



ANTI-AGING SECRETS EXPOSED
Chemical Linked to Breast Cancer in Skin Care

October 2015



Anti-Aging Secrets Exposed:

Chemical Linked to Breast Cancer in Skin Care

Table of Contents

| | |
|------------------------------------|----|
| Introduction | 4 |
| Summary | 5 |
| The Problem | 7 |
| Chemicals of Concern | 8 |
| Methods..... | 10 |
| Results | 12 |
| What It Means..... | 14 |
| Solutions..... | 15 |
| What Can You Do?..... | 21 |
| Appendix: Limits of Detection..... | 22 |
| References..... | 23 |
| Tips for Safer Cosmetics | 24 |

Acknowledgments

This report was written by Sharima Rasanayagam, Ph.D., Janet Nudelman, MA, Rebecca Wolfson, MA, and Connie Engel, Ph.D. of the Breast Cancer Fund/Campaign for Safe Cosmetics.

Our interns, Linda Mei and Monica Raiss, contributed writing and logistical support.

Anne Hulick of Clean Water Action Connecticut and Kim LaBo of Clean Water Action Minnesota purchased products for testing.

We are grateful for the generous contributions from our funders: As You Sow, The Clif Bar Family Foundation, The John Merck Fund, The Lisa and Douglas Goldman Fund, The Rose Foundation for Communities and the Environment, and The Seventh Generation Foundation.

ANTI-AGING SECRETS EXPOSED: CHEMICAL LINKED TO BREAST CANCER FOUND IN SKIN CARE

Introduction

Would you put Teflon on your face? Did you know some anti-aging creams and face powders use the same chemical that creates a nonstick surface on cookware to create a smooth finish to makeups and lotions?

That's a recipe for concern, because of a potential contaminant of PTFE called perfluorooctonic acid (PFOA). PFOA is a toxic chemical linked to cancer, endocrine disruption and reproductive harm. PTFE is the same chemical known by the trade name Teflon.

The Campaign for Safe Cosmetics, a project of the Breast Cancer Fund, sent products created by the top multinational cosmetic companies to an independent laboratory and had them tested for toxic chemicals linked to breast cancer. The results were shocking: Three anti-aging creams from the beloved brands Garnier and CoverGirl contained PFOA. The very demographic most affected by breast cancer is the marketing target for anti-aging products that contain chemicals linked to the disease.

How do chemicals linked to cancer end up in our beauty products?

The answer is simple. No one is minding the store when it comes to the safety of cosmetics or personal care products. This report explains more about the problem of PFOA contamination in cosmetics, and what you can do about it.

Summary

In 2014, we at the Breast Cancer Fund's Campaign for Safe Cosmetics began reviewing product labels of major multinational cosmetics companies to research the use of chemicals linked to cancer. In doing so, we stumbled upon two surprising ingredients in some personal care products and anti-aging creams:

Polytetrafluoroethylene (PTFE) ***Polyacrylamide***

We knew that both PTFE and polyacrylamide could be contaminated with chemicals that have been linked to cancer. Staff at the Breast Cancer Fund in California and Clean Water Action in Minnesota and Connecticut purchased cosmetic and personal care products that contained one or both of these ingredients, and we sent them to an independent lab for testing. We tested products containing PTFE for a contaminant called perfluorooctanoic acid (PFOA), which is linked to breast cancer, endocrine disruption and other adverse health effects. We also tested products containing polyacrylamide for the chemical acrylamide, also linked to breast cancer. Prior product testing had revealed detectable levels of acrylamide in products that contained polyacrylamide, but our tests did not. We were, however, surprised to find PFOA in 6 of the 17 PTFE-containing products tested. As far as we know, it was the first time personal care products containing PTFE had ever been tested for PFOA.

We found that three anti-aging products contained the dangerous chemical PFOA:

Garnier Ultra-Lift Transformer Anti-age Skin Corrector
Garnier Ultra-Lift Anti-Wrinkle Firming Moisturizer
Cover Girl Advanced Radiance with Olay, Age Defying Pressed Powder

The good news? There are steps you can take to avoid this dangerous chemical in your own life, and to ensure that companies are prohibited from using them in the first place:

Avoid PFOA by shopping with prowess.

To steer clear of the potential contaminant PFOA, you can avoid products with these ingredients on their labels: Polytetrafluoroethylene (PTFE), Polyperfluoromethylisopropyl Ether, DEA-C8-18 Perfluoroalkylethyl Phosphate, Teflon. For more, see www.safecosmetics.org/get-the-facts/chemicals-of-concern/polytetrafluoroethylene.

Help pass smarter, health-protective laws.

We can't just shop our way out of this problem. In order for safer products to be widely available and affordable for everyone, we must pass laws that shift the entire industry to nontoxic ingredients and safer production. Ask Congress to give the FDA the authority and resources it needs to ensure the safety of cosmetics and require full disclosure of ingredients so consumers can make informed choices. Take action at www.safecosmetics.org/Action-safe-cosmetics.

Demand that cosmetics companies fully disclose ingredients, and support the ones that do!

Tell cosmetics companies that you want them to fully disclose the ingredients in the products they make—including contaminants such as PFOA and the chemicals that are hiding under the term "fragrance." Find out how at www.safecosmetics.org/take-action/campaigns.

