



**□ - BASF**

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**Sokalan<sup>®</sup> RO 3500**

Ensure reliable operation  
of your RO plant

# Sokalan® RO 3500, specialty antiscalant designed for RO membrane applications

Sokalan® RO 3500 is a multifunctional antiscalant for RO membranes allowing operations at high recovery rates from various feed water sources such as seawater, brackish water, surface water and waste water.

- ✓ Keeps the membrane surface free from any scale deposit
- ✓ Helps maximizing the production capacity while enhancing the energy footprint of the plant
- ✓ Is compatible with key RO membranes from leading manufacturers



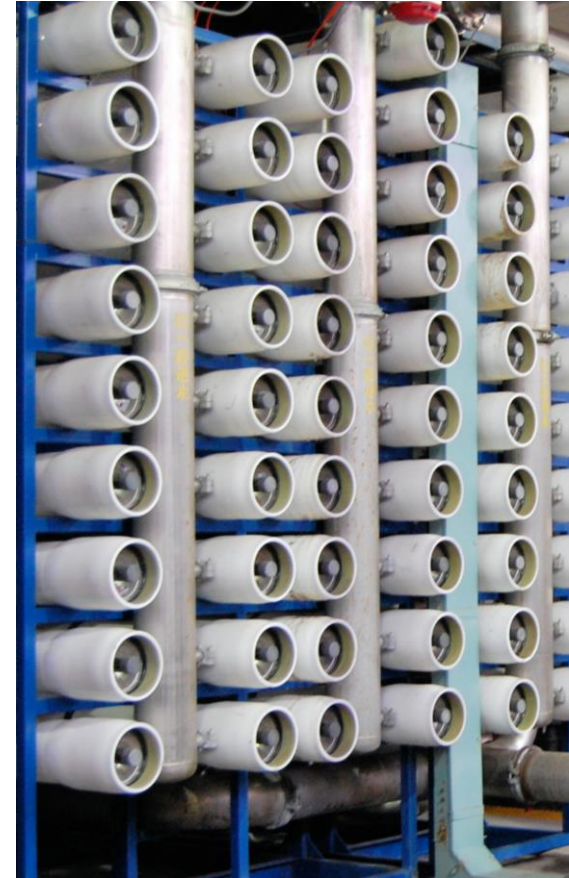
# Sokalan® RO 3500 is compatible with key RO membranes

*“The success of a reverse osmosis system depends upon membrane life and performance, which is directly impacted by the efficiency of the antiscalant”*

**Karine Odier – Global Industry Marketing BASF Water Chemicals**

## Excellent membrane compatibility

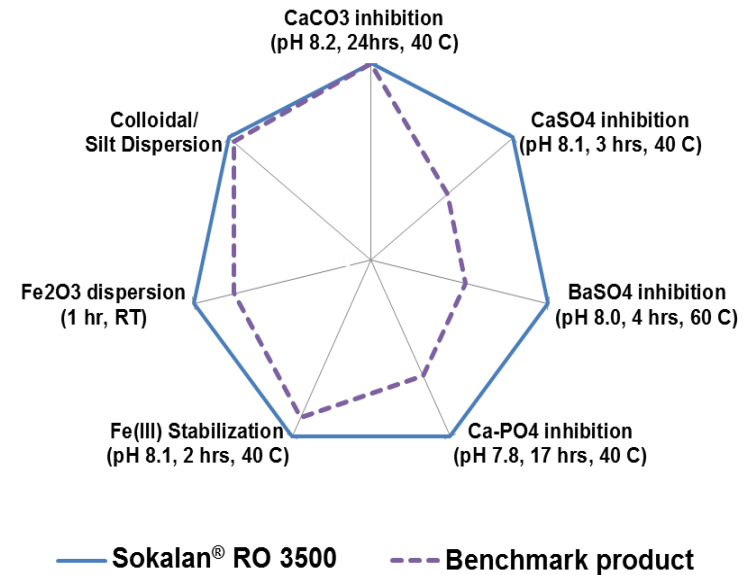
- Membrane compatibility has been tested on the most commonly used reverse osmosis (RO) membranes
- Certified by *Hydranautics* and *LG NanoH2O*
- Advanced application tests have been conducted in BASF on reverse osmosis membranes of *DOW* and *Toray*



# Sokalan® RO 3500 offers excellent performance against different scale potentials

## Tested at harsh conditions

- Outperforms benchmark product in CaSO<sub>4</sub>, BaSO<sub>4</sub> and Ca-PO<sub>4</sub> inhibitions
- Excellent iron control properties
- Performs at the same level as polymaleate/ phosphonate blend in CaCO<sub>3</sub> inhibition



In addition, due to its *low phosphorous* content, Sokalan® RO 3500 is *environmental beneficial* compared to phosphonate based antiscalants and does not contribute to the *eutrophication* of water bodies.

