Cleaning Guidelines for High pH/Temperature

The following procedure is a general guideline for the cleaning/sanitization of MAX spiral elements for most food and dairy applications. The cleaning time for MAX elements is typically 2-4 times faster than traditional cleaning procedures.

Depending on individual process streams, equipment and process time some variations in cleaning procedures may be required for optimal cleaning results. Please consult a qualified chemical supplier for application specific cleaning regimes.

Improper cleaning sequence, chemical concentration or abnormal temperatures/pH/pressure profiles can significantly reduce membrane life and possibly void any warranties offered on the element(s). If you have any questions or concerns about your cleaning regime, please contact Synder Filtration immediately.

Concentrate Displacement and Initial Flush

1. Flush the remaining concentrate in the system back to the concentrate tank or to drain.
2. Using clean water heated to 122°F/50°C, adequately flush the system in non-recirculation mode to remove any remaining build-up. The retentate and permeate should appear to be clean after this step.
3. Perform a complete Clean-In-Place (CIP) immediately after the initial flush per the following.

Caustic Wash

1. Circulate hot clean water (122°F/50°C) through the system under standard pressure and flow parameters.
2. Add caustic SLOWLY to achieve a pH of 12.5. DO NOT EXCEED pH 11 at 50°C. (pH12.5 for PES and pH 11 for PVDF at ambient temperatures)
3. Circulate caustic solution for 10 minutes.
4. Flush the system to drain with clean, warm water (same temperature as before).

Acid Wash

1. Circulate warm clean water 122°F/50°C through the system under standard pressure and flow parameters.
2. Add a sufficient amount of acid SLOWLY to achieve a pH of 2.0-2.2.
3. Circulate acid solution for 20 minutes.

High Temperature/pH Sanitation

1. Circulate warm clean water 185°F (85°C) through the system under standard pressure and flow parameters.
2. Add caustic SLOWLY to achieve a pH of 11. DO NOT EXCEED pH 11.
3. Circulate the caustic solution for 10 minutes.
4. Flush the system to drain with clean, warm water 122°F/50°C.

Alternative Sanitation Method (Caustic/Chlorine Solution)

Note: This cleaning method can be used in place of the High Temperature/pH Sanitation method mentioned above. Do not combine sanitation methods.

1. Circulate warm clean water through the system under standard pressure and flow parameters.
2. Add caustic SLOWLY to achieve a pH of 10.8-11.0. DO NOT EXCEED pH 11.
3. Add chlorine SLOWLY to achieve constant level of 150 ppm. DO NOT EXCEED 180 ppm.
4. Circulate the caustic/chlorine solution for 30 minutes.
5. Periodically check and maintain a chlorine concentration of 150 ppm.
6. Flush the system to drain with clean, warm water (same temperature as before).

See water quality standards for "clean water" on pg. 20 of the Sanitary catalog.

4941 Allison Parkway, Vacaville, CA 95688
T: +1 (707) 451-6060 | F: +1 (707) 451-6064
sales@synderfiltration.com | www.synderfiltration.com