**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**

<table>
<thead>
<tr>
<th>Cleaning solutions</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred</td>
<td>1.0 wt % Na₂S₂O₄ (pH 5, 30°C)</td>
</tr>
<tr>
<td>Alternative</td>
<td>2.0 wt % citric acid</td>
</tr>
<tr>
<td>Alternative</td>
<td>0.5% H₃PO₄</td>
</tr>
<tr>
<td>Alternative</td>
<td>1.0% NH₂SO₃H</td>
</tr>
</tbody>
</table>

Cleaning chemical formula in order used: Na₂S₂O₄ is sodium hydrosulfite; H₃PO₄ is phosphoric acid; NH₂SO₃H 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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