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Drinking Water Health Advisories for PFAS
Fact Sheet for Public Water Systems

Overview

As part of EPA's commitment to safeguard communities from per- and polyfluoroalkyl substances (PFAS), EPA has established **interim updated lifetime drinking water health advisories** for:

1) PFOA (perfluorooctanoic acid); and
2) PFOS (perfluorooctane sulfonate).

EPA has also established **final lifetime drinking water health advisories** for:

3) GenX Chemicals (hexafluoropropylene oxide (HFPO) dimer acid and its ammonium salt); and
4) PFBS (perfluorobutane sulfonic acid and its related compound potassium perfluorobutane sulfonate).

The interim health advisories are intended to provide information to states and public water systems until the National Primary Drinking Water regulation for PFAS takes effect.

These health advisories provide drinking water system operators, and state, Tribal, and local officials who have the primary responsibility for overseeing these systems, with information on the health risks of these chemicals, so they can take the appropriate actions to protect their residents. EPA is committed to working with our co-regulators and impacted stakeholders on solutions to reduce public health risks.

Background

What Are PFAS?

PFAS are synthetic chemicals that have been manufactured and used by a broad range of industries since the 1940s. PFAS are used in many applications because of their unique physical properties such as resistance to high and low temperatures, resistance to degradation, and nonstick characteristics. PFAS have been detected worldwide in the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. There is evidence that continued exposure above specific levels to certain PFAS may cause adverse health effects.

What Are Drinking Water Health Advisories?

Drinking water health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to drinking water system operators, as well as federal, state, Tribal, and local officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination.

EPA's lifetime health advisories identify levels to protect all people, including sensitive populations and life stages, from adverse health effects resulting from a lifetime of exposure to these PFAS in drinking water. They also take into account other potential sources of exposure to these PFAS beyond drinking water (for example, food, air, consumer products, etc.), which provides an additional layer of protection.

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EPA's Health Advisories for PFOA, PFOS, GenX Chemicals, and PFBS

PFOA and PFOS

In 2016, EPA published health advisories for PFOA and PFOS based on the evidence available at that time. The science has evolved since then, and EPA is now replacing the 2016 advisories with **interim updated lifetime health advisories** for PFOA and PFOS that are based on human epidemiology studies in populations exposed to these chemicals.

Based on the new data and EPA's draft analyses, the levels at which negative health effects could occur are much lower than previously understood when EPA issued the 2016 health advisories for PFOA and PFOS – including near zero for certain health effects. These new health advisory levels are below the levels at which analytical methods can measure PFOA and PFOS. The minimum reporting levels for measuring these contaminants are in Table 1. The EPA Science Advisory Board is reviewing EPA's analyses, and therefore, these interim health advisory levels are subject to change. However, EPA does not anticipate changes that will result in health advisory levels that are greater than the minimum reporting levels.

GenX Chemicals and PFBS

EPA's final lifetime health advisories for GenX chemicals and PFBS are based on final agency toxicity assessments (2021).

Summary of the Four Health Advisories

Chemical	Lifetime Health Advisory Level/Value (parts per trillion or ppt)	Minimum Reporting Level[1] (ppt)
PFOA	0.004 (Interim)	4
PFOS	0.02 (Interim)	4
GenX Chemicals	10 (Final)	5
PFBS	2,000 (Final)	3

[1] Unregulated Contaminant Monitoring Rule (UCMR) 5 MRL is the minimum quantitation level that, with 95 percent confidence, can be achieved by capable analysts at 75 percent or more of the laboratories using a specified analytical method. These MRLs are based on the UCMR 5 requirement to use Method 533.

Recommended Actions for Drinking Water Systems

Steps to Assess Contamination

If water sampling results show the presence of PFOA, PFOS, GenX chemicals or PFBS in drinking water above the health advisory levels, EPA recommends that water systems undertake additional sampling to assess the level, scope, and localized source of contamination to inform next steps. EPA also recommends that water systems work with state authorities on this step to determine if they have state requirements or guidance on concentrations of PFOA, PFOS, GenX chemicals and/or PFBS that warrant action or concern. Drinking water systems and public health officials should also provide consumers with information about the levels of PFAS in their drinking water.

