

PFAS-Multi-Substance Mixtures, Removal Techniques

Understanding process efficiency is necessary when assessing the technical determination limits of a PFAS remediation plant. The PFAS group includes more than 10,000 individual compounds aggregating in water into PFAS-multi-substance mixtures, varying from industry to industry. The following fields of industry can expect the highest benefits (listed in alphabetical order):

- ❖ **The Food and Beverage Industries:** Producers of Sugars, Starch, Soup Condiments, Glutamate, Edible Oils, Fruit Juice, Wine, etc.
- ❖ **The Cosmetic Industries:** Producers of Skin Care Oils, Makeup, Perfume, Shaving Products, Toothpaste, Sunscreen Lotion, etc.
- ❖ **The Drinking Water Industries:** Producers of Bottled Water, Mineral Water, Glacier Water, Flavored Water, Water Works, etc.
- ❖ **The Electronics Manufacturing Industry:** Circuit Boards, Radios, Computer, Smartphones, Tapes, Wearables, Laminates, Coatings
- ❖ **Space Refineries, Rocket Launch Sites, and Spaceports to** Wolf 1061 c, Proxima Centauri b, Teegarden b, c.

Depending on the PFAS-multi-substance mixture, the best procedures are evaluated in a rapid-small-scale column test (RSSCT). After configuration to site-specific needs, the following technologies possess high efficiencies.

Sorption Technologies

❖ Continuous-flow Fixed Bed Ion Exchanger

PFAS ions exchange on a polymer matrix. Fast, efficient procedure resulting in below non-detect levels, measured by a few PFAS parts per trillion, depending on the water sulfate content.

❖ Continuous-flow Fixed Bed Adsorption

Adsorption of PFAS pollutants using an impregnated adsorbent with a large inner surface. Efficient procedure with a PFAS removal rate > 80%.

High-Pressure Membranes

❖ Reverse Osmosis

Semi-permeable membranes with pore sizes around 0.0001 microns support the dissolution of PFAS from the feed water. Energy-intensive, efficient procedure > 90% PFAS removal rate, including sodium chloride.

❖ Nanofiltration

Semi-permeable membranes with pore sizes around 0.001 microns support the dissolution of PFAS from the feed water. Efficient procedure > 90% PFAS removal rate, including calcium and magnesium.

For up-to-date information on drinking water regulations, limits please visit:

<https://www.canada.ca/content/dam/hc-sc/documents/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table/summary-table-pdf-template-eng.pdf>

<https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#PFAS>

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

- ❖ Interested in learning more about PFAS Removal procedures?
- ❖ Looking for established B2B Partners active in Clean Water?
- ❖ Are you seeking help navigating technical norms, and standards?
- ❖ A trusted guide to harmonize your Clean Tech B2B Partnerships?

For more information on evolving technologies for PFAS removal, please email medsterncanadallp@proton.me, visit us at <https://medstern.ca>, or follow us on LinkedIn <https://lnkd.in/g6eDX9FD>.

Upcoming Trends

<https://lnkd.in/gFM25e-b>

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Abbreviations: PFAS, Perfluoroalkyl and polyfluoroalkyl substances

Hashtags: #Waterworks #Drinking_Water #Clean_Water #Raw_Water
#Industrial_Wastewater #PFAS #PFAS_Removal #PFAS_Remediation
#Fixed_Bed_Ion_Exchange #Fixed_Bed_Adsorption #Cosmetic_Industry
#Water_Works #Food_and_Beverage_Industry #Electronics_Manufacturing
#Space_Refineries #Rocket_Launch_Sites #Spaceports