

PERFORMANCE BENEFITS:

- Contains a proprietary blend of buffers, chelants, and odorless reducing agents to promote the dissolution of metal deposits.
- Superior results in the removal of iron, manganese, aluminum, metal-organic complexes, clays and colloidal material metals and calcium carbonate scale, especially when compared to generic citric and hydrochloric acid solutions
- Highly buffered to resist pH changes during the cleaning process.
- Compatible with polyamide and cellulose acetate membranes.
- Suitable for use with other Avista cleaners.

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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RoClean® P903

CLEANER

RO/NF

RoClean P903 is a low pH powdered cleaner designed to remove iron, manganese, aluminum, metal-organic complexes, clays and colloidal material from reverse osmosis (RO) membranes. It is fast acting and buffered to resist pH changes during cleaning. Additionally, it contains dispersants and chelating agents that suspend colloidal material and metallic complexes in solution to prevent redepositing. Compared to other marketed metal cleaners, RoClean P903 does not contain any materials that could emit noxious odors.

RoClean P903 has been certified by NSF International under NSF/ANSI Standard 60 for use as an off-line cleaner in drinking water systems.

INSTRUCTIONS FOR USE

Storage

Below is a summary of the RoClean P903 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 deionized water. Heat the solution to the maximum acceptable temperature (see membrane manufacturer guidelines), as this will dramatically increase cleaning efficiency. Add sufficient RoClean P903 to create a 2% wt/wt solution if the fouling is moderate to severe or a 1% 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 the guidelines:

Element Diameter, inches	Flow Rate per Vessel, gpm (m3/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: White powder
pH (2% solution): 2.5 - 3.5

PACKAGING FORMAT	AMERICAS /ASIA	EMEA
Pail	45 lb	20 kg
Carboy	90 lb	-
Drum	350 lb	-