Every drop counts:

Sokalan® RO

Additives for Membrane Processes
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Sokalan® RO
Additives for Membrane Processes

Key Benefits

- Outstanding scale-inhibiting performance
- Compatibility with major available membranes
- Low environmental impact (no phosphorus content or low phosphorus content in the products)
- Longer operation time of RO desalination plants without cleaning
- Reduced production costs and higher output
- High-quality products and reliable supply from BASF – the world’s leading chemical company

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
<th>Calcium carbonate inhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sokalan® RO 100</td>
<td>Broad-spectrum scale inhibitor for line operation at high recovery rates</td>
<td>☐</td>
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<tr>
<td>Sokalan® RO 400</td>
<td>Phosphorus-free broad-spectrum premium scale inhibitor for line operation at high recovery rates</td>
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- **excellent performance**
- **good performance**

**NSF Approvals:**
- Sokalan® RO 100
- Sokalan® RO 400
- Sokalan® RO 1000
- Others upon request

**Ecotoxicological properties:**
- Is not acutely toxic to aquatic organisms

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Scanning electron micrograph (SEM) pictures of RO membrane
**Understanding Scale Mechanism**

Hydrated precursors (formed from supersaturated \(Ca^{2+}/CO_{3}^{2-}\))

Nano-sized amorphous precursors

Sokalan® inhibits scale formation by colloidal stabilization of precursors.

BASF’s global headquarters at Ludwigshafen, Germany

- The world’s largest integrated chemical complex
- More than 8,000 high-value products manufactured in an integrated network of 200 chemical plants
- Production site for antiscalants and defoamer

BASF runs the biggest R&D site worldwide

- 8,900 researchers
- Cutting-edge R&D resources
- Specialized in scale inhibition and foam suppression
- Cooperations with universities worldwide
Safety
We know of no ill effects that could have resulted from using our products for the purpose for which they are intended and from processing them in accordance with current practice. According to the experience we have gained up to now and other information at our disposal, our products do not exert any harmful effects on health, provided that they are used properly, due attention is given to the precautions necessary for handling chemicals, and the information and advice given in our safety data sheet are observed.

Labeling
Details about the classification and labeling of our products and further advice on safe handling are contained in the current safety data sheets.

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BASF boosts your desalination plant!

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BASF runs the biggest
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<th>Silica inhibition</th>
<th>Calcium/ phosphorus dispersant</th>
<th>Prevention against iron fouling</th>
<th>Phosphorus free</th>
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<td>Sokalan® RO 100</td>
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**Ecotoxicological properties:**

- **Is not acutely toxic to aquatic organisms**

---

**Understanding Scale Mechanism**

- Hydrated precursors (formed from super-saturated Ca\(^{2+}\)/CO\(_3\)\(^{2−}\)
- Calcium carbonate inhibition inhibits scale formation by recrystallization and dissolution
- Calcium/sulfate inhibition inhibits scale formation by aggregation/dissolution
- Silica inhibition inhibits scale formation by aggregation/dissolution
- Vaterite colloidal/precipitate formation
- Calcium/colloidal stabilization of precursors

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**Picture of RO membrane unit**

**Scanning electron micrograph (SEM) pictures of RO membrane**

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**Product Benchmark**

- Co-sulfate inhibitor
- Co-carbonate inhibitor
- Prevention against iron fouling
- Membrane compatibility
- Colloidal/ 2H dispersant

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Wagner, J.; Fischer, T.; De, G.H.; Heunemann, W.; Schmidt, C.; Thöme, J. 