

## DISINFECTING MEMBRANES AND SYSTEM WITH PS-77\*

Hydrogen peroxide (PS-77\*) is used for disinfecting reverse osmosis systems and thin-film composite membranes. Two factors greatly influence the rate of hydrogen peroxide attack on the membrane: 1) Temperature, and 2) Iron.

### Temperature:

The disinfecting solution should not exceed 77 °F (25 °C). Thin-film composite membranes tested at temperatures higher than 77 °F showed decreased salt rejection over a period of time. The higher the temperature, the faster the decrease occurs.

### Iron:

The presence of iron or other transition metals in association with hydrogen peroxide will catalyze membrane degradation.

### Disinfecting Procedure for SYSTEMS:

1. Clean the system with AM-22 or AM-23\*. AM-22 or AM-23\* will remove deposits in the system which harbors microorganisms. After cleaning, flush the system with RO permeate.
2. Clean the system with AM-11 or hydrochloric acid (pH = 3) to remove iron and other transition metals. After cleaning, flush the system with RO permeate.
3. Circulate a solution of 0.2% PS-77\* through the system with RO permeate for 30 minutes, at a temperature not to exceed 77 degrees F. Adjust the pH to 3 using hydrochloric acid. **Do NOT exceed this concentration or the membranes will be damaged.**
4. Allow the system to soak in the disinfecting solution for 2-12 hours. A soak-time of 2 hours will kill more than 90% of the bacteria, whereas a 12 hours soak will kill 99% of the bacteria. After disinfecting, flush the system with RO permeate.

### Disinfecting Procedure for MEMBRANES:

1. Clean the membrane with AM-22 or AM-23\*. AM-22 or AM-23\* will remove deposits in the membrane which harbors microorganisms. After cleaning, flush the membrane with RO permeate.
2. Clean the membrane with AM-11 or hydrochloric acid (pH = 3) to remove iron and other transition metals. After cleaning, flush the membrane with RO permeate.
3. Circulate a solution of 0.2% hydrogen peroxide through the membrane in with RO permeate for 30 minutes, at a temperature not to exceed 77 °F. Adjust the pH to 3 using hydrochloric acid. **Do NOT exceed this concentration or the membranes will be damaged.**
4. Allow the membrane to soak in the disinfecting solution for 30 minutes. After disinfecting, flush the membrane with RO permeate.

**CAUTION:** Hydrogen peroxide is not recommended in contact with brass, copper, or iron parts and fittings of an RO system. Handle all chemicals with care. Wear protective clothing and eye protection.

\* Hazardous Material