Steps to Inform

If water sampling results show the presence of PFOA, PFOS, or levels of GenX chemicals or PFBS in drinking water above the health advisory levels, water systems should notify their state drinking water safety agency (or EPA in jurisdictions for which EPA is the primary drinking water safety agency) and consult with the relevant agency on the best approach to conduct additional sampling. EPA also recommends that water systems work with state authorities to determine if they have state requirements or guidance on concentrations of PFOA,

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PFOS, GenX chemicals and/or PFBS that may represent levels of concern. Drinking water systems and public health officials should continue to provide consumers with information about the levels of PFAS in their drinking water.

Steps to Limit Exposure

There are different ways to reduce risks from PFAS. In some cases, drinking water systems may be able to reduce concentrations of PFAS by closing contaminated wells or changing the rates of blending of water sources, where the available quantity of drinking water is not compromised. Systems may also remove PFAS by installing technologies such as granular activated carbon, ion exchange or high-pressure membranes. These technologies can be installed at the treatment plant, or for some smaller systems or for private wells it may be more effective to use point of use devices that have been demonstrated to remove PFAS.

Funding to Address PFAS in Drinking Water

As part of a government-wide effort to confront PFAS pollution, EPA is announcing $1 billion in grant funding through President Biden's Bipartisan Infrastructure Law to help communities that are on the frontlines of PFAS contamination. This funding from the Emerging Contaminants in Small or Disadvantaged Communities Grant Program is the first of $5 billion through the Bipartisan Infrastructure Law that can be used to reduce PFAS in drinking water in communities facing disproportionate impacts. EPA will be reaching out to states and territories with information on how to submit their letter of intent to participate in this grant program to EPA. EPA will also engage with Tribes and Alaskan Native Villages regarding the Tribal set-aside for this grant program. EPA will be issuing guidance later this year detailing eligible uses for the funds and providing more information on how water systems can apply to states for this funding.

This new program complements $3.4 billion in funding that is going through the Drinking Water SRFs and $3.2 billion through the Clean Water SRFs that can also be used to address PFAS in water this year. Water systems are encouraged to contact their state SRF programs to learn more about how to apply for funds and for eligible uses to reduce PFAS. For more information on the SRFs, including a list of state DWSRF contacts, visit here.

Other EPA Actions Related to PFAS and Drinking Water

As outlined in EPA's PFAS Strategic Roadmap, released in October 2021, the Agency is developing proposed National Primary Drinking Water Regulations for Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonic acid (PFOS). EPA expects to issue a proposed rule in Fall 2022 and a final rule in Fall 2023. As EPA undertakes this action, the Agency is also evaluating additional PFAS and considering actions to address groups of PFAS.

In addition, EPA's fifth Unregulated Contaminant Monitoring Rule (UCMR 5) requires monitoring for 29 PFAS between 2023 and 2025. Consistent with EPA's PFAS Strategic Roadmap, UCMR 5 will provide new data that are critically needed to improve EPA's understanding of the frequency that these PFAS are found in the nation's drinking water systems and at what levels. More information on UCMR5 is available at: https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule

Where Can I Learn More?

- EPA's drinking water health advisories for PFOA, PFOS, PFBS and GenX Chemicals can be found at: [insert new URL]
- EPA's Unregulated Contaminant Monitoring Rules are available at: https://www.epa.gov/dwucmr/
- PFAS NPDWR consultations and stakeholder engagements: https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas
- EPA's PFAS website explains more about our understanding of the chemical group, provides EPA's PFAS Strategic Roadmap, actions the agency has taken to implement it, and provides other tools and resources

related to addressing PFAS: https://www.epa.gov/pfas

- EPA's stewardship program for PFAS related to the Toxic Substances Control Act (TSCA): https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/pfas-low-volume-exemption
- EPA's research activities on PFAS can be found at: https://www.epa.gov/chemical-research/status-epa-research-and-development-pfas
- The Agency for Toxic Substances and Disease Registry's (ATSDR) Perfluorinated Chemicals and Your Health webpage at: https://www.atsdr.cdc.gov/pfas/index.html