

## Cleaning Procedures for AM-11

Thin Film Composite RO Membrane Acid Cleaner

Before proceeding, read the MSDS on this product carefully. Use RO permeate water if possible. Water used for cleaning must be free of chlorine. Whether the system needs acid or alkaline cleaning will depend on the type of foulant suspected. We recommend acid cleaning be performed first even when alkaline cleaning is desired. If system performance recovers with acid cleaning, then alkaline cleaning is not necessary.

### Cleaning System

Connect cleaning tank and pump system to the membrane system. It may be necessary to clean one tube at a time (see flow requirements below). Pump pressure must not exceed 60 psi. Permeate and concentrate lines must return to the cleaning tank. Include a 10 micron filter in the concentrate and return line to the tank.

### Preparation of Solution

Slowly add 75 grams of AM-11 per gallon of water to the cleaning tank, or enough to bring the water pH to between 2 and 3. Mix well.

**Caution:** Mix with care. Wear rubber gloves, facemask or goggles, & protective clothing.

### Cleaning Procedure

**Caution:** Do not allow the cleaning solution temperature to exceed 120°F or the flow to exceed 4 GPM for 2.5 inch elements, 12 GPM for 4 inch elements, and 50 GPM for 8 inch elements. Recirculate solution.

1. Operate system at 50 psi. for 10 minutes. During this first 10 minutes of the cleaning cycle, the flow rate should be maintained at less than 1 GPM for 2.5" elements, less than 3 GPM for 4" elements, and 12 GPM for 8" elements, to allow the foulants to loosen. The flow rate should then be increased to 3 GPM for 2.5" clear elements, 9 GPM for 4" elements, and 40 GPM for 8" elements, for 20 minutes to clear foulants from the system.
2. Do not let tank run dry. Add more water and cleaner if necessary.
3. Dispose of the cleaning solution after adjusting the pH per local regulations.
4. Fill tank with clean water and flush system to drain for 10 to 15 minutes. Add clean water as necessary. Rinse the system until the concentrate pH is almost the same as the clean water pH.