HOW INVOLVED ARE YOU IN TESTING OF PFAS WATER SAMPLES?

Until recently, the standard procedure for determining selected polyfluoroalkyl substances (PFAS) in water samples was high-performance liquid chromatography coupled with mass spectrometric detection (HPLC-MS/MS) after solid-liquid extraction. With DIN 38407-42 being the basis in perfluorinated compound analytics (PFC), sample testing followed a three steps process:

1. Enrichment of a 50 ml water sample using solid-phase extraction (SPE) via anion exchange (AX) and sample conditioning using 2 ml methanol/0.1% ammonia.
2. Separation of a 2 ml, ammonia-methanol-containing elution.
3. Quantitative determination of PFAS using mass spectrometry, calibrated with linear PFAS.

This procedure is suitable for polar, positive, and non-volatile compounds, excludes compounds such as PFOSA, and measures PFAS levels with detection limits in the ppb (parts per billion) range.

Following an expert report concluding the need for a more sensitive standard procedure, the CEN introduced the Drinking Water Directive 2020/2184 (4) on 16 Dec. 2020 to empower technical staff of laboratories to perform routine measurements in daily practice for the identification of PFAS entry sources located upstream from raw water reservoirs of waterworks.

Considering the state of the art in technology and science, this new standard, labeled as EN 17892:2024, was approved by CEN on 19 May 2024, including technical guidelines for analytical PFAS measurement. Using liquid chromatography-tandem mass spectrometry (LC-MS/MS), this method operates either using high-volume injection or SPE and with a limit of quantification (LOQ) of 1 ng/l = 1ppt (one part per trillion). These days, technical staff applying this method present analytical determination limits of 0.2 ng/l = 0.2 ppt. Reduced operational costs and faster sample testing time

are further benefits, with the number of laboratories and research centers applying this new standard growing significantly since.

At **MEDSTERN CANADA LLP**, we support Business-to-Business processes and provide technology transfer and project coordination support to Local Leaders in North America in their efforts to build, secure, and maintain drinking water infrastructures of excellence:

- ❖ Interested in learning more about new developments in PFAS Testing?
- ❖ Looking for established B2B Collaboration Partners active in the Clean Water Sectors?
- ❖ Are you seeking help navigating language, norms, and technical standards?
- ❖ A trusted guide to harmonize your Clean Tech B2B Partnerships?

Read more about evolving PFAS directives, standard procedures, and trends at https://eur-lex.europa.eu/eli/dir/2020/2184/oj#:~:text=DIRECTIVE%20(EU)%202020/2184%20OF%20THE%20EUROPEAN%20PARLIAMENT%20AND%20OF%20THE and file:///C:/Users/maila/Downloads/EN_17892%7B2024%7D_(E).pdf and https://trends.google.com/trends/explore?date=all&geo=CA&q=pfas&hl=en and https://trends.google.com/trends/explore?date=all&geo=US&q=pfas&hl=en

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Abbreviations:
PFAS, Perfluoroalkyl and polyfluoroalkyl substances
CEN, Council of European Nations

Hashtags:
#Waterworks #Drinking_Water #Clean_Water #Raw_Water #Industrial_Wastewater
#PFAS #PFAS_Testing #LC_MS/MS #Liquid_Chromatography #Mass_Spectrometry
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