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## **TECHNOLOGIES FOR THE CONTROL OF EMERGING CONTAMINANTS IN DRINKING WATER TREATMENT PLANTS**

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### **Abstract**

In recent years, so-called emerging contaminants (ECs) have attracted growing interest as they have been detected in reservoirs and even in drinking water. The new proposal *Drinking Water Directive* (2018) provides for the introduction of new parameters relevant to the ECs category. As these contaminants today tend to be present in a growing number of water sources, provide treatment systems that ensure compliance with regulatory limits and the protection of public health has become essential. The aim of this paper is to provide essential information on five ECs (more precisely: haloacetic acids, microcystine-LR, Perfluoro Alkylated Substances, Bisphenol-A and Nonylphenol) and to explain useful processes for their removal in a DWTPs. For each contaminant, current and future legislation, health aspects and in particular a focus of the chemical and physical removal technologies already existing and under study are reported. The effectiveness of both conventional (e.g. chemical oxidation, coagulation/flocculation, adsorption on Granular Active Carbon (GAC), ion exchange) and advanced treatments (e.g. membrane filtration, AOPs) is presented and discussed.

*Keywords:* bisphenol, haloacetic acids, microcystins, nonylphenol, PFAS

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