

PRESS RELEASE

Launch of Fouling-Resistant RO Membrane Supporting Water Treatment and Recovery in Industrial Manufacturing

Contributing to stable operation and reduced maintenance burden under harsh feedwater conditions

Oceanside, California, USA, September 15th, 2026

Hydranautics, a Nitto Group company, announces the launch of PRO-XR1-X-LD, a proprietary fouling-resistant reverse osmosis membrane element suitable for reusing high-difficulty wastewater generated in semiconductor, mining, and industrial manufacturing.

In recent years, the expansion of the semiconductor, mining, and industrial manufacturing sectors has led to an increase in the volume of water used in each manufacturing process. At the same time, global demand for effective use of water resources and reduction of environmental impact has continued to grow. Against the backdrop of tighter wastewater regulations, the need for technologies that enable water reuse is increasing. Reverse osmosis (RO) membranes are filtration membranes with microscopic pores that remove impurities from water and are widely used in applications such as industrial water production and wastewater reuse. Wastewater generated in industrial manufacturing processes contains many components that cause membrane fouling, such as organic matter and fine particles. Frequent membrane cleaning and replacement are therefore required to prevent deterioration in treatment performance, which increases operating costs and environmental impact.

Hydranautics' PRO series of membranes is designed to help customers with these advanced challenges. "Industrial wastewater applications are becoming more complex, and operators need membranes that can maintain performance without frequent cleaning," said Gibran Mursalin, President of Hydranautics. "This addition to the PRO series was developed with that need in mind. By helping control fouling and differential pressure while maintaining high rejection, PRO-XR1-X-LD can reduce the operational burden on RO systems, help reduce chemical and energy use, and contribute to more sustainable wastewater treatment."

Using proprietary surface coating technology combined with optimized flow channel structure, the PRO-XR1-X-LD works to inhibit the adhesion of foulants such as organic matter and colloidal particles. As a result, these features enable stable treatment performance, high impurity rejection, and efficient water recovery even in high-load wastewater applications, contributing to a reduced maintenance burden and operating costs by lowering the frequency of membrane cleaning. Through the efficient reuse of water

resources, the new product also contributes to reducing the environmental impact of the overall manufacturing process.

Nitto and Hydranautics will continue to contribute to the sustainable growth of the semiconductor, mining, and industrial manufacturing sectors and the reduction of environmental impact by providing total solutions covering pure water production, wastewater treatment, and solvent recovery.



For further information or inquiries, please contact us at hy-marketing@nitto.com

ABOUT NITTO

Since its founding in 1918, Nitto has globally provided a wide range of products and services as a high-performance materials manufacturer, including optical materials such as polarizing films used in display devices, circuit boards, industrial tapes, and medical-related products, based on its eight core technologies. Under its brand slogan, "Innovation for Customers," Nitto aims to create indispensable value for society and contribute to a sustainable global environment and a prosperous human society.

ABOUT HYDRANAUTICS

Hydranautics, a member of the Nitto Group, is a global leader in innovative membrane solutions. We provide comprehensive membrane technologies, including reverse osmosis, nanofiltration, and microfiltration, for water, wastewater, and process treatment applications. Our membrane-based solutions are utilized across seven continents in various fields such as seawater desalination, industrial high-purity water production, surface water treatment, wastewater treatment, and specialty process applications. Our Global Membrane Division is headquartered in Oceanside, CA, USA, and we operate two state-of-the-art manufacturing facilities in Oceanside and Shiga, Japan. For more information about Hydranautics, please visit our website at www.membranes.com.

Hydranautics Corporate Headquarters: 401 Jones Road, Oceanside, CA 92058, USA
Phone: +1 760 901 2500 **Fax:** +1 760 901 2578 **Email:** hy-marketing@nitto.com
Website: www.membranes.com