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Fresh scent may hide toxic secret

Innocuous-sounding 'perfume' in detergents, air fresheners made with dangerous chemicals

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By **LISA STIFFLER**
P-I REPORTER

The scented fabric sheet makes your shirts and socks smell flowery fresh and clean. That plug-in air freshener fills your home with inviting fragrances of apple and cinnamon or a country garden.

But those common household items are potentially exposing your family and friends to dangerous chemicals, a University of Washington study has found.

Trouble is, you have no way of knowing it. Manufacturers of detergents, laundry sheets and air fresheners aren't required to list all of their ingredients on their labels -- or anywhere else. Laws protecting people from indoor air pollution from consumer products are limited.

When UW engineering professor Anne Steinemann analyzed some of these popular items, she found 100 different volatile organic compounds measuring 300 parts per billion or more -- some of which can be cancerous or cause harm to respiratory, reproductive, neurological and other organ systems.

Some of the chemicals are categorized as hazardous or toxic by federal regulatory agencies. But the labels tell a different story, naming only innocuous-sounding "perfume" or "biodegradable" contents.

"Consumers are breathing these chemicals," she said. "No one is doing anything about it."

Industry representatives say that isn't so.

"Dr. Steinemann's statement is misleading and disingenuous," said Chris Cathcart, president of the Washington, D.C.-based Consumer Specialty Products Association, in a statement.

"Air fresheners, laundry products and other consumer specialty products are regulated under the Federal Hazardous Substances Act and subsequently have strict labeling requirements," he said. "Companies producing products that are regulated under FHSA must name on the product label each component that contributes to the hazard."

CHEMICALS USED IN SCENTED PRODUCTS

A study from the University of Washington found potentially dangerous chemicals in top-selling air fresheners and laundry supplies when air around the products was tested – but consumers are left in the dark as to their presence. Manufacturers said that they're perfectly safe when used as directed.

AIR FRESHENERS

	DESCRIPTION	CHEMICALS IN PRODUCT	ON LABELS & MATERIAL SAFETY DATA SHEETS*
Solid deodorizer disk	Solid disk often used in rest-rooms	Acetaldehyde, acetone, ethanol, alpha-Pinene	No ingredients on product label; MSDS lists "fragrance, essential oils," notes specific chemicals are trade secrets
Liquid spray	Wall-mounted spray primarily used in schools, health care facilities, etc.	Ethanol	No ingredients on product label; MSDS lists "essential oils, organic perfume food grade gelling agent (proprietary trade secret)"
Plug-in oil	Plug-in freshener used in homes, industrial and institutional facilities	Alpha-Pinene, ethanol, ethyl acetate, acetaldehyde, benzaldehyde, isopropyl alcohol, acetone	No ingredients on product label; MSDS lists "mixture of perfume oils."

LAUNDRY SUPPLIES

	DESCRIPTION	CHEMICALS IN PRODUCT	ON LABELS & MATERIAL SAFETY DATA SHEETS*
Dryer sheet	Scented cloth dryer sheet used in the dryer	Ethanol, alpha-Pinene	Product label lists "biodegradable cationic softeners and perfume;" MSDS lists "non-ionic and cationic fabric conditioning agents, a perfume carrier, perfume, and non-woven cloth."
Fabric softener	Scented liquid fabric softener used in the washing machine	Ethanol, alpha-Pinene, chloromethane, acetaldehyde	Product label lists "biodegradable fabric softening agents (cationic);" MSDS lists "non-ionic and cationic fabric softening agents, perfume, colorant, quality control agents"
Detergent	Scented liquid detergent	Ethanol, 1,4-dioxane, ethyl acetate, alpha-Pinene, 2-butanone	Product label lists "biodegradable surfactants (anionic and non-ionic) and enzymes;" MSDS lists "ethanol, borax, ethanalamine"

* Material Safety Data Sheets, or MSDS, contains chemical information meant to safeguard workers and emergency responders.

Source: University of Washington

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Note: An updated federal database no longer considers ethanol or chloromethane possible carcinogens. This graphic uses older information, as did the University of Washington study.

Millions are spent annually to ensure that fragrances in the products are safe, according to a joint statement from the Fragrance Materials Association, which represents fragrance manufacturers, and the Research Institute for Fragrance Materials, which works closely with the association.

Ingredients are routinely tested, and chemicals that are considered dangerous are present at levels much too low to cause harm, according to the groups.

But there are numerous reports of people -- particularly those with asthma, chemical sensitivities and allergies -- having strong adverse reactions, researchers said.

That's a problem when public restrooms in restaurants or airplanes use air fresheners, or when hotels wash towels and sheets in scented laundry supplies. And even when the concentrations are low in individual products, people are exposed to multiple sources on a daily basis.

Aileen Gagney, Asthma and Environmental Health Program manager with the American Lung Association in

Seattle, herself an asthma sufferer, has a rule of thumb to help avoid exposure: "If it smells bad, it's bad; if it smells good, it's bad."

