Submitted by

EurO_3zon ivzw

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COMMENTS TO THE PUBLIC CONSULTATION ON THE REACH RESTRICTION PROPOSAL ON PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

ASSESSING THE IMPACTS ON THE USE OF OXIDATION AND DISINFECTION TECHNOLOGIES FOR PROVIDING EEA WITH ESSENTIAL WATER TREATMENT PROCESSES

Public version

Use of fluoropolymers-based parts/components in new installations of and maintenance and replacement of existing water treatment technologies (including Ozone-based technology, UV-based technology, Chlorine dioxide-based technology, Electrochlorination, Active bromine-based technology and Dosing systems/pumps for chemicals): Socio-economic assessment

Executive summary

Fluoropolymers are essential materials for the manufacturing of several components of water treatment technologies. Due to their key functionalities, they are mainly used in sealing applications (e.g., seals, O-rings, gaskets), pipes, valves, pumps, reactors, metering tubes as well as part of other components including gas monitoring equipment, electrolysis cells and membranes that are essential for the functioning of water treatment technologies.

Notably, there are no PFAS-free water treatment technologies suitable for disinfection/oxidation purposes at municipal or industrial water treatment level. Consequently, all treatment plants for drinking water, swimming pool water, process water and wastewater (at municipal and industrial level) in the EU rely on installed PFAS-dependent water treatment technologies.

Given the classification of fluoropolymers as polymers of low concern (PLC)[1] and the absence of PFAS-free alternatives to water treatment technologies using fluoropolymer-containing components, the EurO3zon members commissioning the current report request a time-unlimited derogation for the use of fluoropolymers in water treatment technologies, namely the ozone-based technology, the UV-based technology, the chlorine dioxide-based technology, electrochlorination, the active bromine-based technology and dosing systems/pumps for chemicals. Notably, both new installations and spare parts for existing technologies fall under the scope of the requested derogation.

Based on the conclusions drawn from the current impact assessment, a lack of such a time-unlimited derogation from the PFAS restriction would result in several critical effects for the EEA society. From a public health perspective, the supply of adequately treated drinking water in the EEA would be compromised, leading to an increase in the spread of water-borne diseases, the safety of using swimming pools could no longer be ensured, while there would be an increased risk of food poisoning from consuming potentially contaminated food products. Meanwhile, a shortage of essential products such as food and beverages and medicines, to mention only a few, would significantly decrease the quality of life in the EEA, whereas an increased reliance on imported products from non-EEA (e.g., pharmaceuticals) coupled with potentially higher product prices would be the consequence.

From an environmental point of view, such a restriction scenario would lead to an increased level of contaminants in EEA aquatic environments due to a reduced efficiency for removing such chemical and microbiological materials from urban wastewaters. Moreover, wastewater would no longer be repurposed for conserving water resources, such as using it for agricultural irrigation, while the environmental impact would escalate due to the implementation of more energy-intensive and less effective water treatment techniques that do not depend on PFAS.

From a socio-economic standpoint, such a scenario would lead to job losses, foregone profits as well as additional one-off costs associated with business shutdowns in the supply chain as well as increased operating costs due to the use of less efficient technologies and additional one-off costs for decommissioning and replacing current installations relying on fluoropolymers. Based on the data availability at the time when this report was prepared, the current impact assessment could only monetize the socio-economic effects associated with one-off costs for the eventual displacement of existing technology installations in the EEA in a worst-case scenario due to the absence of spare parts and maintenance services required for continued functionality as well as foregone profits and job losses experienced at the level of some stakeholders in the supply chain. These impacts only are evaluated at 35.32 – 58.40 billion Euros (NPV 2025) in terms of costs for the EEA society in case of a restriction scenario where fluoropolymers can no longer be used for the manufacturing and MRO of water treatment technologies in the EEA. Notably, without capturing the broader societal and environmental consequences

[1] Korzeniowski, S. H., Buck, R. C., Newkold, R. M., Kassmi, A. E., Laganis, E., Matsuoka, Y., Dinelli, B., Beauchet, S., Adamsky, F., Weilandt, K., Soni, V. K., Kapoor, D., Gunasekar, P., Malvasi, M., Brinati, G., & Musio, S. (2023). A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers. *Integrated environmental assessment and management*, *19*(2), 326–354. https://doi.org/10.1002/ieam.4646

qualitatively described above, this monetized value largely remains a significant underestimation of the real impacts in case of a restriction, as water treatment is absolutely indispensable for the functioning of the EEA society. A visual representation of the treatment procedure for drinking water highlighting the critical disinfection step needed in the process is illustrated in Figure 1. Notably, the general series of treatment steps is also applicable for the treatment of wastewater, in which an additional step for removing micro-pollutants is required for ensuring an adequate wastewater quality prior to discharge to water bodies.

