



FILMTEC Membranes

Cleaning and Sanitization: Cleaning Procedure for Specific Situations

Iron Fouling

The following cleaning procedure is designed specifically for a system that is fouled with iron.

Cleaning Procedure

There are seven steps in cleaning elements with iron fouling.

1. Make up the cleaning solution listed from Table 6.6.
2. Introduction of the cleaning solution.
3. Recycle.
4. Soak. Soak times are essential for sodium hydrosulfite to be effective. Soak time will vary depending on the severity of the fouling. A typical soak time is 2-4 hours.
5. High-flow pumping.
6. Flush out.
7. Restart.

Table 6.6 Iron fouling cleaning solutions

Cleaning solutions	Solution
Preferred	1.0 wt % $\text{Na}_2\text{S}_2\text{O}_4$ (pH 5, 30°C)
Alternative	2.0 wt % citric acid
Alternative	0.5% H_3PO_4
Alternative	1.0% $\text{NH}_2\text{SO}_3\text{H}$

Cleaning chemical formula in order used: $\text{Na}_2\text{S}_2\text{O}_4$ is sodium hydrosulfite; H_3PO_4 is phosphoric acid; $\text{NH}_2\text{SO}_3\text{H}$ is sulfamic acid.

Additional Information

The sodium hydrosulfite has a very pungent odor, so the room must be well ventilated. Follow all safety regulations and procedures. Contact time is key to successful cleaning. The solution will sometimes change many different colors. Black, brown, yellow are all very normal for this type of cleaning. Anytime the solution changes color, it should be disposed of and a new solution prepared. The length of time and the number of soaking periods will depend on the severity of the fouling.

FILMTEC™ Membranes
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