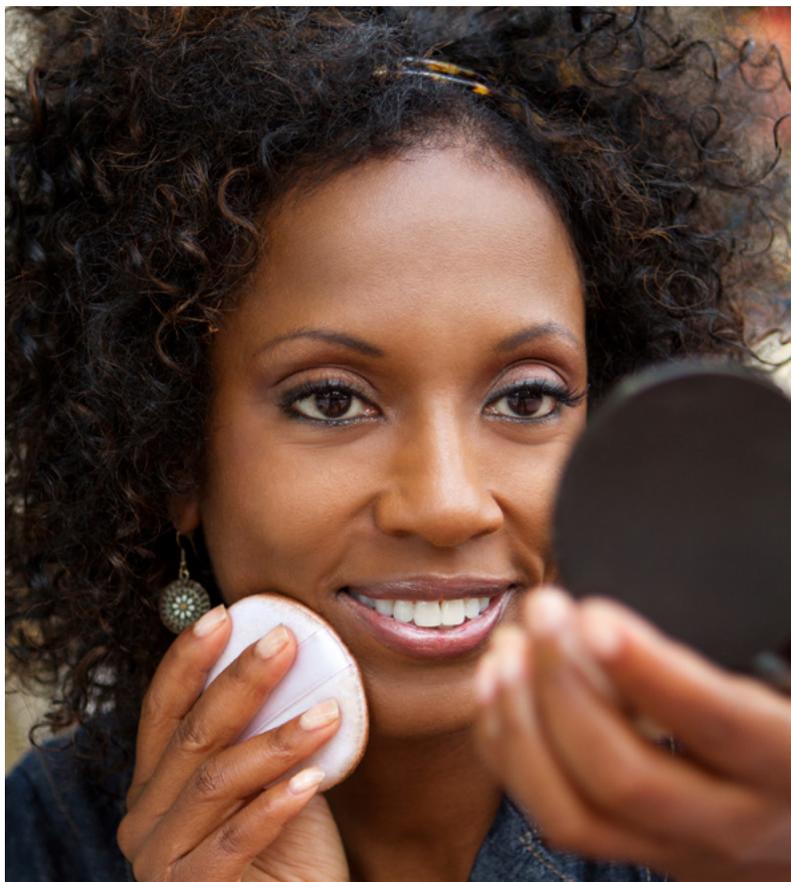
The Problem

Americans use an astonishing array of cosmetics and personal care products every day—from eyeliner to shampoo, perfume to body lotion, baby powder to aftershave. Most people assume the government, in this case the Food and Drug Administration (FDA), regulates cosmetics for safety the same way it does for food and drugs. In reality, cosmetics are one of the least regulated consumer products on the market today.

Due to gaping holes in federal law, it is perfectly legal for cosmetics companies to use unlimited amounts of virtually any ingredient, including chemicals linked to cancer, reproductive and developmental harm, hormone disruption and other adverse health impacts, with no FDA pre-market testing or review. As a result, cosmetics sold in the United States contain ingredients, contaminants and impurities with known health hazards, including lead, phthalates, hydroquinone, coal tar, formaldehyde, 1,4-dioxane, and PFOA.

Taken alone, chemicals in any one consumer product may not cause harm. Unfortunately, people are repeatedly exposed to industrial chemicals from many different sources, including cosmetics, on a daily basis. The average American woman uses 12 personal care products a day, resulting in exposure to as many as 126 unique chemicals from personal care products alone.

The combined exposure from personal care products adds to our daily exposure to hazardous chemicals from air, water, food and other consumer products. These chemicals end up in our bodies, our breast milk and our children; they contaminate drinking water and wildlife; and they build up in the food chain.



No one is minding the store when it comes to the safety of cosmetics or personal care products.

Chemicals of Concern

Both acrylamide and PFOA are potential contaminants in personal care products, and both are associated with adverse health effects.

Acrylamide

Polyacrylamide is often used in personal care products for its lubricating and thickening properties. Traces of acrylamide, the monomeric unit that makes up polyacrylamide, have been found in products containing polyacrylamide.¹ Though polyacrylamide is not considered toxic, there are a number of health concerns with acrylamide, even in trace amounts. It is a recognized carcinogen, including for breast cancer, and a reproductive and developmental toxin. A small, water-soluble molecule, acrylamide is readily absorbed into the body and rapidly distributed to all tissues through the bloodstream;² however, it has been found in lotions, powders and creams.^{3,4,5} Daily exposure to acrylamide through cosmetics may exceed the amount that would result from smoking a pack of cigarettes a day.⁶

The National Toxicology Program lists acrylamide as reasonably anticipated to be a human carcinogen.⁷ A long-term study on rats confirmed that acrylamide exposure led to significantly increased numbers of benign and malignant tumors in the mammary glands of females and the testes of males, so no one is exempt from its harmful effects.⁸ Numerous rodent studies have associated acrylamide exposure to multiple cancers; human studies, however, are still limited and inconclusive.

