

European Commission Restricts New Sub-Group of PFAS Chemicals



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The European Commission is doubling down on efforts to protect consumers from toxic PFAS chemicals in consumer textiles and other oft used and purchased products.

New measures adopted under the EU's REACH legislation—which aims to guard against damages to human health by regulating the use of certain chemicals—will now restrict companies from employing undecafluorohexanoic acid (PFHxA) and PFHxA-related substances.

According to the Commission, these chemicals, which are sub-groups of PFAS, are highly persistent and mobile in water, posing “an unacceptable risk to human health and the environment.”

The restriction was implemented because the risk posed by PFHxA was not being adequately controlled, and because there are

alternatives available on the market that are not cost-prohibitive for brands or consumers, the government body said last week.

It will ban the sale and use of PFHxA in textile products like rain jackets, as well as food packaging, waterproofing sprays, cosmetics and some firefighting foam applications. Some sectors, like semiconductors, batteries and fuel cells for green hydrogen, will not be impacted by the ban.

Notably, PFHxA has become a common substitution for a once-popular and already-banned PFAS chemical—PFOA. Now that the measure has passed the scrutiny of the European Parliament and the Council based on a scientific assessment conducted by the European Chemicals Agency (ECHA) Committees, the restriction will enter into force 20 days from its publication in the Official Journal. The transition period could last between 18 months and five years depending on the use of PFHxA and the availability of safer alternatives.

Over the past two decades, the EU has upped the ante when it comes to remediating PFAS contamination and pollution, implementing a comprehensive set of actions under its Chemicals Strategy for Sustainability that limit

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the acceptability of “forever chemicals” in consumer products. The Commission said the action taken against the use of PFHxA is separate from a potential “universal PFAS restriction” currently being mulled over by ECHA following a 2023 proposal from five European governments.

“We are removing harmful substances from products that citizens use every day, like textiles, cosmetics and food packaging. This restriction of PFAS is a decisive step in our strategy to boost sustainability, competitiveness and innovation in the chemicals sector,” Maroš Šefčovič, executive vice president for European Green Deal, Interinstitutional Relations and Foresight, said last week.

“Substituting ‘forever chemicals’ helps to keep our environment healthy, preserve our resources, and drive innovation in cleaner alternatives. The direction is clear, and businesses will have sufficient transition periods to adapt.”

The fight against forever chemicals is ramping up globally, with alarming research bringing to light the pervasive and insidious ecological and human health risks posed by the compounds.

A study published over the summer by researchers at Environment International confirmed that PFAS can permeate the skin’s barrier and enter the bloodstream. The chemicals have been linked to myriad health implications, from liver damage to cancer, lipid imbalances and cardiovascular disease.

And reporting released this spring by the Environment and Social Development Organization (ESDO), a Bangladesh-based NGO and research body, and IPEN, a collective of 600 public interest groups in developing nations concerned with chemical and waste policies, showed that the country’s residents face “significant threats” of exposure to PFAS as a direct result of the country’s ready-made garment sector.

The U.S. Environmental Protection Agency (EPA) this year issued restrictions on PFAS in drinking water—the first time that the standards had been finalized for a new chemical since 1996. States, too, are taking the matter into their own hands, with California, Maine, Massachusetts and Minnesota having already banned the sale or distribution of PFAS-laden carpets, rugs, furniture and textiles, and the Golden State making moves to ban the chemicals’ use in apparel, handbags, footwear, upholstery, curtains, towels and bedding by 2025.

Link

<https://sourcingjournal.com/sustainability/sustainability-news/european-commission-pfas-chemicals-restriction-pfhxa-textiles-echa-528730/>

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California Governor Signs Off on Plastic Bag Ban



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Shoppers at California grocery stores, liquor stores and big box stores with pharmacies (a la Target and Walmart) will no longer have the choice of paper or plastic bags at checkout.

On Sunday, Governor Gavin Newsom signed legislation into law that will prohibit retailers from distributing plastic shopping bags.

SB 1053, written by State Senator Catherine Blakespear (D-Encinitas) and Assemblymember Rebecca Bauer-Kahan (D-Orinda), builds upon the framework of the Golden State's decade-old plastic bag ban, which was largely viewed as a failure due to a loophole that has allowed retailers to continue selling thicker, "reusable" plastic bags for a nominal fee.

According to the California Environmental Protection Agency's (EPA) recycling arm, CalRecycle, the 2014 law hasn't made a dent in the state's plastic waste problem—in fact,

the issue has only gotten worse. Grocery and merchandise bag waste ballooned from 157,385 tons the year California passed the bag ban to 231,072 tons in 2022, an increase of 47 percent.

Sen. Blakespear's office attributed the uptick in trashed plastic to the fact that the thicker, more durable bags are actually more difficult to recycle. Few ever make it to the recycling stage, the lawmaker's office said, nor are they reused with significant frequency.

The average plastic bag is used for just 12 minutes—enough time for a consumer to return to their car or home with a purchase—before it's thrown in the bin. A plastic bag's lifespan following its intended use is much longer; a single sack can languish in a landfill or waterway for up to 1,000 years.

"I thank Governor Newsom for signing this important legislation that will help protect California's environment," Sen. Blakespear said. "Instead of being asked do you want paper or plastic at checkout, consumers will simply be asked if they want a paper bag, if they haven't brought a reusable bag. This straightforward approach is easy to follow and will help dramatically reduce plastic bag pollution."

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"We deserve a cleaner future for our communities, our children and our earth," Assemblymember Bauer-Kahan said. "It's time for us to get rid of these plastic bags and continue to move forward with a more pollution-free environment."

Blakespear and Bauer-Kahan agreed to author their identical bills, SB 1053 and its complement, AB 2236, earlier this year, shepherding them through their respective houses of the California Legislature. SB 2053 was ultimately sent to Newsom for approval.

