

Scientists urge business and government to treat PFAS chemicals as a class

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All per- and polyfluorinated substances (PFAS) should be treated as one class and avoided for nonessential uses, according to a peer-reviewed article published today in *Environmental Science & Technology Letters*.

The authors—16 scientists from universities, the U.S. National Institutes of Health, the European Environment Agency, and NGOs—say the extreme persistence and known toxicity of PFAS that have been studied render traditional chemical-by-chemical management dangerously inadequate. The article lays out how businesses and government can apply a class-based approach to reduce harm from PFAS, including fluoropolymers, which are [large molecules](#).

"With thousands of PFAS in existence, assessing and managing their risks individually is like trying to drink from a fire hose," said Tom Bruton, Senior Scientist at the Green Science Policy Institute. "Phased-out PFAS that were used to make products like non-stick cookware have been replaced with other PFAS that have turned out to be similarly toxic. By avoiding the entire class of PFAS, we can avoid further rounds of replacing a banned substance with a chemical cousin which is also later banned."

Studied PFAS have been associated with cancer, decreased fertility, endocrine disruption, immune system harms, adverse developmental effects, and other serious health problems. The authors note that people are exposed to multiple PFAS at once, and there is little research on the effects of combined exposures.

Less than one percent of PFAS have been tested for toxicity, but all PFAS are either extremely persistent in the environment or break down into extremely persistent PFAS. Cleaning up contamination can take decades to centuries or more and every time an individual "forever chemical" has been studied, it was found to be harmful.

"When it comes to harm from PFAS, it is much more than our own health that's at stake. It is the health of our children, grandchildren and generations to come—indeed, of every creature on our planet," said Arlene Blum, Executive Director of the Green Science Policy Institute. "The longer we continue the unnecessary use of PFAS, the more likely the overall future harm to our world will rival, or even surpass, that of the coronavirus."

The article notes that some companies have already employed a class-based approach to PFAS. For example, IKEA phased out all PFAS in its textile products and Levi Strauss & Co. has committed to a similar phase-out.

"We're proud that our class-based approach to chemicals has helped protect our customers and the environment, for example by removing all PFAS from IKEA's textiles in 2016," said Therese Lilliebladh of IKEA. "It also helps us stay ahead of the curve and avoid falling into a problematic cycle of substituting a similar chemical for one that has been phased out."

Some government bodies have banned the entire class of PFAS for use in some products. For example, Maine and Washington have banned all PFAS in food contact materials and Denmark has banned PFAS from paper-based food packaging. The authors recommend expanding such regulation to all nonessential uses.

Contrary to recent PFAS manufacturer messaging, the authors

emphasize that fluorinated polymers should be included in a class-based approach to PFAS. "These large molecule chemicals can release smaller toxic PFAS and other [hazardous substances](#) into the environment throughout their lifecycle, from production, to use, to disposal," said author Carol Kwiatkowski, an Adjunct Assistant Professor at North Carolina State University. "Fluoropolymer microplastics also contribute to global plastic and microplastics debris."

"PFAS are a complex class of chemicals, but there is a clear pattern of persistence and potential for health harm that unites them all," said retired NIEHS Director Linda Birnbaum. "The use of any PFAS should be avoided whenever possible."

Provided by Green Science Policy Institute

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