

39.- BIO-CEL®-MCP, chemical free mechanical cleaning of submerged membranes in a MBR

<b>Title and name of product or technology</b>	
BIO-CEL®-MCP, chemical free cleaning of MBR wastewater treatment plants	
<b>Abstract</b>	
MICRODYN-NADIR GmbH located in Wiesbaden, Germany and Darmstadt University of Technology have developed a new, environmentally friendly cleaning process for submerged membranes in membrane-bio-reactor (BIO-CEL®) applications.	
<b>Description including main features/advantages</b>	
Due to their small footprint and superior effluent quality, MBR plants are the next generation of biological wastewater treatment. The driving force for this technology is the request for cleaner, more environmentally friendly cleaning of the membrane modules. In 2005, MICRODYN-NADIR developed the first back washable flat sheet membrane. This only requires a simple pre-treatment of the feed flow and exhibits extended operation between cleaning cycles. However, even with this novel development, some chemicals are needed for intensive cleaning. The newly developed mechanical cleaning process (BIO-CEL®-MCP), which uses granulates for continuous cleaning, can now be integrated into the BIO-CEL®.	
<b>Innovative aspects</b>	
BIO-CEL®-MCP allows a chemical free operation and a more important point is a significant enhancement of the flux. The usage of the MCP is even suitable for external membrane cleaning of the fouled membranes in any condition. In terms of sustainability with this cleaning process the environment can be protected (no usage of chemicals and therefore no chemical by-products). Additionally the cost can be reduced. The granulates are staying in the BIO-CEL® basin, when sludge goes out.	
<b>Current and potential industrial users/domains of application</b>	
Chemical industry, Pharmacy, textile, food industry, communal waste water treatment etc. where biological treatment is needed and reuse is an issue and/ or a high quality of the discharge water is necessary.	
<b>Current state of development</b>	
BIO-CEL® is commercially available for different industries for treatment of bio-degradable waste water. Pilot tests were done with BIO-CEL®-MCP during 18 months on efficiency and wear off of the membrane, both test were successful. Tests are still going on.	

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