

30.- MEDOX®, membrane bioreactor with pure oxygen

Title and name of product or technology	
MEDOX®	
Abstract	
MEDOX® is a MBR process with pure oxygen that works sequentially with oxic and anoxic cycles for nutrient removal.	
Description including main features/advantages	
<p>This technology offers as a whole the advantages from each systems, MBR, pure oxygen and oxic/anoxic cycles :</p> <ul style="list-style-type: none"> ▪ High quality effluents, free of suspended solids and with a relevant micro organisms removal. ▪ Space requirements are significantly reduced because it allows working with a very high solids concentration and removing secondary clarifiers. ▪ They allow working at high sludge retention times, producing less waste sludge, and more stabilized sludge. ▪ The utilization of pure oxygen allows transfer optimally the oxygen demand, improve the response to organic load fluctuations and reduce the stripping effect. Also allows the online estimation of the oxygen uptake rate, the oxygen transfer rate and the oxygen efficiency, which offer interesting information about the WWTP state. ▪ The utilization of anoxic/oxic cycles optimize the nutrient removal efficiency according to the wastewater fluctuations 	
Innovative aspects	
This technology offers a qualitative step forward for the biological processes as it allows working at high solids concentration, improve the oxygen transfer in the reactor and design a very flexible process for nutrient removal.	
Current and potential industrial users/domains of application	
Currently the MEDOX® technology is applied to the food, chemical and paper industry. It could be applied also to treat municipal waste water in little communities.	
Current state of development	
The MEDOX® technology is completely developed and R&D is dedicated to the optimization of its performance in terms of water quality and operational cost reduction.	
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