

PFAS

PFAS stands for per- and polyfluoroalkyl substances, and is a class of nearly 15,000 man-made chemicals all containing one or more carbon-fluorine chemical bonds. **PFAS are commonly called “forever chemicals” because they do not break down in water or oil, are highly heat resistant, and fail to degrade in the environment.** PFAS chemicals have been in use since the introduction of Teflon (PTFE) by DuPont in 1938.

PFAS bioaccumulates, meaning PFAS chemicals build up within our bodies and gain concentration up the food chain, with top predators (including humans) experiencing the highest levels of PFAS. PFAS binds to proteins in our body, accumulating in organs such as the liver, and in blood tissue. **According to a report by the CDC, 97% of Americans have PFAS detectable in their blood. By 2010, PFAS was detected globally in all components of the environment globally, including plants, animals, food, water, and soil.**

Streams of PFAS Exposure

PFAS is used in a variety of consumer products including food packaging, non-stick cookware, stain lifters, stain resistant clothing and carpeting, cosmetics, firefighting foams, home cleaning supplies, paints, sealants, waxes and coatings.

PFAS can be ingested, inhaled or absorbed dermally.



Health Harms Associated with PFAS

PFAS chemicals are powerful carcinogens, and can cause cancer even at low levels of exposure. Each PFAS compound has unique properties, and health impacts vary. The six PFAS chemicals with federal drinking water maximum contaminant levels (MCLs) are known to cause liver and heart disease in adults and developmental and immune system challenges in children in addition to cancer. PFAS compounds have also been linked to increased cholesterol levels, thyroid disease, fertility issues, and decreased vaccine efficacy.

PFAS Remediation

PFAS compounds have strong chemical bonds, rendering conventional remediation methods such as incineration ineffective. Research teams across the country and around the world are developing remediation solutions for PFAS, but such methods are incredibly costly. **Researchers estimate that the cost to remove and destroy the total quantity of PFAS released into the environment annually would likely exceed the global GDP of 106 trillion USD.** Furthermore, most remediation tools are focused on water contamination, while it is much more difficult to remediate PFAS contamination in soil and other environmental media.

Addressing PFAS Contamination

Because PFAS chemicals are potent toxins with significant negative health effects, bioaccumulate in the environment, and are particularly challenging and expensive to remediate it is pertinent to take action to prevent their release into the environment. **As of 2024, 30 states have enacted legislation regulating PFAS.** Examples include state funds for PFAS remediation, phasing out PFAS in consumer products, banning AFFF firefighting foam, setting Maximum Contaminant Levels for PFAS in drinking water, and setting PFAS limits for sludge. Missouri can join this growing list of states taking action to address PFAS contamination and protect the health of Missourians and our environment.

Sources:

[Sciencedirect.com](https://www.sciencedirect.com): [Estimated scale of costs to remove PFAS from the environment at current emission rates](#)

[Saferstates.org](https://www.saferstates.org): [Policies for Addressing PFAS](#)

[Ncsl.org](https://www.ncsl.org): [Per- and Polyfluoroalkyl Substances \(PFAS\) | State Legislation and Federal Action](#)

[Nih.gov](https://www.nih.gov): [Early life exposure to per- and polyfluoroalkyl substances \(PFAS\) and latent health outcomes: A review including the placenta as a target tissue and possible driver of peri- and postnatal effects - PMC](#)

[Nih.gov](https://www.nih.gov): [Perfluoroalkyl and Polyfluoroalkyl Substances \(PFAS\)](#)

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[Epa.gov](https://www.epa.gov): [Dermal Exposure Potential and PFAS: Recent Research](#)

[Gao.gov](https://www.gao.gov): [PFAS—“Forever Chemicals”—May Be the Biggest Water Problem Since Lead | U.S. GAO](#)

