RoClean P111

NSF Certified

High pH RO Membrane Cleaner - Powder

Performance:

RoClean P111 offers a variety of performance benefits:

* Compatible with the thin film (polyamide) elements of all major membrane manufacturers.

* NSF Certified for off-line use in systems producing drinking water.

* Superior results in the removal of organic and colloidal foulants, especially when compared to generic solutions.

* Contains a specialized blend of buffers to dissolve organic foulants and disperse colloidal particles.

* Highly buffered to resist pH changes during the cleaning process.

* Temperature compensated to maintain optimum pH over a wide temperature range.

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RoClean P111 is a powdered cleaner designed to remove silt and organic foulants such as colloidal silica, clays, organic color and bacterial slime from spiral wound thinfilm elements. This formulation is temperature compensated to ensure that the cleaning solution remains in the effective pH range regardless of variations in solution temperature.

RoClean P111 has been certified by the National Sanitation Foundation under ANSI/NSF Standard 60 for use as an off-line cleaner in drinking water systems. To comply with NSF standards, the cleaner should be flushed with 5 bed/volumes of water before putting the system back on-line.

Use Instructions:

Below is a summary of the RoClean P111 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 (this will dramatically increase the cleaning efficiency). Add the RoClean P111 to the tank at a rate of 8.5 pounds per 50 gallons of water. 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 (Inches)	Flowrate per Vessel GPM (LPM)
4	10 (38)
6	23 (87)
8	40 (151)

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 (at 50°C) and the solution is not turbid, it may be used to clean subsequent stages. In the unlikely event that the pH falls below 10.5, 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. The system can then be returned to service.

Dilution:

For moderate to severe fouling, RoClean P111 should be mixed at a rate of 8.5 pounds of chemical to 50 gallons of water. For milder fouling, a dilution of 4.3 pounds of chemical to 50 gallons of water may be sufficient.

Packaging:

RoClean P111 is available in 45-pound pails or 90-pound carboys or 350-pound fiber drums.

Properties:

Appearance:	White, free flowing powder
pH:	10.5 – 11.8 (2% solution at 25°C)

NSF Certified to NSF/ANSI 60

DRINKING WATER TREATMENT ADDITIVES CLASSIFIED BY NATIONAL SANTATION FOUNDATION.® TO ANSI/NSF 60 ON SEPTEMBER, 2004 AS STANDARD DRINKING WATER TREATMENT CHEMICAL FOR USE IN REVERSE OSMOSIS SYSTEMS.