

Customer Testimonials

“This (SWRO) plant has been working correctly since its commissioning 15 years ago, without incrustation problems, but with good permeate quality and low-energy consumption. The anti-scaling chemical RPI-4000A is dosed with excellent results.”

Acciona Agua (2018)

“The excellent characteristics of the RPI-Series inhibitors resulted in overwhelming satisfaction among our clients, and consequently, our company could increase profits substantially.”

D. Leon Padilla, HIDROTEC (Spain)

ROPUR RPI® ANTISCALANTS

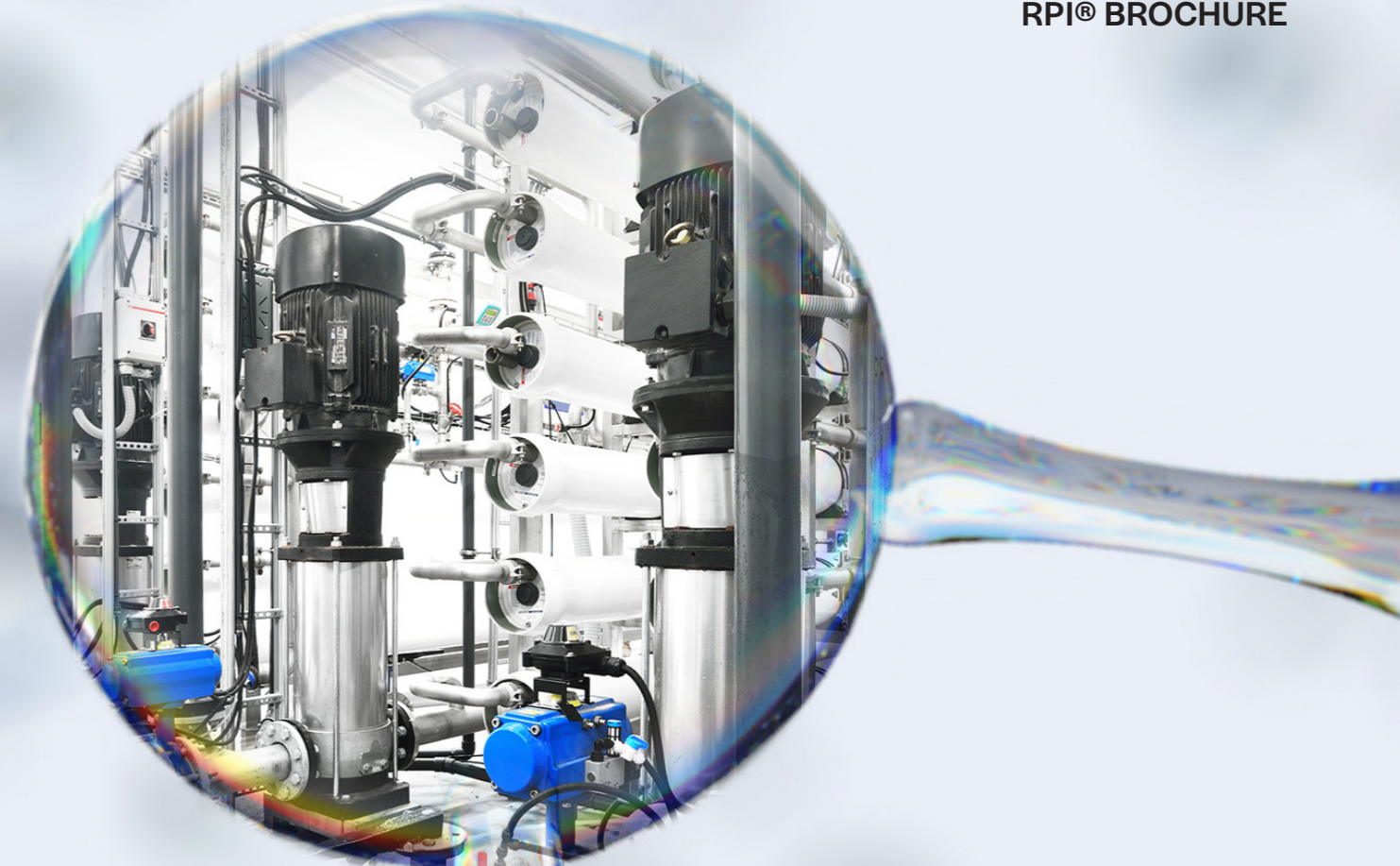
Manufactured in Germany under EN ISO-9001:2015 and 14001:2015 quality standards, ROPUR RPI® Antiscalants are formulated precisely for membrane separation processes used in water treatment applications. Based on 30 years of application know-how, ROPUR RPI® Antiscalants increase reverse osmosis system performance, stability, and reliability through unmatched efficacy and quality.

Product Availability

TMEu and authorized distributors readily stock ROPUR RPI® Antiscalants to meet the varying needs of our customers. Contact us to learn more about our network of ROPUR RPI® Antiscalants experts and distributors, and those located nearest you.