But even that won't always work.

According to Steinemann, even products labeled "unscented" sometimes contain a fragrance and a "masking" fragrance to make them odor-free.

People, Puget Sound at risk?

For Steinemann's research, published Wednesday in Environmental Impact Assessment Review, she selected a top-selling item from six categories of products: dryer sheets, fabric softeners, detergents, and solid, spray and plug-in air fresheners.

Then she contracted with a lab to test the air around the items to identify the chemicals people could be breathing.

Ten of the 100 volatile organic compounds identified qualified under federal rules as toxic or hazardous, and three of those -- 1,4-dioxane, acetaldehyde and chloromethane -- are "hazardous air pollutants" considered unsafe to breathe at any concentration, according to the study.

The labels gave no indication that the irritating and potentially dangerous chemicals were present, so Steinemann checked the product's Material Safety Data Sheets. These technical documents provide ingredient information for the safety of workers and emergency responders. They, too, disclosed little detail, mostly citing ingredients such as "essential oils" and "organic perfume."

"It's a reasonable expectation to think that laundry products and air fresheners would be free of chemicals that can cause cancer," said Erika Schreder, a staff scientist with the Washington Toxics Coalition.

"But as this UW study shows, it's disturbingly easy to find toxic chemicals in everyday products like these because companies don't have to say what's in their products."

Cathcart, of the Consumer Specialty Products Association, said the information's not on the package because the "chemicals are not present in the products at levels deemed hazardous under the law. Given the limited space on product labels, it is important to include the relevant information consumers need to make intelligent use, storage and disposal decisions."

The threat isn't limited to people. Steinemann and others worry that the chemicals in consumer products flow from homes to the outdoors.

"These chemicals get into our water systems and into Puget Sound," she said. They are "extraordinarily hard to get out of the environment."

Steinemann's research was paid for using discretionary money awarded to her as a UW professor; she wanted to avoid any appearance of a conflict of interest. She has also submitted for publication a study that goes further to examine ingredients in cleaning and personal-care products.

Regulatory gaps

With fears growing over chemicals in consumer products -- lead in toys, bisphenol A in plastic baby bottles, phthalates in shower curtains and cosmetics -- environmentalists and health advocates are calling for stricter regulations of chemicals in everyday goods. They also want shoppers to have more readily accessible

information.

Manufacturers and trade groups representing consumer products routinely counter that there's plenty of testing and oversight from within the industries and from government regulations to ensure safety.

In the fragranced-products arena, they point to industry Web sites with information on product ingredients and suggest contacting companies with specific questions.

Critics maintain that's not enough.

"There's obviously a loophole," said Michael Robinson-Dorn, a UW law professor who aided Steinemann's research. "We regulate many of these chemicals in other circumstances, yet when they're in products that we're in contact with daily, in some cases, we don't wind up finding out about them."

He said the items can slip between regulatory cracks by falling into the jurisdiction of multiple government agencies, none taking ownership.

"Any time you have a product that is regulated by many different agencies, it's easy for them not to react," he said.

In the absence of strong laws, the marketplace is starting to regulate itself.

After the Natural Resources Defense Council last fall found troubling levels of phthalates -- plasticizing chemicals that can potentially harm developing babies -- in air fresheners, Walgreens pulled the products from its shelves.

Last month, NRDC and other environmental groups sued the Environmental Protection Agency to force manufacturers to test air freshener safety and label products with a full ingredient list.

Steinemann's study could push the process along.

"Consumer demand for less-toxic products will encourage companies to reformulate their products," she said.

"This is a case where a little information could have a great public benefit."

HOW BAD ARE THE CHEMICALS?

Products meant to make our homes and clothes smell better may contain hazardous chemicals. Industry representatives said the ingredients are well researched and present at levels too low to cause harm. Environmentalists and health advocates said that people are often exposed to many products, making it hard to know actual exposure levels, and that some people are more sensitive than others.

CHEMICAL CAN BE TOXIC TO THESE ORGANS OR SYSTEMS:

	HAZARDOUS AIR POLLUTANT*	CARCINOGEN	NEUROLOGICAL AND RESPIRATORY	SKIN OR SENSE ORGAN	GASTRO- INTESTINAL, LIVER AND/OR KIDNEY	CARDIO- VASCULAR, BLOOD	DEVELOPMENT AND/OR REPRODUCTIVE
1,4-dioxane	X	X	X	X	X	X	
2-butanone			X	X	X	X	X
Acetaldehyde	X	X	X	X	X		X
Acetone			X	X	X	X	
Alpha-pinene			X	X			
Benzaldehyde			X	X	X		
Chloromethane	X		X	X	X	X	X
Ethanol			X	X	X	X	X
Ethyl acetate			X	X			
Isopropyl alcohol			X	X	X	X	X

*A federal Clean Air Act designation; if carcinogenic, they are assumed to have no known safe level of exposure.

Source: University of Washington, P-I reporting

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