tests.

Personal care products are complex products with many ingredients. The laboratory analysis required most products' dilution to 1/1,000 of their original concentration for testing. This reduced the sensitivity of the tests, which meant that the lab was able to see compounds with levels in the parts per million range, but not in the parts per trillion range. In other words, this test would find only chemicals showing up at fairly high concentrations. This means that some VOCs could be present in a product in very small amounts, but our test results were not able to show this.

10. How did you identify chemicals in the product's fragrance?

We used a targeted strategy for the 25 personal care products analyzed in order to identify *unlabeled fragrance ingredients*. Because the ingredients in beauty and personal care products are legally required to appear on the product label, except for those used in "fragrance," we first identified the chemicals that were detected through the TOF analysis that also appeared on the IFRA [ingredient transparency list](#). We then identified the health hazards associated with these fragrance ingredients, and then attempted to match the labeled ingredients to the non-fragrance ingredients found in the Time-of-Flight testing. An ingredient that appeared on the IFRA ingredient transparency list, but did not appear on the label, was deemed a "fragrance chemical." We also identified common contaminants found via the TOF tests.

11. What were some of your most notable findings? What were the most toxic products?

One of our biggest findings was that the vast majority of chemicals with chronic health concerns we found were those used in fragrance.

The product with the highest number of chemicals linked to chronic health effects was a shampoo in a Just for Me hair relaxing kit marketed to African-American girls. We found 4 carcinogens, 19 potential EDC's and 6 chemicals linked to reproductive and developmental toxicity.

In total, 99 of the 338 fragrance chemicals BCPP detected in personal care and beauty products are linked to adverse health effects health. $\frac{3}{4}$ of the total number of chemicals of concern we identified in the products tested were fragrance chemicals.

12. Why did your testing find so many more chemicals in personal care products than the type and number of ingredients that appear on products labels?

We found 46 to 229 unique chemicals per product. Many ingredients may be comprised of multiple chemicals, so this does not mean there were hundreds of intentionally added ingredients in each product analyzed. Many botanical and synthetic ingredients are made up of multiple constituent chemicals.

13. What were the concentrations of the chemicals found?

Time-of-flight analysis assesses the likely presence of suspect chemicals based upon their molecular mass. It cannot accurately quantify the concentrations of the chemicals; targeted testing is required to verify the results and assess concentration.

14. Will all of the chemicals found in your testing actually show up in products currently on store shelves?

We don't know the answer to this question. The chemicals we found may or may not show up in products currently on the shelves. We gathered the products tested in early 2017, and we know that companies frequently make minor changes in formulations. In addition, the presence of some chemicals may vary from batch to batch. For instance, some chemicals could appear due to contamination. Finally, since many ingredients have multiple constituent chemicals, some of these can vary in minor ways from batch to batch.

15. What are the health impacts of these chemicals? Did you find any chemicals linked to breast cancer? Are there environmental concerns as well?

We found chemicals linked to cancer, endocrine disruption, reproductive and developmental toxicity, neurotoxicity, asthma, and skin irritation. In addition, many of the chemicals we detected are linked to chronic aquatic toxicity, a serious concern for the health of aquatic life.

As a breast cancer prevention organization, we are especially concerned about chemicals linked to breast cancer. We found several examples of these, including benzene and 1,4-dioxane, which have been linked to mammary tumors in laboratory studies. We also

found a number of endocrine-disrupting compounds with links to breast cancer: oxybenzone, propylparaben, and two phthalates (DEHP and DEP).

16. Who is especially vulnerable to the chemicals in the products you tested?

Along with our purchasing partners, we purposely selected products marketed to kids and women of color, along with cleaning products popular among domestic workers, because these are 3 populations who are particularly vulnerable to unsafe chemical exposures in these products.

We found a number of chemicals linked to adverse health effects in the products marketed to these populations. In fact, the product with the highest number of chemicals linked to chronic health effects was a shampoo in a Just for Me hair relaxing kit for African-American girls. We found 4 carcinogens, 19 potential EDC's and 6 chemicals linked to reproductive and developmental toxicity.

We also found a number of concerning chemicals in cleaning products, including carcinogens 1,4-dioxane, benzene, benzyl chloride and beta-myrcene, and chemicals linked to reproductive and developmental toxicity such as 2-butoxyethanol, DEP, and toluene. This raises significant concerns since those in cleaning professions may use these products for hours on end each day.

