

Performance:

AvistaClean® P312 offers an array of performance benefits:

- Specifically formulated to clean membrane surfaces and reduce high differential pressures in reverse osmosis systems.
- Compatible with the thin film (polyamide) elements of all major membrane manufacturers.
- Contains a blend of proprietary biodispersants.
- NSF Certified for off-line use in systems producing drinking water.
- Contains a specialized blend of buffers to dissolve organic foulants and disperse colloidal particles.
- Highly buffered to resist pH changes during the cleaning process.
- Superior results in the removal of organic and colloidal foulants, especially when compared to generic solutions.
- Temperature compensated to maintain optimum pH over a wide temperature range.

AvistaClean® P312 has been developed to effectively clean membrane surfaces and reduce high pressure differentials in reverse osmosis (RO) systems. The formulation includes proprietary biodispersants to remove silt and organic foulants such as colloidal silica, clays, organic color and bacterial slime from spiral wound polyamide membrane elements.

AvistaClean P312 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 five system volumes of water before putting the system back on line.

Use Instructions:

Below is a summary of the AvistaClean P312 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 the maximum acceptable temperature (see membrane manufacturer guidelines) as this will dramatically increase the cleaning efficiency. Add sufficient AvistaClean P312 to create a 2% wt/wt solution if the fouling is moderate to severe (8.5 lbs cleaner to 50 gallons of water) 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 (m3/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 11.8 – 12.4 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.

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:	White powder
pH (2% solution):	11.8 to 12.4
Density (kg/litre):	

Packaging Formats	Americas	EMEA
Pails	45 lbs	20 kg
Fiber Carboys	100 lbs	-
Fibre Drums	350 lbs	-



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