PFOA

Perfluorooctanoic acid (PFOA, also known as C-8) is a probable contaminant of Polytetrafluoroethylene (PTFE), a common ingredient of anti-aging products for the sleek and smooth finish it creates. PTFE is also known as Teflon, which is used in nonstick cookware. PFOA is a carcinogen, endocrine disruptor and reproductive toxin.⁹ PFOA is ubiquitous in wildlife and can be detected in almost every U.S. adult.¹⁰ PFOA persists in the human body for years: Its half-life (the time it takes for half of the body burden to leave the body) is 2.5 to 3.5 years.^{11,12}

PFOA and related compounds are extremely stable synthetic chemicals that are not biodegradable and therefore persist in the environment indefinitely.¹³ PFOA does not naturally biodegrade in the environment, and it has been found in remote Arctic regions despite no known production or use in those areas.¹⁴

PFOA exposure can start in the womb; a Baltimore study of umbilical cord samples revealed that all of the newborn subjects had already been exposed to PFOA.¹⁵ A study on neonatal exposure of mice to PFOA found abnormalities in mammary tissue formation as the pups matured.¹⁶ Adolescents in Ohio with increased PFOA exposure experienced delayed onset of menstruation and breast development, elements that could affect later-life health issues, including breast cancer.¹⁷ As an endocrine disruptor, PFOA present even in small quantities could lead to adverse outcomes. In the Inuit population of Greenland, researchers found that women afflicted with breast cancer had approximately 1.5 times higher bioaccumulation of PFOA than their cancer-free peers.¹⁸

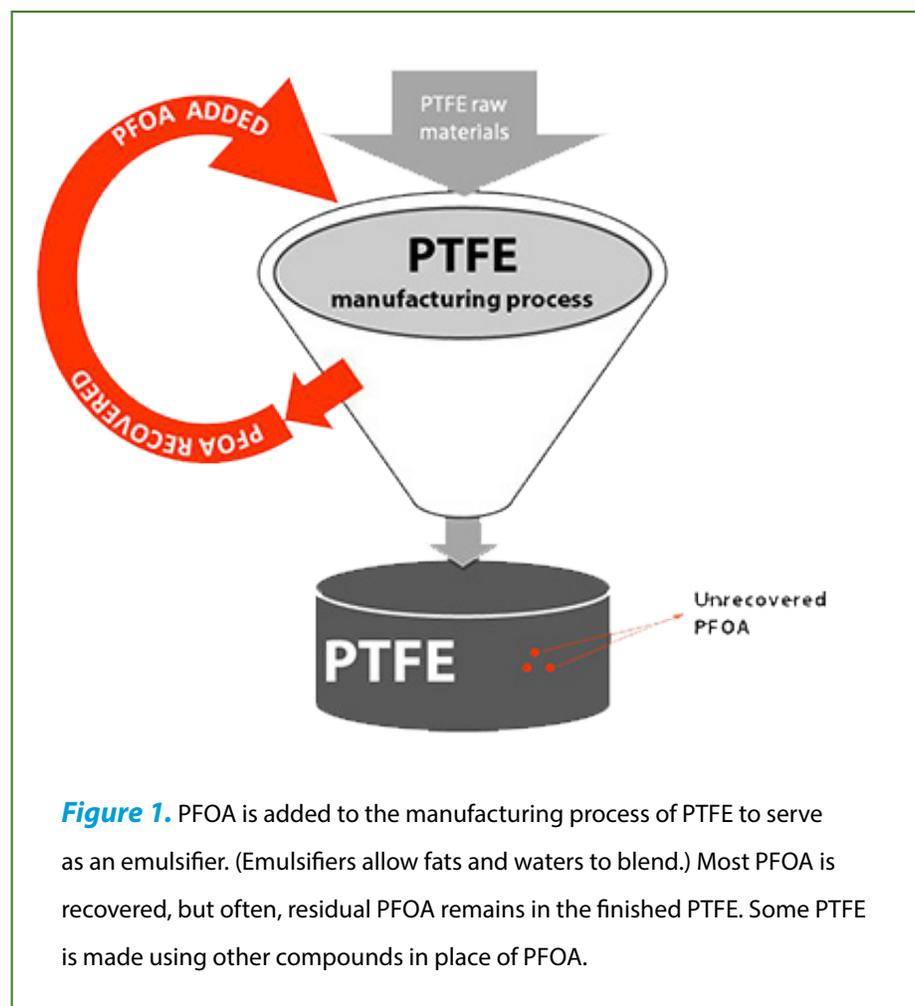


Figure 1. PFOA is added to the manufacturing process of PTFE to serve as an emulsifier. (Emulsifiers allow fats and waters to blend.) Most PFOA is recovered, but often, residual PFOA remains in the finished PTFE. Some PTFE is made using other compounds in place of PFOA.

Methods

In summer 2015, we scanned retailer shelves for personal care products with the ingredients PTFE or polyacrylamide on the label. We intended to identify 10 products total with these ingredients for a pilot test of contamination with PFOA (in PTFE-containing products) or acrylamide (in polyacrylamide-containing products).

We reviewed products at CVS, Walgreens and Target, and we focused our search on product categories that we suspected would use PTFE or polyacrylamide based upon extensive prior label reading.

We identified 9 products for team members in different parts of the country to purchase for testing, and 3 very similar alternative products, in case a product on the primary list could not be found. One primary-list product and one alternative product included both PTFE and polyacrylamide.