17. What concerns with personal care and cleaning products do you have based on your results?

Our biggest concern is that so many chemicals with chronic health hazards are in these products, and most of them are not even on product labels. This means that consumers have no way to avoid these chemicals of concern. The lack of regulation of the fragrance industry is also a big problem illustrated by our report findings given $\frac{3}{4}$ of the total number of chemicals of concern we identified in the products tested were fragrance chemicals.

18. Which products had the highest number of different toxic chemicals?

- **Just for Me Shampoo:** A children's shampoo, from a hair-relaxing kit marketed to kids of color by Strength of Nature.
- **JLo Glow Perfume:** A fine fragrance made by Coty and endorsed by music, television and film icon Jennifer Lopez.
- **Kaboom with OxiClean Shower Tub & Tile Cleaner:** Marketed as a "great cleaner that is safe and friendly to use," made by Church & Dwight Co.

- **Olay Luminous Tone Body Lotion:** Made by Procter & Gamble and marketed for its anti-aging qualities.
- **Axe Phoenix Body Spray:** A body spray made by Unilever and marketed to young men through an overtly sexual ad campaign.
- **Marc Jacobs Daisy Perfume:** Another Coty fragrance that carries the famous designer's name and uses beatific, radiant young girls in its marketing campaigns.
- **Taylor Swift Wonderstruck Perfume:** A Revlon fine fragrance endorsed by the beloved pop country singer Taylor Swift.
- **Organix (OGX) Shampoo:** A Johnson & Johnson product marketed as part of a "green/sustainable" line of products to young women.
- **Formulation 64-RP:** An industrial cleaner/disinfectant used by custodians, firefighters and others.
- **White Linen Perfume:** Created by Estée Lauder in 1978, marketed as "a beautiful perfume" for women young and old.

19. Did you find a large number of toxic fragrance chemicals in the products you tested?

We did. We found a total of 338 fragrance chemicals used in the 25 personal care products we tested.

99 of those chemicals had links to at least one health concern, and several were linked to multiple health effects.

In fact, the vast majority of the chemicals we found with health effects were fragrance chemicals. (We defined these as chemicals that were not on the products labels AND that were listed on the IFRA inventory of fragrance chemicals). Fragrance chemicals made $\frac{3}{4}$ of the chemicals we detected linked to chronic health effects.

20. How is it possible that you found so many chemicals linked to chronic health effects – doesn't the government regulate the safety of these products? Who regulates the safety of fragrance chemicals?

Most consumers believe that the FDA regulates the safety of cosmetics, the same way it does food and drugs. In reality, beauty and personal care products (which are encompassed under the legal definition of "cosmetics"), are one of the least regulated industries. There are just 2 pages of federal law regulating the \$84 billion cosmetic industry. As a result, companies can use virtually any raw material or chemical – including chemicals with known links to cancer, birth defects, reproductive harm, neurotoxicity and endocrine disruption – without FDA pre-market safety testing or review. To provide context, over 10,000 chemicals are used to formulate cosmetics, yet only 11 are banned or restricted by the FDA.

21. How did you choose the products for testing?

We worked with partners from colleague organizations to select and purchase products that were of concern to impacted communities. All of the cleaning products were purchased by colleagues in California, while the personal care products were purchased by 25 partners in 16 states and one Canadian province. We gathered information from these partners about the products that concerned them due to popularity of the products and health concerns that arose from using them.

22. What can the 32 products you tested tell us about products in general (i.e. products you didn't test?)

. Because we did not test a representative sample of products, we can't make assumptions about the specific chemicals found in products we didn't test.

That said, we are concerned that many chemicals with hazardous health effects don't show up on product labels, either because ingredients are not fully labeled in cleaning products or because fragrance ingredients aren't listed on the labels of beauty and personal care products. We suspect this would be true for many other products.

