Detecting PFAS

Monitoring Risks Through Analysis

Per- and polyfluoroalkyl substances (PFAS) are a large group of synthetic chemicals that have been used in industrial and consumer products since the 1930s. These chemicals are used to make products that resist heat and chemical reactions and repel oil, stains, grease, and water. PFAS have a detrimental impact on both the environment and public health.

Unfortunately, PFAS are Here to Stay

PFAS all contain bonds between carbon and multiple fluorine atoms, one of the strongest known. This property makes these chemicals highly resistant to environmental degradation, thus earning them the nickname “forever chemicals.”
Detecting PFAS Forever Chemicals

PFAS are Everywhere

There are more than 9,000 known PFAS compounds. Due to their widespread use, release, and unsound disposal, these chemicals have been detected virtually everywhere, including soil, surface water, the atmosphere, the deep ocean, and even human tissues.

Contamination in drinking water is a problem because PFAS are water-soluble, highly mobile, and can migrate into surface soils, leach into groundwater and surfaces, ultimately making their way into drinking water and the food chain.
PFAS are an environmental pervasive issue, and their analysis helps us learn from our past to protect our future. Widespread testing and investigation of these environmental contaminants is leading to greater awareness, regulatory actions, and their removal from commercial products.

**From Discovery to Scrutiny: A Timeline on PFAS**

- **1930s**: Teflon accidentally discovered in 1938.
- **1940s**: Teflon used in the Manhattan Project for the development of the atomic bomb.
- **1950s**: Aqueous Film Forming Foam (AFFF) is developed.
- **1960s**: Use of PFAS significantly expands in different industries.
- **1970s**: Global Distribution of certain PFAS Voluntary phase out of products.
- **2000s**: Increased public scrutiny, changing regulatory climate, lawsuit settlements, development and use of new, safer PFAS.
- **Current**: PerkinElmer, For the Better
PFAS make their way through various industrial operations and ecosystems to enter the human food chain. Therefore, detecting PFAS is the first step in mitigating risks to health and to the environment. In the diagram below you will see many of the regulatory methods available to do so.
Increasing Our Understanding Through Analysis

Detection and quantitation of PFAS informs future decisions on how to best protect both the environmental and human health. When analyzing samples, it can be challenging to meet stricter regulations that demand lower detection limits. In addition, PFAS interferences and their removal further increase the analytical complexity because of their ubiquity. When throughput and efficiency are paramount, the following solutions have been created to meet and exceed your goals.

The QSight Triple Quad 200 LC/MS/MS
Our robust and reliable LC/MS/MS systems are ideal for environmental samples. QSight® triple quad systems consistently deliver the throughput and productivity you need in your analytical testing lab.

The QSight Triple Quad 400 LC/MS/MS
We’ve added the premier model to our QSight family: the high-performance 400 series. This ready-to-implement solution has one of the most sensitive instruments and highest throughputs in the industry and the capability to test for the most challenging, complex samples.
Detecting PFAS Forever Chemicals

Advance Your Knowledge

The following application notes provide valuable insight into the performance, abilities, and applications of our solutions when testing water, soil, and other environmental elements for PFAS.

Learn about a fast and robust method for the analysis of all analytes listed in EPA Method 8327.

Discover an excellent method for the determining trace amounts of PFOA and PFOS in drinking and surface water samples.

Discover an excellent system for the application of EPA Method 537.1 with ample sensitivity to measure all analytes.

This study analyzes PFAS in biological and environmental matrices to better understand their effect on the environment.

Read about improved throughput for the analysis of perfluoroalkyl and polyfluoroalkyl substances in drinking water by EPA Method 533.

Learn about a versatile and efficient direct inject approach to the analysis of 17 PFAS compounds in drinking and surface water samples.
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Learn how PerkinElmer can help you make the most of your important lab assets.
Helpful Links and Information

This content will help you discover simple, effective solutions to help your lab meet new and evolving testing needs.

- Environmental Testing Solutions Brochure
- Tools and Technologies for Environmental Analysis
- Drinking Water Analysis Brochure
- Soil Testing Solutions Brochure
- Outdoor Air Monitoring Solutions Brochure
- Drinking Water Analysis Webinar Series
For more information on our PFAS Analysis Solutions, visit www.perkinelmer.com/category/pfas