

Performance:

RoClean L211 offers an array of performance benefits:

- Contains a proprietary blend of buffers, low foaming surfactants and chelants to dissolve **organic foulants** and disperse **colloidal particles**.
- Compatible with the thinfilm (polyamide) elements of all the major membrane manufacturers.
- NSF Certified for off-line use in systems producing drinking water.
- Highly buffered to resist pH changes during the cleaning process.
- Superior results, especially when compared to generic cleaners.
- Can be used in conjunction with other applicable cleaners as shown in the Avista cleaner selection guide.
- Temperature compensated to maintain optimum pH over a wide temperature range.

RoClean L211 is a high pH, low foaming liquid cleaner formulated to remove silt and organic foulants such as colloidal silica, clays, organic color, and bacterial slime from spiral wound thinfilm elements.

RoClean L211 is highly buffered to resist pH changes during the cleaning process and it contains a proprietary blend of buffers, low foaming surfactants and chelants to dissolve organic foulants and disperse colloidal particles.

Use Instructions:

Below is a summary of the RoClean L211 cleaning guidelines. For detailed procedures, please consult the Avista technical bulletin entitled "Cleaning of Spiral Wound Membrane Systems".

1. Fill the cleaning tank to the desired volume with RO permeate or DI water. Heat the solution to 50°C or maximum acceptable temperature (see membrane manufacturer guidelines) as this will dramatically increase the cleaning efficiency. Add sufficient RoClean L211 to create a 2% wt/wt solution if the fouling is moderate/severe or 1% if the fouling is mild. Recycle the solution through the cleaning tank to ensure adequate mixing.

2. Recirculate 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 the guidelines listed below:

| Element Diameter | Flowrate per Vessel, gpm (m ³ /hr) |
|------------------|---|
| 4" | 10 (2.4) |
| 8" | 40 (9) |

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 soak period (up to 8 hours).

4. Monitor the pH of the solution during the cleaning process. If the pH remains in the desired range of 10.5 and the solution is not turbid, it may be used to clean subsequent stages. In the unlikely event that the pH falls below 10, prepare a new batch and repeat steps 1-4.

5. When the clean is completed, rinse the membranes by recirculating RO permeate through each pressure vessel. To comply with NSF standards, the cleaner should be flushed out using 5 bed/volumes of water before putting the system back on-line.

Packaging and Storage:

Standard regional pack sizes are listed below. Custom packaging can be provided worldwide to meet customer needs. Information on drumless or bulk tanker delivery is available on request.

| Specifications | |
|---------------------|--------------|
| Appearance: | Amber liquid |
| pH (2% solution): | 10.5 - 11.5 |
| Density (kg/litre): | 1.05 - 1.2 |

| Packaging Formats | Americas | EMEA |
|-------------------|----------|--------|
| Pails | 45 lbs | 20 kg |
| Drums | 500 lbs | 200 kg |
| IBC's (totebins) | 2375 lbs | - |



DRINKING WATER TREATMENT ADDITIVES CLASSIFIED BY NATIONAL SANITATION FOUNDATION,® TO ANSI/NSF 60 ON OCTOBER 2007 AS STANDARD DRINKING WATER TREATMENT CHEMICAL FOR USE OFF-LINE IN REVERSE OSMOSIS SYSTEMS.

Certified to NSF/ANSI 60



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Avista Technologies, Inc.
Phone: + 1 760 744 0536
Info@avistatech.com

Avista Technologies (UK) Ltd.
Phone: + 44 131 449 6677
Info@avistatech.co.uk