Antiscalants: WWW.ROPUR.COM

Membranes: WWW.TORAYWATER.COM



Engineered for Precision

RPI® RO Antiscalants

TORAY MEMBRANE EUROPE AG

TORAY Innovation by Chemistry

TORAY MEMBRANE EUROPE AG

Grabenackerstrasse 8b, P.O. Box, 4142 Muenchenstein 1, Switzerland
t +41-61-415-8710 | f +41-61-415-8720 | e info@toraywater.com

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For corporate information please visit www.toray.com

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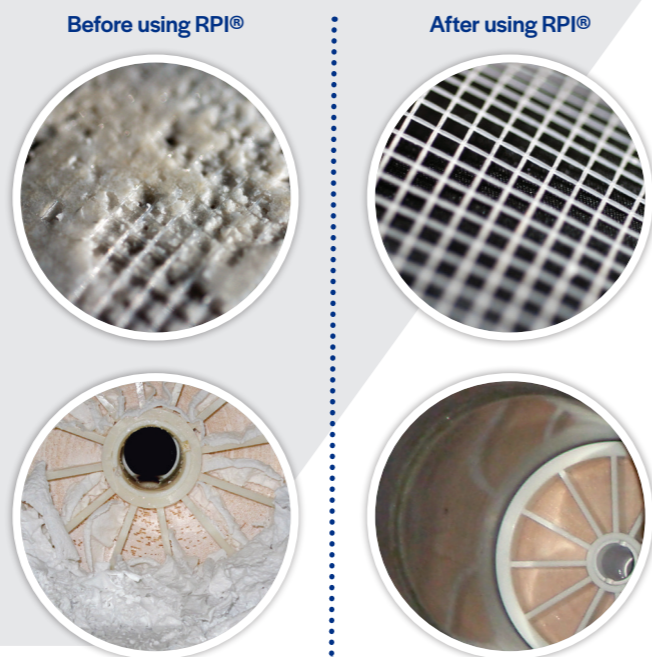
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ROPUR RPI® Antiscalants

ROPUR RPI® Antiscalants provide superior scale control, dispersing capabilities and extensive compatibility with polyamide membranes and standard chemicals used for water treatment. Globally accepted and helping to optimize the operations of numerous drinking water membrane systems, we support plant design engineers, OEMs, and end-users. ROPUR RPI® Antiscalants are **Engineered for Precision.**

Key Advantages of Using ROPUR RPI®

- Typically 40% less OPEX vs. other solutions
- Safe operation at high-recovery achievable
- Reduces system downtime and cleaning frequencies
- Effective in low doses and has extended shelf-life to help cut costs associated with logistics and inventory
- Adjusted pH and environmentally-friendly composition makes RPI products safe to store and easy to handle
- Manufactured at facilities registered under ISO 9001:2015 and ISO 14001:2015 to deliver consistency in high-quality performance
- Compliant with country-specific regulations



SERVICES & SUPPORT Our team of highly qualified engineers provides users with advanced technical support and exceptional customer service:

RPI Calc® Antiscalant Selector & Online Dosing Calculator

- › 24/7 access to the **RPI Calc® dosing calculation platform** is available to help you predict the precise antiscalant dosage and optimize your RO plant, anytime, anywhere. Driven by years of scientific research and application studies, ask us about how we used RPI Calc® and ROPUR RPI® Antiscalants to achieve the highest standards in preventing one of the toughest scaling conditions (Silicate).
- › Because each RO application is unique in water chemistry and fluid dynamics, determining the ideal antiscalant requires a comprehensive water analysis. We help review the data available to identify which ROPUR RPI® Antiscalant will work best and in what doses.

Membrane Autopsy

- › We evaluate the root cause behind fluctuations or declines in plant performance through membrane autopsies. The autopsy will reveal the type of foulant (particle, bio or mineral scalant), any physical or chemical damage to the active membrane layer, and ultimately the suitable antiscalant.

Plant Evaluation

- › ROPUR consists of a team of experts rich in decades of membrane and antiscalant synergistic experience, who can review RO plant PID and diagnose why a plant might perform below its expected capacity.



Certified to NSF/ANSI 60

Check which ROPUR RPI® products are certified for drinking water

ROPUR RPI® ANTISCALANT TABLE

BW = Brackish Water, SW=Sea Water
 ● Excellent ● Very Good ◐ Good ◑ Limited

Product	RPI 2000*	RPI 2800	RPI 3000A*	RPI 4000A*	RPI 4500A	RPI 4900*	RPI 5000A ¹	RPI 6000 ²	RPI 7000 ³
Water type	BW/SW	SW	BW/SW	BW	BW	BW/SW	BW	BW	BW
Risk type									
CaCO ₃	●	●	●	●	●	●	◐	◐	●
CaSO ₄	◐	◐	●	●	●	◐	◐	●	◐
BaSO ₄ / SrSO ₄	◐	◐	●	●	●	◐	◐	◐	◐
SiO ₂ · (H ₂ O) _x	◐	◐	◐	◐	◐	◐	●	◐	◐
CaF ₂	◐	◐	◐	◐	◐	◐	◐	◐	◐
Ca ₃ (PO ₄) ₂	◐	◐	◐	◐	◐	◐	◐	◐	●
Fouling Inhibition	●	●	◐	◐	◐	◐	◐	◐	◐
Fe/Mn/Al/Cu/Co	◐	◐	●	●	●	◐	◐	◐	●

*Certified by NSF to NSF/ANSI Standard 60

¹Highly effective on poorly soluble Silica mineral agglomerates (CaMgSiO₃)

²Allows saturation of up to 15,000 ppm of CaSO₄

³High-performance scale inhibitor designed for Ca₃(PO₄)₂ and Iron/Manganese oxides

All RPI antiscalants fulfill the European regulations UNE-EN 15039:2007 and UNE-EN 15040:2007, and respect the regulations of local state and federal environmental agencies.

HOW IT WORKS Scale inhibitors function based on one or more of the following mechanisms, in which they interfere with the crystal growth stages of the mineral scalant:

- 1. Threshold effect:** Sub-stoichiometric amounts of the inhibitor prevent the precipitation of salts that have exceeded their solubility product.
- 2. Crystal distortion effect:** Interference in normal crystal growth produces an irregular crystal structure, resulting in poor scale-forming ability.
- 3. Dispersancy effect:** The inhibitor creates electrostatic charges onto the crystal structure, which causes the tiny crystals to repel each other.

Graphs indicating the concentration limits with ROPUR RPI® Antiscalants