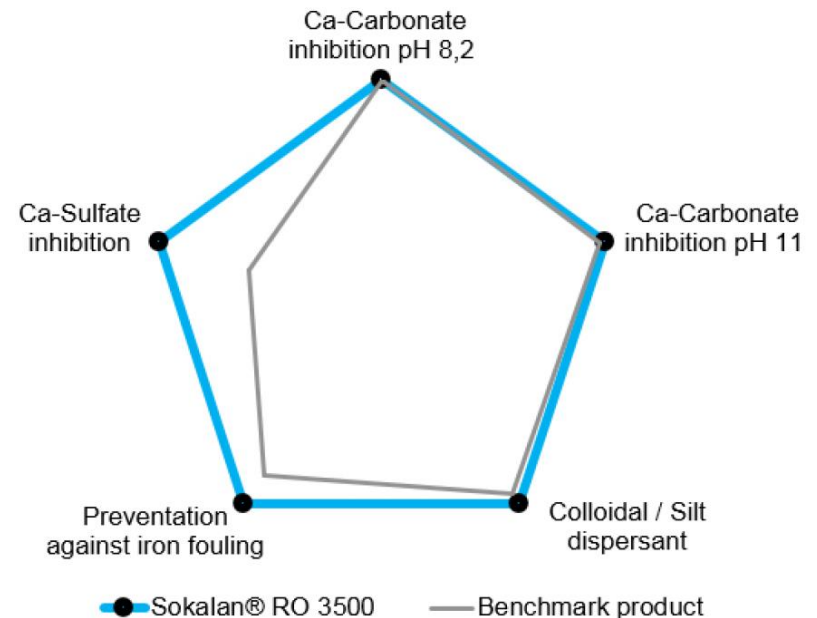
# Reliable and efficient water reuse operations with Sokalan® RO 3500

Sokalan® RO 3500 provides excellent inhibition against scaling and fouling caused by:

- Calcium carbonate ( $\text{CaCO}_3$ )
- Calcium sulfate ( $\text{CaSO}_4$ )
- Barium sulfate ( $\text{BaSO}_4$ )
- Calcium difluoride ( $\text{CaF}_2$ )
- Calcium phosphate
- Iron

It shows superior performance compared to phosphonates which are used for RO membrane processes.

## Multifunctional antiscalant to handle multiple scale potentials

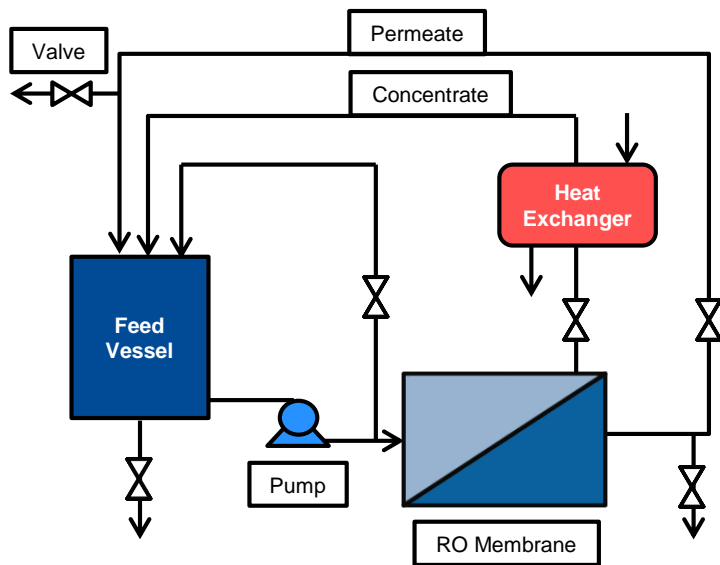


\*BASF Internal Test Methods

# Better iron fouling inhibition with Sokalan® RO 3500

## Test Conditions

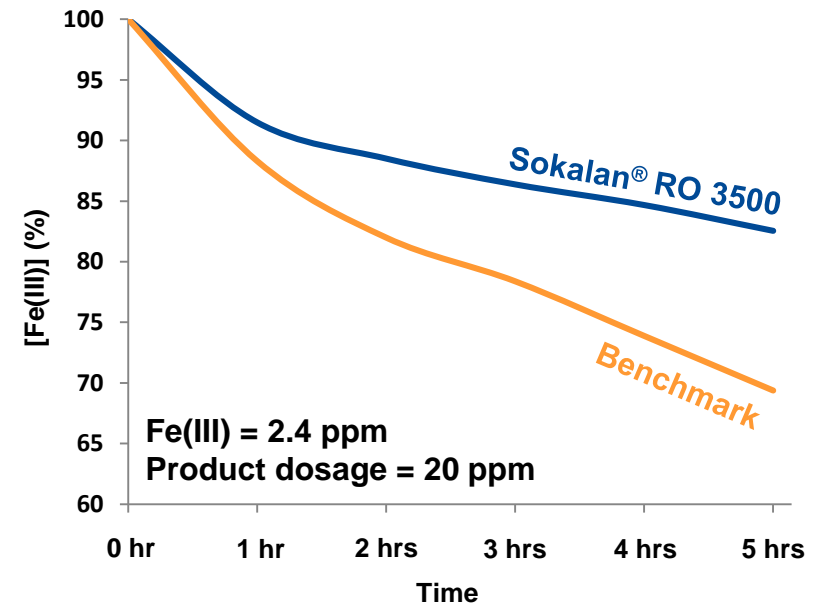
### Permeate Recirculation



- The feedwater is a synthetic water imitating brackish water from Western Australia
- Permeate and concentrate are recirculated back to feed vessel to maintain water recovery rate of 60%

