

**PERFORMANCE BENEFITS:**

- A specialized blend of proprietary buffers, low foaming surfactants and chelants to dissolve organic foulants and disperse colloidal particles.
- 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.

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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.

**CORPORATE OFFICES**

Avista Technologies, Inc.


 Certified to  
 NSF/ANSI 60

Avista Technologies (UK) Ltd

RoClean L211 is a liquid multicomponent, high pH buffered, low foaming cleaner formulated to remove colloidal silica, clay, organic color and bioslime from reverse osmosis (RO) membranes. This cleaner is successfully applied to systems operating on seawater, brackish water and waste water where liquid cleaner is preferred. RoClean L211 is a highly effective foulant remover but gentle enough for daily application if required. RoClean L211 is certified by NSF International under NSF/ANSI Standard 60 for use as an offline cleaner in drinking water systems.

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

Below is a summary of the RoClean L211 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 L211 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.

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

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

**SPECIFICATIONS**
**Appearance:** Clear, colorless to amber liquid

**pH (2% solution):** 10.5-11.5

**Specific Gravity (@25°C):** 1.05-1.20

PACKAGING FORMAT	AMERICAS/ ASIA	EMEA
Pail	45 lb	20 kg
Drum	500 lb	200 kg
IBC tote	2375 lb	-