Table 1: Primary products for testing

| <i>Product</i> | <i>Ingredients</i> | <i>Parent Company</i> |
|--|------------------------|-----------------------|
| L'Oréal Paris Youth Code, Dark Spot Corrector Day Cream | Polyacrylamide | L'Oréal |
| Cover Girl Bombshell Shine Shadow | Polyacrylamide | Procter & Gamble |
| Revlon Photoready BB Cream | Polyacrylamide | Revlon |
| Revlon Age-defying CC Cream Color Corrector | Polyacrylamide | Revlon |
| Maybelline Define-A-Lash Lengthening Washable Mascara | PTFE | L'Oréal |
| Olay Total Effects, 7 in One Anti-aging Moisturizer with Sunscreen | PTFE | Procter & Gamble |
| Cover Girl Advanced Radiance with Olay, Age Defying Pressed Powder | PTFE | Procter & Gamble |
| Gillette Mach 3 Sensitive Shave Gel | PTFE | Procter & Gamble |
| Garnier Ultra-Lift Transformer Anti-age Skin Corrector | PTFE Polyacrylamide | L'Oréal |

Table 2: Alternatives products used as substitutes

| | | |
|---|------------------------|------------------|
| L'Oréal Paris Youth Code, Dark Spot Corrector Serum | Polyacrylamide | L'Oréal |
| Cover Girl Tru Blend Mineral Pressed Powder | PTFE | Procter & Gamble |
| Garnier Ultra-Lift Anti-Wrinkle Firming Moisturizer | PTFE Polyacrylamide | L'Oréal |

Staff in California, Connecticut and Minnesota each purchased 9 items to contribute to the product testing. In most cases, identical products were purchased in each location, which would allow us to assess the consistency of contamination over three samples. In some cases the substitute products were purchased, with the end result that some specific products were tested with only one or two samples.

We sent the unopened products to Weck Laboratories in City of Industry, California, one of the few independent laboratories that offered testing for both acrylamide and perfluorinated compounds. Products containing PTFE were tested for PFOA*; those containing polyacrylamide were tested for acrylamide. The testing was performed by liquid chromatography/mass spectrometry (LC/MS).

* Products were tested for both PFOA and PFOS (perfluorooctane sulfonate). We did not expect to detect PFOS in the products, since it is not used to produce PTFE, and no PFOS was detected in any of the samples.

Results

Acrylamide

Despite the identification of notable acrylamide residues in 2005 product tests by the Cosmetic Ingredient Review, our tests found no evidence of acrylamide contamination. In some cases, the limits of detection were fairly high (above 100 parts per billion), so it is possible some very low residues exist.

Perfluorooctanoic acid (PFOA)

Our review of the literature revealed that no prior studies had ever tested for PFOA among personal care products containing the ingredient PTFE. Our testing revealed that 6 out of 17 PTFE-containing samples were contaminated with PFOA.

Our findings indicate that some products with PTFE on the ingredient label are contaminated with PFOA, a chemical used in the synthesis of PTFE. The residual PFOA levels are low—in the 6.9 to 20 parts per billion (ppb) range.

Table 3: Product Testing Results

Values are reported in $\mu\text{g}/\text{kg}$ *

| Product | Ingredients | Parent Company | | Acrylamide | PFOA |
|---|-----------------------|----------------|----------------|----------------|-------------------------------|
| L'Oréal Paris Youth Code, Dark Spot Corrector Day Cream | Polyacrylamide | L'Oréal | CA CT MN | ND ND ND | |
| Cover Girl Bombshell Shine Shadow | Polyacrylamide | P&G | CA CT | ND ND | |
| Revlon Photoready BB Cream | Polyacrylamide | Revlon | CA CT MN | ND ND ND | |
| Revlon Age-defying CC Cream Color Corrector | Polyacrylamide | Revlon | CA CT MN | ND ND ND | |
| Garnier Ultra-Lift Transformer Anti-age Skin Corrector | Polyacrylamide & PTFE | L'Oréal | CA CT MN | ND ND ND | 14 ND 6.9 |
| Garnier Ultra-Lift Anti-Wrinkle Firming Moisturizer | Polyacrylamide & PTFE | L'Oréal | CT MN | ND ND | 11 7.7 |
| Maybelline Define-A-Lash Lengthening Washable Mascara | PTFE | L'Oréal | CA CT MN | | ND ND ND |
| Olay Total Effects, 7 in One, Anti-aging Moisturizer with Sunscreen | PTFE | P&G | CA CT MN | | ND ND ND |
| Cover Girl Advanced Radiance with Olay, Age Defying Pressed Powder | PTFE | P&G | CA CT | | 20 16 |
| Gillette Mach 3 Sensitive Shave Gel | PTFE | P&G | CA MN | | ND ND |
| Cover Girl Tru Blend Mineral Pressed Powder | PTFE | P&G | MN | | ND |

ND = not detected

*Limits of detection for each sample are reported in the Appendix

What It Means

Acrylamide

Previous studies found levels of acrylamide ranging from 3 ppb to over 1,300 ppb in cosmetic products, including makeup and moisturizers.¹⁹ The products we tested may contain acrylamide contamination in levels below the limit of detection in these tests, which were as high as 100 ppb or .1 ppm.