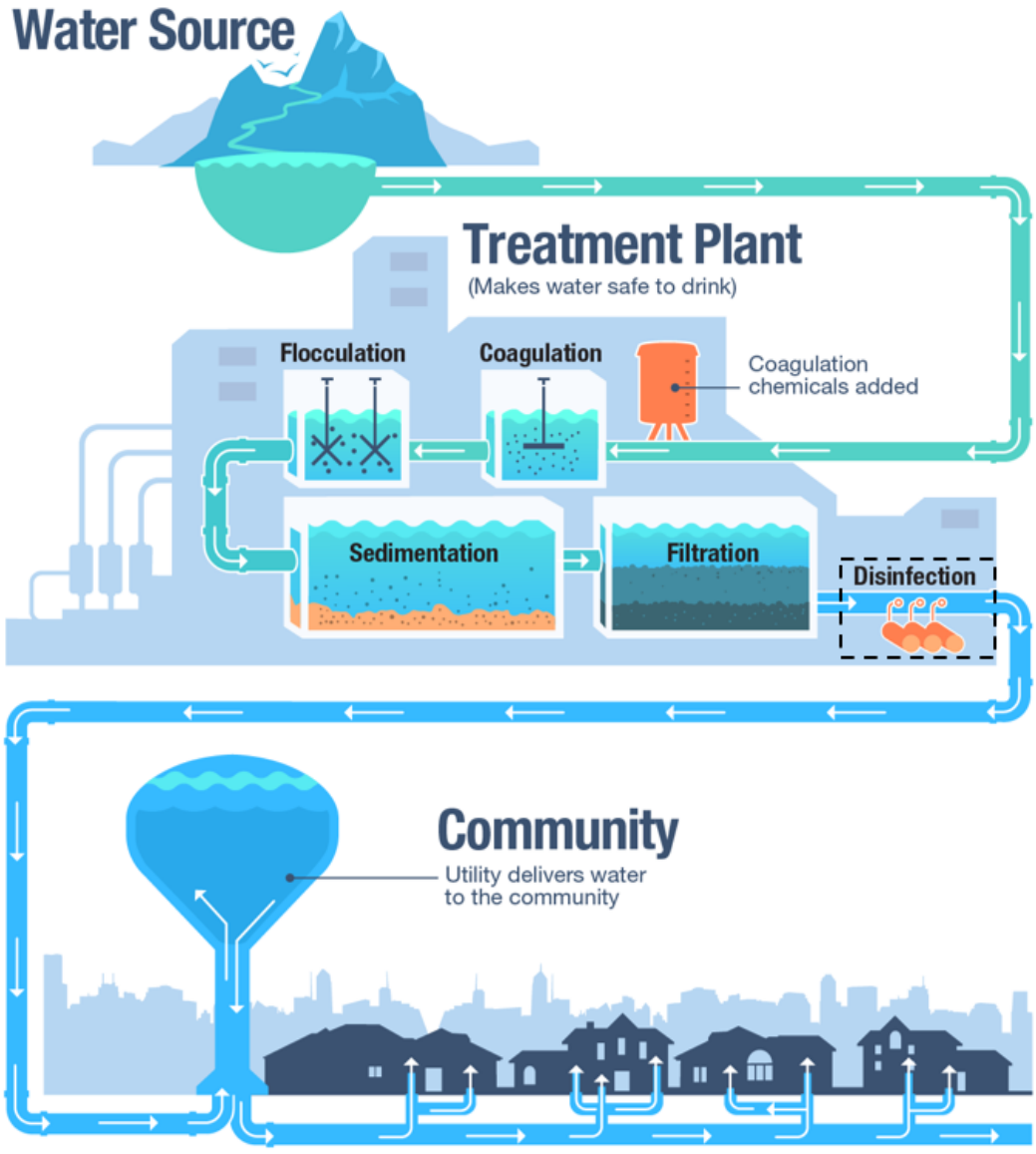

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Figure 1: Treatment steps undergone by drinking water from source to delivery to consumers highlighting the disinfection step[2]

[2] Water Treatment | Public Water Systems | Drinking Water | Healthy Water | CDC