

PFAS in drinking water

PFAS (per- and polyfluorinated alkyl substances) is a large class of chemicals that today may comprise more than 9000 compounds. Over the last decade, the exposure and health effects caused by these “forever chemicals” have received growing attention. This applies many times to water that has been contaminated at e.g. fire training sites. Legislation covering drinking water has been introduced in many countries and limit values have gradually been lowered. Moreover, contaminated water can impact produce e.g. at irrigation and affect food production.

Regulation

EU's revised drinking water directive (EU 2020/2184; DWD) came into force 2023 and must be implemented across all member states. In the directive 20 PFAS are given, two series of C4-C13 PFAS, and the sum of these has a limit of 100 ng/l. There is also an alternative parameter “PFAS total” of 500 ng/l, but the method to use for measurement has not been decided upon yet.

In Denmark and Sweden, and possibly other countries in the coming years, additional limit values for PFAS4 (PFOS, PFOA, PFHxS, PFNA) have been introduced (2 (DK) and 4 ng/l (SE)), levels derived from the EFSA TWI (tolerable weekly intake) value. Moreover, in the two Scandinavian countries PFAS20 has been extended with one (SE) or two (DK) compounds. The US-EPA has also proposed a new National primary drinking water regulation with a limit of 4 ng/l for PFOS and PFOA as well as a hazard index for four others (PFNA, PFHxS, PFBS, GenX).

Occurrence of PFAS

A major difference between PFAS and many other organic pollutants is that most of the substances have a relatively high water solubility. The aquatic systems therefore often become a sink. Several cases of contaminated drinking water sources have been detected over the last 10-20 years. Fire-fighting training sites where foam has been used are frequent, but there are also other sources e.g. landfills, waste water treatment plants (WWTP) and industries (e.g. chemicals, textiles). Another observation is that the new drinking water regulation in the low ng/l range is many times close to expected background levels which warrants monitoring also without any known point source.

PFAS in Water – Analytical Packages

Eurofins offers packages that can be used to analyse in accord with EU PFAS4 (PLWAZ), DWD20 (PLW9B), SE21 (PLWFW), DK22 (PLW7W) and a more extensive screening pack (incl UK DWI47; PLW81). Accreditation covers drinking, surface and groundwater. For unclean waters e.g. waste or process waters there are alternative packs. Also TOP assay (total oxidizable precursors) and extended reporting of linear and branched forms can be provided. For quality and operational reasons, please use “PFAS bottles” from Eurofins. For each pack 2 pcs of 100ml bottles is required. The delivery time (TAT) is 7 cal days and express options are available.

All about PFAS: www.eurofins.se/about-pfas



Eurofins Food & Feed Testing's pesticide laboratory in Sweden has by Eurofins been appointed as Competence Center for PFAS testing for food in Europe. Eurofins in Lidköping (SE) started analyzing PFAS already at the beginning of the 2000s. After a break, the analysis was set up again in 2015 and since 2016 a large leading PFAS lab has been established.