An EU Scientific Committee stated in 1999, "In order that the lifetime use of cosmetics containing polyacrylamide should not pose a significant cancer risk the theoretical content of residual acrylamide [calculated from the amount of polyacrylamide added to the product and the content of acrylamide in the polyacrylamide used] should be <0.1 ppm in body care leave-on products and <0.5 ppm in other cosmetic products."²⁰

PFOA

This is the first report showing PFOA contamination in personal care products containing PTFE. Six of the samples we tested were contaminated with PFOA above the limit of detection, with levels ranging from 6.9 to 20 ppb.

This is concerning. As an endocrine disruptor, PFOA in even small concentrations could lead to adverse health outcomes. In the Ohio study, girls with higher (but still very low levels) of PFOA exposure (median level in blood 6.4 ng/ml, range <LOD 0.1 to 55.9 ng/ml) experienced late onset of menstruation and breast development, both conditions with potential health consequences later in life, including the risk for breast cancer.

One product (Garnier Ultra-Lift Transformer Anti-age Skin Corrector) had detectable PFOA levels in the samples purchased in California and Minnesota but not in the sample purchased in Connecticut. This implies that companies may not be able to consistently control PFOA contamination in the manufacturing process.

As a possible carcinogen, endocrine disruptor and reproductive toxicant, PFOA has no place in our personal care products. Manufacturers should avoid the use of PTFE in order to prevent PFOA contamination in the finished cosmetic product.

Solutions

Everyone has a role to play when it comes to buying, making and selling the cosmetics and personal care products we use, as well as regulating them for safety.

Voluntary market-based action

In the absence of adequate government oversight of cosmetic safety, consumer demand has driven meaningful change on the part of many small and medium-size cosmetic companies, and even some large ones. From 2004 to 2011, the Campaign for Safe Cosmetics worked with hundreds of cosmetics companies to raise the bar for product safety and respond to the growth in demand for safer personal care products.

According to one market-trend report, increasing demand for anti-aging products and growing demand for natural and organic products are driving the skin care industry.²¹

Of the companies we worked with, 432 inventoried their ingredient decks for chemicals of concern, replaced toxic chemicals with safer alternatives, and publicly disclosed all of their product ingredients. All but 110 of these companies also disclosed the constituent ingredients in their fragranced products. More and more companies are leading the personal care products industry by showing that it is not only possible to make safe, effective products without using hazardous chemicals, it is also profitable to do so.



This is the first report showing PFOA contamination in personal care products containing PTFE.

Some large, multinational manufacturers are also starting to raise the bar for their competitors by responding to consumer demand for safer personal care products. For example, Johnson & Johnson recently made good on its commitment to phase out the use of a range of harmful chemicals in its baby products and is expected to reformulate its adult products by the end of 2015.²²

Cosmetics manufacturers can and should voluntarily move toward safer products and production by taking the following steps:

- Avoid the use of chemicals linked to cancer, reproductive and developmental harm, endocrine disruption, asthma and allergies, and neurotoxicity, as well as chemicals linked to occupational harm.
- Replace chemicals of concern with safer alternatives.
- Practice a high level of transparency by disclosing all product ingredients, including constituent ingredients in “fragrance.”
- Adopt a restricted-substances list that governs the current and future use of hazardous chemicals.
- Seek continuous improvement by monitoring scientific research regarding emerging chemicals of concern.

Retail Regulation

The \$71 billion personal care product industry in the United States is largely unregulated, and retailers are stepping up to fill the void. When retailers adopt policies on the safety of the products they sell, it's called retail regulation. There is a rich history of retailers using their purchasing power to effect positive market change. In 2008, when Walmart—the world's largest retailer—agreed to

stop selling baby bottles, sippy cups and sports water bottles made with BPA, it forced manufacturers to reformulate in order to keep selling to this retail giant.

More and more retailers are adopting storewide policies governing the safety of their beauty products, with Whole Foods leading the way by implementing a basic chemical safety screening for all its personal care products and adopting a restricted-substances list made up of more than 400 chemicals prohibited from products bearing its premium standards label.



The increasing demand for anti-aging products and growing demand for natural and organic products are driving the skin care industry.

In 2008 CVS stepped up to the plate by adopting a storewide policy prohibiting the use of certain toxic chemicals in their store-brand baby products. Walgreens and Target followed suit in 2013 by announcing they would develop and adopt comprehensive cosmetic safety policies to govern the safety of the private-label and national brands they carry.

The following goals should guide retailers' policies and practices to improve the safety of personal care products sold in their stores:

- Expand the sale of safer cosmetics and personal care products (products free of chemicals linked to cancer, birth defects, developmental harm and other health concerns).
- Adopt a list of chemicals that are banned from use in private-label and national brands sold in their stores, and ensure that toxic chemicals are replaced with safer alternatives.
- Reformulate private-label products to eliminate chemicals of concern.
- Practice the highest level of transparency by sharing the company's safe-cosmetics policy, practices and progress on websites and in corporate responsibility reports.
- Strive for continuous improvements in policies and practices by monitoring scientific research regarding emerging chemicals of concern.

Federal regulation

Major loopholes in federal law allow the cosmetics industry to put virtually any chemical into a cosmetic or personal care product with no pre-market FDA safety testing or review, no monitoring of health effects, and inadequate labeling requirements. Most of us assume the FDA regulates these products just as it does food and drugs to assure safety. In fact, cosmetics are one of the least regulated consumer products available to the public. To make matters worse, contaminants in a finished cosmetic product that occur as by-products of the manufacturing process, by law, don't have to be listed on the product label. That means chemicals like PFOA can hide in a cosmetic or personal care product without consumers knowing.

