

Toxic Chemicals Are Pouring Out of Consumer Products — Here Are the Most Dangerous

By [Study Finds](#)

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More than 5,000 tons of toxic chemicals are released from consumer products every year inside homes and workplaces, according to new research. The study reveals that people are exposed to multiple chemicals in everyday products, such as shampoos, body lotions, and mothballs, which can cause cancer or birth defects.

The study by researchers from Silent Spring Institute and UC Berkeley found that many products contain toxic volatile organic compounds, or VOCs. Exposure to these chemicals, whether through touch or inhalation as they travel in the air, can lead to various health problems. In California alone, over 5,000 tons of toxic chemicals were released from consumer products inside offices and homes in 2020, with nearly 300 tons coming just from mothballs.

"This study is the first to reveal the extent to which [toxic VOCs](#) are used in everyday products of all types that could lead to serious health problems," says lead author Kristin Knox, a scientist at Silent Spring Institute. "Making this information public could incentivize manufacturers to reformulate their products and use safer ingredients."

To reach their findings, the team examined data from the California Air Resources Board (CARB). For more than 30 years, CARB has tracked VOCs in consumer products to help reduce smog since VOCs react with other air pollutants in sunlight to form ozone, the [main ingredient in smog](#).

The data included information on the concentration of VOCs in various types of products and the sales of each product type in California. Study authors analyzed the most recent data, focusing on 33 VOCs listed under California's right-to-know law, Prop 65. This law is in place because these chemicals [could cause cancer](#), birth defects, or other reproductive problems.

Prop 65 requires companies selling products in the state to warn users if their products could expose them to significant amounts of harmful chemicals. The team's analysis found that more than 100 types of products contained these harmful VOCs. They identified 30 products, including a dozen different types of [personal care products](#), that are especially harmful and may pose serious health risks.

Workplace products are of particular concern, as workers often use many different types of chemical-containing items throughout the day. For example, nail and hair salon workers use [nail polishes and polish removers](#), artificial nail adhesives, hair straighteners, and other cosmetics. The study found that these types of products combined contain as many as nine different Prop 65 VOCs.

Janitors might use a combination of general cleaners, degreasers, detergents, and other maintenance products, potentially exposing them to more than 20 Prop 65 VOCs.

"The same thing goes for auto and construction workers. All these exposures add up and might cause serious harm," says study co-author Meg Schwarzman, a physician and environmental health scientist at the UC Berkeley School of Public Health, in a [media release](#). "At the most basic level, workers deserve to know what they're exposed to. But, ultimately, they deserve safer products, and this study should compel manufacturers to make significant changes to protect workers' health."

Out of the 33 VOCs listed under Prop 65, the researchers identified the top 11 chemicals that manufacturers should eliminate from products. Among the products used on the body, formaldehyde was the most common Prop 65 VOC — found in nail polish, shampoo, makeup, and other personal care items. For home products, general-purpose cleaners, art supplies, and laundry detergents contained the most. Adhesives had more than a dozen, indicating that workers can be exposed to many toxic chemicals just by using one product.

"Although Prop 65 has reduced the public's exposure to toxic chemicals both through litigation and by incentivizing companies to [reformulate their products](#), people continue to be exposed to many unsafe chemicals," says co-author Claudia Polsky, Director of the Environmental Law Clinic at UC Berkeley School of Law. "This study shows how much work remains for product manufacturers and regulators nationwide because the products in CARB's database are sold throughout the U.S."

The authors suggest that the U.S. Environmental Protection Agency (EPA) consider regulating five additional chemicals under the Toxic Substances Control Act (TSCA). These chemicals are ethylene oxide, found in antifreeze and detergents; styrene, present in foods like fried chicken and nectarines; and 1,3-dichloropropene, [used in pesticides](#). The final two are diethanolamine, which can be found in shampoos and perfumes, and cumene, used as a thinner in paint or found in the manufacture of rubber, iron, and steel.

Dozens of unknown 'mystery chemicals' discovered inside people

In 2021, researchers from the University of California-San Francisco uncovered over 100 different foreign chemicals inside of people. Even more unnerving, 55 of these substances [have never been discovered](#) in humans before.

"These chemicals have probably been in people for quite some time, but our technology is now helping us to identify more of them," says Tracey J. Woodruff, PhD, a professor of

obstetrics, gynecology and reproductive sciences at UCSF, in a [university release](#).

Researchers say many of these chemicals come from common consumer products and industrial materials. However, the team called 42 of these substances “mystery chemicals” whose sources are unknown at this time.

Study authors made the discovery through an examination of [pregnant women](#) and their babies. The findings reveal these chemicals are not only in the blood of the expecting mothers, but also in their newborns. This suggests that many chemicals can travel through the mother’s placenta before birth.

“It is alarming that we keep seeing certain chemicals travel from pregnant women to their children, which means these chemicals can be with us for generations,” Woodruff adds.

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