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## PRIORITY ORGANIC POLLUTANTS REMOVAL BY ULTRAFILTRATION FOR WASTEWATER RECYCLING

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### Abstract

Ultrafiltration (UF) represents an important option for the advanced wastewater treatment as it offers good performances from both technical and economical points of view, for the removal of suspended solids, colloids and some of the organic compounds present in different effluents. The occurrence of priority organic pollutants in wastewaters streams and the environment has raised intensive scientific debates about their effects and the possible abatement technologies. As part of a broader study regarding the use of advanced treatment technologies for the removal of priority organic pollutants from wastewaters, this paper presents some results on the performance of ultrafiltration for the removal of 4-chlorophenol and colloids from synthetic wastewaters. A laboratory scale ultrafiltration set-up fitted with 6000 MWCO polyethersulfone membranes was used for the study of UF parameters influence (pressure, mode of operation and cleaning conditions) on the removal efficiencies of two components (4-chlorophenol and colloids) present in synthetic wastewaters at different concentrations, simulating various qualities for recycling industrial effluents. The results have shown that, depending on process parameters like pressure, membrane cleaning status and initial pollutant load, it is possible to achieve removal efficiencies of up 90% for 4-chlorophenol and 100% for colloids.

*Key words:* advanced wastewater treatment technologies, 4-chlorophenol, colloids, priority organic pollutants, ultrafiltration

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