

Cutting-edge analytical support in emerging areas of environmental concern.

Fire Extinguishing Foams, Stain Protection and Water Proofing Treatments.

What is PFOA and related compounds

PFOA is Perfluorooctanoic acid. In its commercial applications it has many names. It is a man-made chemical primarily used in fire fighting foams and to create water resistant and stain treatments for paper and cloth. When used in the form of a fire fighting foam, it is frequently known as "aqueous film forming foam" (AFFF). When used in the form of a water resistant treatment, "PFOA" is an acronym used to indicate not only Perfluorooctanoic acid itself, but also its principal salts. For example, the Ammonium salt (Ammonium perfluorooctanoate) is sometimes referred to as PFOA or as APFO. Another example is the sulfonated acid (Perfluorooctane sulfonate) which is sometimes referred to generically as PFOA or as PFOS.

Why is PFOA and related compounds of Environmental Concern?

PFOA and related compounds have been used in a wide range of everyday consumer products for more than 40 years. In 2002, the United States Environmental Protection Agency (EPA) initiated a "priority review" to determine whether expedited regulatory action against PFOA and related compounds is warranted. It has already been proven that the compounds are highly persistent and widely distributed in the environment, and that they bioaccumulate. US EPA's Director of the Office of Prevention, Pesticides and Toxic Substances Risk Assessment Division has already commented that, "Toxicological studies in rodents and primates have shown that exposure to PFOA can result in a variety of effects including developmental/reproductive toxicity, liver toxicity, and cancer." The EPA has entered into enforceable consent agreements (ECAs) with some parties under the Toxic Substance Control Act (TSCA) to control PFOA in the environment.

Perfluorooctanoic Acid (PFOA) Analysis

Leeder Consulting has developed an LC/MS/MS procedure to detect and quantify PFOA in water at part per trillion (ppt) levels and in soils at low part per billion (ppb) levels.

The extraction procedures include solid phase extraction for water and sonication for soil. The analysis is performed by liquid chromatography and electrospray mass spectrometry. This technique utilizes MS/MS detection, mass spectral separation followed by ion fragmentation and mass separation. This is the most sensitive and selective detection capability available in the environmental testing industry today.

The procedure has been validated by Leeder Consulting and a reporting limit for PFOA has been established at 0.050 ug/L in water and 2.0 ug/kg in soil. Perfluorononanoic acid (PFNA) is used as a surrogate compound for sample specific QC. Other related compounds that can be analyzed by LC/MS/MS include PFOS (Perfluorooctane sulfonate)

Quality Assurance and Quality Control are primary considerations when undertaking specialist analytical work. Leeder Consulting's Management Systems are **AS/NZS ISO 9001 Certified**, the laboratory is **NATA Accredited** and is a **Registered Quarantine Laboratory**.

Leeder Consulting offer a range of specialised high-tech, non-routine and on-site services. Access to leading edge technology and expertise in Australia and overseas guarantees results when and where you require. To discuss your requirements or for more information call us now.



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