

### PERFORMANCE BENEFITS:

- A specialized blend of buffers, chelants and reducing agents to dissolve metal deposits.
- Effective low pH cleaner for scale removal and highly buffered to resist pH changes during the cleaning process.
- Compatible with polyamide and cellulose acetate membranes from all major manufacturers.
- Suitable for use with other Avista cleaners to remove combination foulants.

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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.



Avista Technologies (UK) Ltd

## RoClean L403

CLEANER

RO/NF

RoClean L403 liquid is a multicomponent, low pH cleaner formulated to remove metal foulants and calcium carbonate scale from membranes. This cleaner is effective against iron, manganese and aluminum and is successful when applied to all acid removable scales and foulants. RoClean 403 is the premium product for systems operating on seawater, brackish water and waste water.

RoClean L403 is certified by NSF International under NSF/ANSI Standard 60 for use as an off-line cleaner in drinking water systems.

### INSTRUCTIONS FOR USE

#### Cleaning

Below is a summary of the RoClean L403 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 reverse osmosis (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 L403 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 rises, 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): 2.5-3.5                    |
| Specific Gravity (@25°C): 1.3-1.4            |

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