Under the new law, stores can offer shoppers paper bags at checkout or consumers can use their own bags to schlep their purchases out the door. Taking effect on Jan. 1, 2026, the law also contains a new definition for recycled paper bags. All bags advertising that distinction will need to be made up of at least 50 percent recycled content by Jan. 1, 2028.

Supported by groups like Californians Against Waste, California Grocers Association, California Public Interest Research Group (CALPIRG), Heal the Bay, Monterey Bay Aquarium, Ocean Conservancy, Oceana and the Surfrider Foundation, the legislation has been greenlighted by more than 200 state organizations and environmental groups.

California's plastic bag ban proceeds efforts by other states like Connecticut, Delaware,

Hawaii, Maine, New Jersey, New York, Oregon, Vermont, Washington, Colorado and Rhode Island to cut down on plastic waste in a similar fashion.

Newsom's final signoff on the law has surprised few, as the politician has made environmental regulation a cornerstone of his tenure in office. In 2022, he signed into law an aggressive package of climate measures that aimed to slash the state's oil use by 91 percent, decrease air pollution by 60 percent through carbon capture efforts and accelerate a transition to clean energy.

Two years earlier, he issued an executive order stating that all new cars and passenger trucks sold in California must be zero-emission vehicles by 2035, given that transportation accounts for over half of the state's greenhouse gas (GHG) emissions.

The plastic bag ban isn't the only eco-regulation impacting retail that will make its way across Newsom's desk this month.

The governor is also expected to sign off on SB 707, the California Responsible Textile Recovery Act, by Sept. 30. Known colloquially as a textile recycling bill, the legislation will establish an Extended Producer Responsibility (EPR) scheme in the state. Passed in the state legislature on Aug. 30, the first-of-its-kind bill will require sellers of many apparel and textile

products to establish and fund a Producer Responsibility Organization (PRO) to deal with the collection, sortation, transport, repair and recycling of textile waste.

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<https://sourcingjournal.com/sustainability/sustainability-news/california-governor-gavin-newsom-plastic-bag-ban-retail-grocery-waste-sustainability-529015/>

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Canadian study suggests BPA alternative 2,4'-BPA more potent endocrine disruptor

Researchers used transcriptomics to find endocrine activity



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Health Canada researchers have said that 2,4'-bisphenol A is unlikely to be a safer alternative to BPA because it could be a more potent endocrine disruptor.

The finding comes from a series of tests agency scientists conducted on data-poor BPA alternatives in an effort to identify substances that may also act this way. Other chemicals of concern they examined included bisphenol P (BPP) and bisphenol G (BPG).

BPA is widely used in the production of plastic and epoxy resins. It can bind to oestrogen receptors and is known to be endocrine-disrupting. Regulatory action around the world has led to the use of many BPA alternatives, over 100 of which are currently commercially available or in development, according to the Health Canada scientists.

This high number "exceeds the capacity of traditional animal studies to evaluate their hazard potential in a timely manner", the scientists said in the journal *Environmental Pollution*.

Marc Beal from Health Canada's Bureau of Chemical Safety led the effort, using computer models for oestrogen-receptor binding, as well as previous studies on similar structures, to home in on 11 BPA alternatives. All of the selected chemicals had "hazard flags" for reproductive or developmental toxicity or endocrine disruption but limited experimental data.

The scientists used high-throughput transcriptomics to measure changes in gene activity after exposing human breast cancer cells to the 11 bisphenols. Transcriptomics is the study of messenger ribonucleic acid (RNA), which carries code from DNA.

The team looked at global transcriptomic changes as well as genes linked to oestrogen receptor alpha, which BPA activates.

Nine of the chemicals perturbed gene expression or had endocrine-disrupting properties.

The substance 2,4'-BPA, which differs from BPA only in the position of an OH group, activated the oestrogen receptor biomarker at the same concentration as BPA. However, the scientists described it as "more potent" because it also induced global transcriptomic changes at lower concentrations.

Questions on safety of 2,4'-BPA, BPP, BPG

To the best of the scientists' knowledge, the research effort is the first to assess the hazard potential of 2,4'-BPA.

Due to the high degree of structural similarity between 2,4'-BPA and BPA and the evidence of biological activity at relatively low concentrations, they concluded that it is "unlikely to be a safe alternative to BPA".

The research also showed BPP to have endocrine activity *in vitro*. The substance is "commonly used" as an alternative to BPA in a variety of products, including can coatings and polyvinyl chloride (PVC). According to the researchers, one study found high levels of BPP in the urine of children. They said further studies are needed to better characterise its risk potential.

The group's findings also raise concerns over BPG, which showed oestrogen receptor activity and cell toxicity.

"The need for further study of BPG risk potential is underscored by the evidence of exposure in young children internationally and its relatively high *in vitro* toxicity," the researchers said.

With the substances having the same molecular mode of action and evidence of co-exposures in humans, more work is also needed on bisphenol mixtures to see if there are additive or synergistic effects, they said.

Current human and environmental exposure levels to BPA alternatives are "uncertain" and expected to be low but likely to increase, the researchers said. Combining the high-throughput assessment with exposure data could assess the potential risk that "regrettable substitutes" may pose, they predicted.

Timely transcriptomics

Agencies are increasingly turning to transcriptomics for data-poor substances.

The US EPA, for example, has developed a Transcriptomic Assessment Product (ETAP) to translate changes in gene activity into a reference value for a chemical, which estimates a daily dose that is unlikely to harm human health.

Transcriptomics-based reference values from ETAP can be developed "in a matter of months", according to the EPA. It published its first ETAP assessment in March for perfluoro-3-methoxypropanoic acid.

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