

Minnicare® Cold Sterilant

Application Notes: Reverse Osmosis (RO) Membrane Sanitizing

The purpose of this Application Note is to demonstrate how RO operators can effectively sanitize their entire RO machine with an emphasis on the membranes. Minncare Cold Sterilant may be used in RO systems that are compatible with dilute hydrogen peroxide solutions. The RO manufacturer should be consulted before using Minncare Cold Sterilant to determine the temperature and pH range acceptable for the particular membranes. At a 100X dilution (1% concentration), the pH range for Minncare is 3.0-3.5.

RO water systems vary in design according to the particular needs of the user. Because of the variation in materials for construction at different facilities, some systems may have components such as pumps and gaskets that are not compatible with long term exposure to Minncare. Minncare is mildly corrosive to copper, brass, iron and certain other metals. Minncare has also exhibited an effect on latex and Buna-N with extended exposure. Minncare Cold Sterilant has been found compatible with typical system materials such as stainless steel. It is also compatible with polypropylene, high density polyethylene, polysulfone, polytetrafluoroethylene (PTFE), polycarbonate, neoprene, ABS, nylon, acrylic silicone, plexiglass, ethylene propylene, Viton®, and fluorel.



Procedure

All RO water systems do not contain the same components, due to the uniqueness of each RO water system design and construction, as well as, the quality of raw feed water. All or portions of the following procedure may be used for sanitizing, depending on the particular system. Use of a Clean-In-Place pump is recommended for both cleaning and sanitizing procedures.

1. Mineral deposits should be removed with Minnclean® AC acidic cleaner prior to sanitizing of the membrane. Follow the membrane manufacturer's recommended cleaning procedure; then flush the unit with RO permeate (product water). The presence of iron or other transition metals in conjunction with the hydrogen peroxide in Minncare could cause membrane degradation.
2. Biologic or organic fouling of the membrane or other parts of the system should be removed with Minnclean® TF Membrane cleaner. It is important to follow the membrane manufacturer's recommended cleaning procedure. After cleaning, flush the system with RO permeate.

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Procedure (cont.)

3. Prepare a 1% solution by adding 1 part Minncare Cold Sterilant to 99 parts permeate water. Fill the entire water circuit to be sanitized with the 1% solution and allow the diluted solution to reach a minimum temperature of 20°C (68°F). Do not exceed the membrane manufacturer’s recommended temperature.
4. Recirculate the 1% Minncare solution until the entire system is filled. Check concentration levels by using Minncare® 1% Test Strips.
5. Allow the elements to soak in the 1% Minncare solution for a minimum of 36 minutes at 20°C (68°F) to a maximum contact time of 12 hours per sanitization. Contact time should be based on the bacterial load in the RO system.
6. Rinse the RO system and check for residuals using Minncare Residual Test Strips. Follow the directions on the Minncare Residual Test Strip label. The residual test strip should indicate less than 2 ppm. Rinse times will vary depending on the size of the RO system.

Notes:

1. It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
2. Refer to package insert for complete Precautionary Statements and Directions for Use.

Minncare Cold Sterilant has a shelf-life of at least one year. Refer to the product label for shelf-life of a specific lot.

Warning: Minncare should not be stored at its 1% use dilution because this will compromise its effective concentration.

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