## Test Results

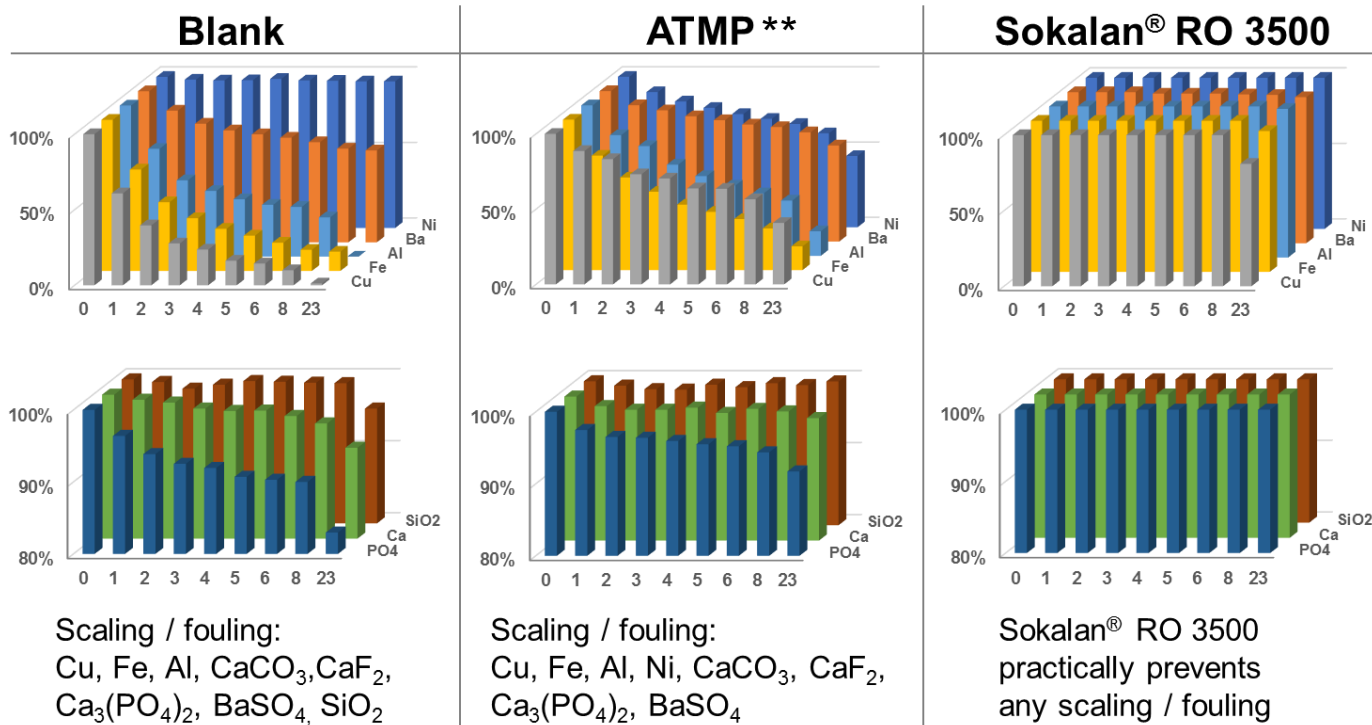
### Ferric Ion Precipitation



- The precipitation rate of ferric ion is slower with Sokalan® RO 3500 compared to industrial benchmark

# Sokalan® RO 3500 tested in synthetic wastewater\*

Sokalan® RO 3500, kept the scaling and fouling forming ions soluble in the super-saturated test solution (100% represent the best performance and no scale formation)



Y axis = Percentage of ion remain soluble in the solution, X axis = time (hour)

\* ICP-AES (Inductively Coupled Plasma Atomic Emission Spectroscopy) analysis of the bulk solution simulating a typical RO brine composition of wastewater in Singapore at 74.5% recovery rate.

\*\* Amino Trimethylene Phosphonic Acid

# Sokalan<sup>®</sup> RO 3500 key properties and benefits

Sokalan<sup>®</sup> RO 3500 is a true multifunctional antiscalant with its proven performance on various scales, different feed water compositions and plant operating conditions.



## Sustainable

- Very low phosphorous content (< 50 µg P/L vs. 1500 µg P/L for ATMP\* @ 5 ppm dose & 75% recovery rate)
- NSF/ANSI 60 Standard certified
- No eutrophication of water bodies



## Efficient

- Ideal for water reuse/tertiary effluent application
- Improving water recovery
- Compatible with major available RO membranes
- Excellent ferric stabilization
- Reduced cleaning frequency

\*Amino Trimethylene Phosphonic Acid



# Want to know more about Sokalan® RO 3500?

***Get in contact with us for more information on BASF Water Chemicals***

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