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REMOVAL OF PERSISTENT ORGANIC POLLUTANTS FROM TEXTILE WASTEWATER BY MEMBRANE PROCESSES

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Abstract

The textile industry is a large water consumer. Stringent regulations of wastewater characteristics require the use of membrane processes for the removal of persistent organic pollutants (POPs) from textile wastewater prior to discharge or recycling of these effluents.
This paper presents an overview of research related to the removal of persistent organic pollutants from textile industry by membrane processes, discussing also the correlations with actual pre-treatment and removal rates.
Aspects such as the wastewater matrix, membrane configurations, materials and modules, operational parameters and problems are presented with a clear focus on removal of POPs from textile wastewater. The particular issues related to the application of ultrafiltration, nanofiltration and reverse osmosis as advanced treatment stages are considered in correlation with the textile wastewater characteristics and removal efficiencies requirements. Combination of physico-chemical and biological treatment with membrane processes represents an efficient solution for the removal of POPs from textile wastewater.

Keywords: membrane processes, persistent organic pollutants, wastewater recycling, textile industry

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