Our testing also points to some of the chemicals linked to health concerns that may be most common in products. We think this provides valuable clues that can help guide companies in reformulation, inform better policies, and provide information for further product testing. Some of the chemicals found most frequently are:

- 1,4-dioxane, a carcinogen and common contaminant of ethoxylated ingredients found in 2/7 cleaning products and 1/25 personal care products
- Beta-myrcene, a carcinogen and fragrance ingredient found in 3/7 cleaning products and 19/25 personal care products
- Benzyl chloride, a carcinogen and endocrine disrupting compound (EDC) found in 3/7 cleaning products and 7/25 personal care products
- Diethyl phthalate (DEP), an EDC found in 5/7 cleaning products and 7/25 personal care products
- DEHP, a phthalate banned by the European Union in 2004, was found in one personal care product — Summer's Eve Freshening Spray
- Toluene, a reproductive toxicant found in 4/7 cleaning products and 2/25 personal care products
- Benzophenone, a carcinogen, found in 4/25 personal care products and oxybenzone found in 2/25 personal care products
- Propylene glycol, an EDC and reproductive toxicant found in 11/25 personal care products

- Benzyl salicylate an EDC and fragrance allergen found in 11/25 personal care products
- Benzaldehyde, an EDC found in 11/25 personal care products
- Butylated Hydroxytoluene (BHT), an EDC found in 13/25 personal care products

23. How did you determine if a chemical was hazardous?

We referenced a number of authoritative bodies to identify chronic health hazards. These are listed in Appendix 3 of the report.

24. What companies offer safer alternatives? Did you test any of their products?

For this particular report, we did not test products from companies that offer safer products, largely because we were trying to test products of high concern to impacted communities.

Listing all ingredients, including those used in fragrance, gives consumers more information to choose the safest personal care, beauty and cleaning products available.

25. What follow-up tests would you do if you could?

Since TOF testing provides a list of suspect chemicals without providing concentrations of those chemicals, we'd love to test for some of chemicals with the most egregious health concerns as well as those chemicals that we found in many of the products tested.

It would also be interesting to test multiple samples of the same product in order to find out if the same chemicals are found at the same levels across the same item but different batches or lot numbers. Our past testing suggests that some contaminants vary from item to item.

And of course, we'd simply love to test a much larger sample of products to get a better sense of the concerns across different product types, market shares and price points.

26. What can I do to avoid these chemicals?

Choose cleaning products from companies that fully disclose their ingredients, and personal care products that fully label the fragrance ingredients in their products. And, let your favorite companies know that you want them to label their ingredients, if they don't already.

27. What can companies do to reduce the presence of these chemicals in their products?

We encourage companies to work with their suppliers of raw materials, fragrance blends and finished products to get safety data, full ingredient lists and the right to fully disclose all ingredients – including fragrance chemicals – on product labels.

28. What resources can companies utilize to make safer products?

We encourage companies to develop a restricted substances list of chemicals they will not use to formulate – and/or provide a scent – to their products, and to work with raw material and fragrance suppliers to phase out the chemicals on that list. We've developed a Red List of Chemicals of Concern in cleaning products, personal care products and fragrance to help with this process. Learn more:

<https://www.bcpp.org/resource/red-list>

Other resources include EPA's Safer Choice Program to label products that contain safe or safest in class chemicals; GC3 which helps develop safer alternatives through green chemistry principles; and GreenScreen, a third-party certification tool to identify chemical constituents of high concern and provide information on safer alternatives.

29. What can policymakers do to make products safer?

This report calls on members of congress to adopt legislation that requires full fragrance disclosure and establishes stricter regulation of the fragrance industry.

- In September, Rep. Jan Schakowsky introduced the Safe Cosmetics and Personal Care Products Act of 2018. In the crowded federal cosmetic safety legislative landscape, this bill is the only one calling for full fragrance ingredient disclosure to consumers, manufacturers and to the FDA. The bill also requires supply chain transparency and industry data sharing to address the lack of safety data available for fragrance ingredients.
- Our elected officials can swiftly reduce the number of toxic chemicals consumers and workers are exposed to by requiring full disclosure of fragrance chemicals of the entirely unregulated fragrance industry.

30. Should policymakers require more transparency of fragrance ingredients?

This is a resounding yes! Our results found the vast majority of chemicals of health concern were ingredients used in fragrance.

Over the Campaign for Safe Cosmetics 15-year history, we have noticed that fewer chemicals with serious health concerns are listed on the product labels of the multinational cosmetic companies. We credit this to the increasing consumer demand for safer products and see this as a good sign that the world's biggest manufacturers are slowly reformulating and improving the safety of their products. However, the lack of transparency regarding the identity - and safety - of fragrance ingredients means that many bad acting chemicals remain hidden in products.