

EPA sets health advisory levels for 6 PFAS

For PFOA and PFOS, limit is less than a part per trillion

Levels of several toxic per- and polyfluoroalkyl substances (PFAS) in drinking water should be extremely low to protect public health, the US Environmental Protection Agency says. PFAS are a family of synthetic compounds that resist degradation under ambient and extreme conditions.

On June 15, the EPA tightened its lifetime health advisory levels for two PFAS that are globally widespread contaminants in drinking water: perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The recommendation is 0.004 part per trillion (ppt) for PFOA and 0.02 ppt for PFOS. These levels are dramatically more stringent than the 70 ppt that the EPA recommended in 2016 for the two compounds, individually or combined.

Drinking-water suppliers aren't required to meet the EPA's health advisory levels. The EPA only recommends that utilities notify customers when concentrations exceed the limit.

But the recommendations set the stage for further EPA action. The agency plans to propose mandatory drinking-water limits for PFOA and PFOS later this year. Though no longer made in the US, the two substances were used in firefighting foams and industrial processes for decades.

In addition, the EPA rolled out its first health advisory levels for two PFAS associated with Chemours's GenX process for manufacturing fluoropolymers. They are hexafluoropropylene oxide dimer acid (HFPO-DA) and its ammonium salt. The recommended limit for each of these chemicals is 10 ppt, the EPA says.

GenX substances taint drinking-water supplies in southeastern North Carolina downstream of a Chemours plant and

wells near a Chemours facility in West Virginia. E.I. du Pont de Nemours and Company owned both plants and developed the GenX process to replace the use of PFOA in fluoropolymer production. The firm spun off that part of its business as Chemours in 2015.

In an emailed statement, Chemours says the underlying scientific analysis that the EPA relied on to set the advisory level is "fundamentally flawed." The company says it's evaluating its next steps, including possible legal action.

The EPA also set a health advisory level of 2,000 ppt each of perfluorobutane sulfonic acid (PFBS) and potassium perfluorobutane sulfonate. 3M introduced these chemicals as less toxic replacements for PFOS as a surfactant and in water- and stain-resistant coatings.

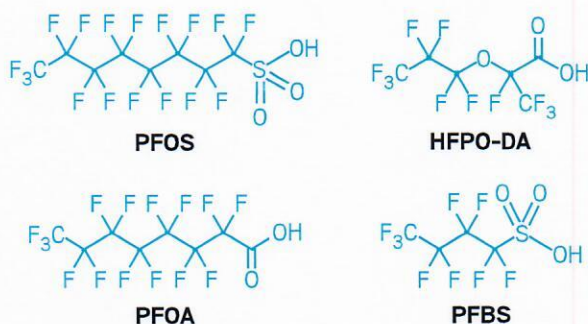
3M did not respond to a request for comment before C&EN's deadline.

"People on the front-lines of PFAS contamination have suffered for far too long," EPA administrator Michael S. Regan says in a statement announcing the new advisory levels. He notes that the bipartisan infrastructure law passed by Congress last year includes \$1 billion to help affected communities reduce PFAS and other contaminants in their drinking water. Regan served as the top environmental regulator in North Carolina when GenX-related PFAS were discovered in drinking-water supplies in the state.

The American Chemistry Council, an

industry trade group, says in an emailed statement that although the EPA's advisory levels are not legally binding, "they will have sweeping implications for policies at the state and federal level." The group claims that in the process of setting the levels, the EPA failed to follow agency scientific integrity practices.

Environmental and health advocates welcomed the health advisories but say the stringent new limits indicate that



the EPA needs to do more to protect the public from exposure to toxic PFAS. They are calling for regulation of these chemicals in air emissions, discharges to water, and waste to control the spread of PFAS contamination.

The PFAS health advisories "should set off alarm bells for consumers and regulators," Melanie Benesh, legislative attorney for the Environmental Working Group, says in a statement. "These proposed advisory levels demonstrate that we must move much faster to dramatically reduce exposures to these toxic chemicals."

According to the EPA, exposure to PFOA or PFOS is associated with suppression of the human body's immune response to vaccines, harm to the cardiovascular system, and interference with the development of fetuses and children. Studies in laboratory animals link the GenX chemicals to adverse effects on the kidney, liver, and immune system, and on development. PFBS and its related potassium sulfonate lowered thyroid hormone levels in laboratory animals and had harmful effects on their reproductive organs, kidneys, and developing fetuses, the agency says.—CHERYL HOGUE

"These proposed advisory levels demonstrate that we must move much faster to dramatically reduce exposures to these toxic chemicals."

—Melanie Benesh, legislative attorney, Environmental Working Group