



Variations of PFAS

PFAS (Per- and Polyfluoroalkyl Substances): a class of over 9,000 highly persistent and toxic chemicals used in many industrial processes and consumer products. PFAS may also be referred to as Perfluorinated Compounds (PFCs).

PFOA (Perfluorooctanoic Acid): one of the legacy long-chain PFAS chemicals, also known as C8. PFOS stands for perfluorooctane sulfonic acid, which is one of the legacy long-chain PFAS chemicals, first used by 3M as a main ingredient in Scotchguard. PFOA and PFOS are two of over 9,000 PFAS chemicals but are some of the most common ones known because of their documented toxicity and the impact on communities that have found these chemicals in their water supply. PFOA and PFOS were voluntarily phased out by industry in the U.S. and are therefore often called "legacy chemicals" However, they have been replaced with other PFAS chemicals, the effects of which are not fully known, but the growing consensus is that they are also highly toxic.

PTFE: a fluoropolymer made from PFAS, and is best known by the brand name Teflon, although it goes by other brand names as well.

Understanding PFAS

Chemical classes: groupings of related chemicals by similar features (like their carbon-fluorine structure).

Class-based approach: Making decisions about chemical classes rather than individual chemicals. A class-based approach allows for efficient decision making based on an entire group of chemicals and helps scientists and policymakers to better understand and address these chemicals. It also avoids "regrettable substitutes" — when a known toxic is eliminated, but substituted with a similar chemical from the same class.

Endocrine disruptors: chemicals that can interfere with the endocrine (hormonal) systems, and can cause cancers, birth defects, and other developmental disorders. PFAS are endocrine disruptors.

Long-chain PFAS: have six or more carbon atoms in the molecule, such as PFOA and PFOS with 8 carbons. Long-chain PFAS have been found to bioaccumulate and biomagnify more than short-chain PFAS.

Health Advisory Level: the level of contamination of PFOA and PFOS from drinking water that the federal EPA has determined to be safe. The EPA's health advisory level is 70 parts per trillion.

Maximum Contaminant Level (MCL): the highest level of a contaminant that is allowed in drinking water. Massachusetts' MCL for PFAS6 is 20 parts per trillion.

Parts per billion (ppb): can also be written as $\mu g/k$ kg which means microgram(s) per kilogram. This is the standard measurement for PFAS concentrations in solids such as soils.

Parts per trillion (ppt): can also be written as ng/L which means nanogram(s) per liter. This is the standard measurement for PFAS concentrations in water.

Where PFAS Can Be Found

AFFF (Aqueous Film Forming Foam): used to fight fuel-driven fires, and is often a source of PFAS contamination at military bases, airports, and other fire or spill sites.

PPE (Personal Protective Equipment): including firefighter turnout gear which is required to contain PFAS according to NFPA standards.

FOR MORE INFORMATION, PLEASE CONTACT:

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