

**PERFORMANCE BENEFITS:**

- A specialized blend of proprietary buffers, low foaming surfactants and chelants to speed the dissolution of sulfate scale.
- Highly buffered to resist pH changes during the cleaning process.
- Compatible with polyamide membranes from all major manufacturers.
- Suitable for use with other Avista cleaners.

RoClean L811 liquid is a multicomponent, high pH buffered cleaner formulated to remove sulfate scales including barium, strontium and calcium sulfate from reverse osmosis (RO) and nanofiltration (NF) membranes.

This product is temperature compensated to ensure that the cleaning solution remains in the effective pH range regardless of variations in solution temperature.

**INSTRUCTIONS FOR USE**
**Cleaning**

Below is a summary of the RoClean L811 cleaning procedure. For more detail, please refer to our technical bulletin, "Cleaning Spiral Wound Membrane Elements."

1. Fill the cleaning tank to the desired volume with RO permeate or deionized water. Heat the solution to the maximum acceptable temperature (according to the membrane manufacturer's guidelines), as this will dramatically increase cleaning efficiency. Add sufficient RoClean L811 to create a 2% wt/wt solution if the fouling is moderate to severe or a 1% wt/wt solution if the fouling is mild. Recirculate the solution through the cleaning tank to ensure adequate mixing.
2. Run the cleaning solution through each RO system stage, one at a time, for a minimum of 60 minutes at the flow rate recommended by the membrane manufacturer. If that rate is not known, use these guidelines:

Element Diameter, inches	Flow Rate per Vessel, gpm (m <sup>3</sup> /hr)
4	10 (2.4)
8	40 (9.0)

3. If the membranes are heavily fouled and the recirculated cleaning solution becomes discolored or turbid, discard as much as 15% of the solution volume. Heavily fouled elements may also benefit from a soaking period (up to 8 hours).
4. Monitor the pH of the solution during the cleaning process. If the pH remains in the desired range and the solution is not turbid, it may be used to clean subsequent stages. In the unlikely event that the pH falls, prepare a new batch and repeat steps 1-4.
5. When cleaning is complete, rinse the membranes by flushing RO permeate through each pressure vessel. The system can then be returned to service.

Please consult your sales representative for further technical or logistical details and always review the SDS before use to ensure suitable safety precautions are followed.

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**PRODUCT INFORMATION**
**Packaging and Storage**

Standard regional pack sizes are listed below. Information on drumless or bulk tanker delivery is available on request.

**SPECIFICATIONS**

<b>Appearance:</b> Clear amber liquid
<b>pH (2% solution):</b> 10.0-11.5
<b>Specific Gravity (@25°C):</b> 1.2-1.3

PACKAGING FORMAT	AMERICAS/ ASIA	EMEA
Pail	45 lb	20 kg
Drum	500 lb	200 kg
IBC tote	2500 lb	-