The Federal Food, Drug and Cosmetics Act (FFDCA) includes 112 pages of standards for food and drugs, but just a single page for cosmetics. The cosmetics title of the FFDCA, which has not been amended significantly since it was enacted more than 77 years ago, provides virtually no power to perform even the most rudimentary functions to ensure product safety in an estimated \$71 billion cosmetic industry.

Fortunately, for the first time in 77 years, Congress could close the gaping holes in our outdated federal law and give the FDA the statutory authority and resources it needs to effectively regulate the safety of cosmetics and personal care products. Currently, Congress is considering two bills to regulate cosmetics ingredients.

The Senate

On April 20, 2015, Senators Dianne Feinstein (D-CA) and Susan Collins (R-ME) introduced the Personal Care Products Safety Act of 2015, an important bill with the potential to give the cosmetics industry a desperately needed makeover. Many strong provisions in the bill would advance the FDA's ability to protect consumers from unsafe chemicals in cosmetics and personal care products:

- Requiring companies to register their facilities, products and ingredients with the FDA;
- Closing labeling loopholes by requiring full ingredient disclosure for professional salon products and web-based sales of cosmetic products; and
- Directing the FDA to assess the safety of a minimum of five cosmetics chemicals a year.

However, the bill falls short of what is needed. Ideally, federal regulation would put in place a robust safety standard and elevate the rigor of ingredient safety reviews by the FDA and manufacturers to ensure that cosmetics and personal care products are as safe as possible.

As the bill moves forward in the legislative process, common-sense amendments are needed in the following areas:

- The breadth and depth of the bill's safety standard, used by the FDA to assess the safety of cosmetic chemicals, needs to be stronger and should apply not only to the FDA but also to manufacturers' substantiation of the safety of the chemicals in their cosmetic products;
- Fragrance, flavoring and other ingredients should be fully disclosed to the FDA, manufacturers, and consumers;
- Contaminants such as PFOA should be listed on product labels;
- Data sharing of safety studies should be required to assist small businesses and decrease animal testing;
- Adverse-event reports related to cosmetic products that are causing hair loss, burns, disfigurement, hospitalization or other adverse reactions should be made public; and
- The ability of the states to legislate cosmetic safety must be protected.

The House of Representatives

The Safe Cosmetics and Personal Care Products Act is expected to be reintroduced in the U.S. House of Representatives in 2015. This bill has been introduced in Congress in 2009, 2011 and 2013 and is the only federal legislation being considered that would significantly change the status quo, by requiring both FDA and manufacturer substantiation of the safety of cosmetic chemicals, using a single, rigorous safety standard. The House bill would give the FDA the statutory authority and resources it needs to effectively regulate the cosmetics industry and ensure that cosmetics do not contain ingredients or contaminants linked to cancer, birth defects or other serious health problems. It also mandates creation of a publicly accessible database of cosmetic products and ingredients and promotes industry sharing of data from safety studies, which reduces animal testing.



For the first time in 77 years, Congress could give the FDA the statutory authority and resources it needs to effectively regulate the safety of cosmetics and personal care products.

We need safer products and smarter laws.

Comprehensive federal safe-cosmetics legislation is necessary to give the FDA the authority and resources it needs to ensure cosmetics are free of toxic chemicals. New health-protective policies are needed to protect the public from toxic, untested and unregulated chemicals in the cosmetics and personal care products we buy every day. These measures should include:

- A ban on ingredients linked to cancer and birth defects in cosmetics.
- A health-based safety standard that protects children and other vulnerable populations.
- Pre-market safety assessment of cosmetics ingredients.
- Mandatory disclosure on product labels of all chemical constituent ingredients in personal care products, including fragrances and contaminants.
- Sharing of safety data to avoid duplicative testing and encourage transparency and alternatives to animal testing.
- Federal support for the creation of innovative solutions and safe alternatives to toxic chemicals in cosmetics.
- Federal support for small businesses to help them meet federal regulations for safer products.
- Adequate funding and support of the FDA Office of Cosmetics and Colors to provide effective oversight of the cosmetics industry.

What can you do?

Help give the beauty industry a makeover.

Here's what you can do to protect yourself, your loved ones and future generations from unnecessary exposure to toxic chemicals in personal care products.

1. Choose products with no added fragrance.

By opting for products without fragrance, you can reduce toxic chemical exposures for yourself and your family. It is important to read ingredient labels, because even products advertised as “fragrance free” may contain a masking fragrance. Visit our websites for tips and resources to help you find safer products, and avoid chemicals of concern, including PTFE and polyacrylamide: www.safecosmetics.org and www.safecosmetics.org/get-the-facts/chemicals-of-concern/polytetrafluoroethylene.

2. Less is better.

If you are very attached to your fragrance, try eliminating other fragranced products from your routine, and consider using your fragrance less often.

3. Help pass smarter, health-protective laws.

Buying safer, fragrance-free products is a great start, but, as we've noted, we can't just shop our way out of this problem. In order for safer products to be widely available and affordable for everyone, we must pass laws that shift the entire industry to nontoxic ingredients and safer production. Ask Congress to give the FDA the authority and resources it needs to ensure the safety of cosmetics and require full disclosure of ingredients so consumers can make informed choices: www.safecosmetics.org/take-action.

4. Demand that cosmetics makers disclose all ingredients, and support the companies that do!

Tell cosmetics companies that you want them to fully disclose the ingredients in the products they make—including contaminants such as PFOA and the chemicals that are hidden in the term “fragrance.”

Appendix: Limits of Detection

Values are reported in $\mu\text{g}/\text{kg}$ *

| Product | Ingredients | Parent Company | State | Acrylamide | PFOA |
|---|------------------------|----------------|-------|------------|------|
| L'Oréal Paris Youth Code, Dark Spot Corrector Day Cream | Polyacrylamide | L'Oréal | CA | 100.0 | |
| | | | CT | 100.0 | |
| | | | MN | 10.0 | |
| Cover Girl Bombshell Shine Shadow | Polyacrylamide | P&G | CA | 10.0 | |
| | | | CT | 10.0 | |
| Revlon Photoready BB Cream | Polyacrylamide | Revlon | CA | 10.0 | |
| | | | CT | 10.0 | |
| | | | MN | 10.0 | |
| Revlon Age-defying CC Cream Color Corrector | Polyacrylamide | Revlon | CA | 5.0 | |
| | | | CT | 10.0 | |
| | | | MN | 10.0 | |
| Garnier Ultra-Lift Transformer Anti-age Skin Corrector | Polyacrylamide PTFE | L'Oréal | CA | 9.0 | 4.5 |
| | | | CT | 10.0 | 5.0 |
| | | | MN | 7.9 | 4.8 |
| Garnier Ultra-Lift Anti-Wrinkle Firming Moisturizer | Polyacrylamide PTFE | L'Oréal | CT | 10.0 | 4.3 |
| | | | MN | 10.0 | 5.0 |
| Maybelline Define-A-Lash Lengthening washable mascara | PTFE | L'Oréal | CA | | 5.0 |
| | | | CT | | 5.6 |
| | | | MN | | 5.7 |
| Olay Total Effects, 7 in One, Anti-aging Moisturizer with Sunscreen | PTFE | P&G | CA | | 4.7 |
| | | | CT | | 4.9 |
| | | | MN | | 5.2 |
| Cover Girl Advanced Radiance with Olay, Age Defying Pressed Powder | PTFE | P&G | CA | | 5.1 |
| | | | CT | | 4.7 |
| Gillette Mach 3 Sensitive Shave Gel | PTFE | P&G | CA | | 5.3 |
| | | | MN | | 5.3 |
| Cover Girl Tru Blend Mineral Pressed Powder | PTFE | P&G | MN | | 5.3 |

References

- 1 European Commission (1999). Opinion of the Scientific Committee on Cosmetic Products and Non-Food Products Intended for Consumers Concerning Acrylamide Residues in Cosmetics Adopted by the Plenary Session of the SCCNFP of 30 September 1999. Accessed on September 15, 2015. Available Online: http://ec.europa.eu/health/scientific_committees/consumer_safety/opinions/sccnfp_opinions_97_04/sccp_out95_en.htm
- 2 Thonning Olesen, P., Olsen, A., Frandsen, H., Frederiksen, K., Overvad, K. and Tjønneland, A (2008). Acrylamide exposure and incidence of breast cancer among postmenopausal women in the Danish Diet, Cancer and Health Study. *International Journal of Cancer*, 122(9), 2094-2100. Doi:10.1002/ijc.23359.
- 3 National Toxicology Program. (2011). NTP 12th Report on Carcinogens. Report on carcinogens: carcinogen profiles/US Dept. of Health and Human Services, Public Health Service, National Toxicology Program,
- 4 Manson, J., Brabec, M. J., Buelke-Sam, J., Carlson, G. P., Chapin, R. E., Favor, J. B., ... & Working, P. (2005). NTP-CERHR Expert Panel report on the reproductive and developmental toxicity of acrylamide. *Birth Defects Research Part B: Developmental and Reproductive Toxicology*, 74(1), 17–113.
- 5 Andersen, F.A. (2005). Amended final report on the safety assessment of polyacrylamide and acrylamide residues in cosmetics. *International Journal of Toxicology*, 24, 21–50.
- 6 National Toxicology Program. (2011). NTP 12th Report on Carcinogens. Report on carcinogens: carcinogen profiles/US Dept. of Health and Human Services, Public Health Service, National Toxicology Program, 12.
- 7 NTP (National Toxicology Program). 2014. Report on Carcinogens, Thirteenth Edition; Acrylamide. Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. Available Online: <http://ntp.niehs.nih.gov/pubhealth/roc/roc13/>
- 8 Thonning Olesen, P., et al. (2008). Acrylamide exposure and incidence of breast cancer among postmenopausal women in the Danish Diet, Cancer and Health Study. *International Journal of Cancer*, 122(9), 2094–2100. Doi:10.1002/ijc.23359.
- 9 Environmental Working Group (EWG). Perfluorooctanoic Acid. EWG's Skin Deep Cosmetics Database. Accessed on September 15, 2015. Available online: http://www.ewg.org/skindeep/ingredient/730381/PERFLUOROCTANOIC_ACID/
- 10 Calafat, A., Ye, X., Wong, L.-Y., JA, R., & LL, N. (2008). Exposure of the U.S. population to bisphenol A and 4-tertiary-octylphenol. *Environ Health Persp*, 116, 2003–2004.
- 11 Russell, M. H., Waterland, R. L., & Wong, F. (2015). Calculation of chemical elimination half-life from blood with an ongoing exposure source: The example of perfluorooctanoic acid (PFOA). *Chemosphere*, 129, 210-216.
- 12 Olsen, G. W., Burriss, J. M., Ehresman, D. J., Froehlich, J. W., Seacat, A. M., Butenhoff, J. L., & Zobel, L. R. (2007). Half-life of serum elimination of perfluorooctanesulfonate, perfluorohexanesulfonate, and perfluorooctanoate in retired fluorochemical production workers. *Environmental health perspectives*, 1298-1305.
- 13 Lau, C., Anitole, K., Hodes, C., Lai, D., Pfahles-Hutchens, A., & Seed, J. (2007). Perfluoroalkyl acids: a review of monitoring and toxicological findings. *Toxicological sciences*, 99(2), 366-394.
- 14 Vierke, L., Staude, C., Biegel-Engler, A., Drost, W., & Schulte, C. (2012). Perfluorooctanoic acid (PFOA)—main concerns and regulatory developments in Europe from an environmental point of view. *Environ Sci Eur*, 24, 16.
- 15 Apelberg, B. J., Witter, F. R., Herbstman, J. B., Calafat, A. M., Halden, R. U., Needham, L. L., & Goldman, L. R. (2007). Cord serum concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in relation to weight and size at birth. *Environ Health Persp*, 115(11), 1670–1676.
- 16 White, S. S., Calafat, A. M., Kuklennyik, Z., Villanueva, L., Zehr, R. D., Helfant, L., ... Fenton, S. E. (2007). Gestational PFOA exposure of mice is associated with altered mammary gland development in dams and female offspring. *Toxicol Sci: an official journal of the Society of Toxicology*, 96(1), 133–144.
- 17 Pinney, S., Windham, G., Biro, F. M., Kushi, L., Yaghjian, L., Calafat, A. M., ... Bornschein, R. (2009). Perfluorooctanoic acid (PFOA) and pubertal maturation in young girls. *Epidemiology*, 20(6), S80.
- 18 Bonefeld-Jorgensen, E. C., Long, M., Bossi, R., Ayotte, P., Asmund, G., Krüger, T., ... Dewailly, E. (2011). Perfluorinated compounds are related to breast cancer risk in greenlandic inuit: A case control study. *Environmental Health*, 10, 88. <http://doi.org/10.1186/1476-069X-10-88>
- 19 Manson, J., et al. (2005). NTP-CERHR Expert Panel report on the reproductive and developmental toxicity of acrylamide. *Birth Defects Research Part B: Developmental and Reproductive Toxicology*, 74(1), 17–113.
- 20 European Commission (1999). Opinion of the Scientific Committee on Cosmetic Products and Non-Food Products Intended for Consumers Concerning Acrylamide Residues in Cosmetics. http://ec.europa.eu/health/scientific_committees/consumer_safety/opinions/sccnfp_opinions_97_04/sccp_out95_en.htm
- 21 Andrew McDougall (2013). Natural Demand boosts skin care market. Available online: <http://www.cosmeticsdesign.com/Market-Trends/Natural-demand-boosts-skin-care-market>. Accessed October 1, 2015.
- 22 Johnson & Johnson (2015). Our Safety & Care Commitment, Ingredient Policies. Available online: <http://www.safetyandcarecommitment.com/ingredient-info>. Accessed October 5, 2015.

TIPS FOR SAFER COSMETICS

Simplify

Choose products with simpler ingredient lists and fewer synthetic chemicals. Avoid synthetic fragrance by skipping products with “fragrance” on the label, and use fewer products overall.

DIY

Some personal care products are easy to make yourself, and this can be a great project for a party. Make your own sugar or salt scrubs or body oils, using simple, organic ingredients.

Research Products Yourself

Since the beauty industry is largely unregulated, it’s up to you to do your own research to find the safest products. There are no legal standards for personal care products to be labeled “pure,” “natural” or “organic,” so look beyond the marketing claims and read labels carefully.

To find out whether your go-to products are safe or not, try Think Dirty’s shop clean app. This easy-to-use resource ranks the safety of specific products on a scale of 1 to 10 and offers up cleaner solutions.

Read labels

Avoid these chemicals linked to breast cancer, which are found on product labels:

Avoid in anti-aging products

PTFE
polyperfluoromethylisopropyl ether
polytetrafluoroethylene
DEA-C8-18 perfluoroalkylethyl phosphate

Avoid in makeup

Titanium dioxide in powders
PTFE
Carbon black
Benzophenone

Learn more at safecosmetics.org

Get Involved

While it’s possible—and becoming easier—to reduce toxic exposures in your home by buying safer products, it’s not possible to shop our way out of this problem. Even if they’re not in your home, toxic chemicals from personal care products can still end up in our air and drinking water, and in the homes of people who don’t have access to safe products.

The Solution

Help us change the rules of the game! It shouldn’t be legal to sell cosmetics that contain dangerous ingredients. We’re working to pass new laws that protect our health and give consumers better information to make smart choices.