



## KMS WATER QUALITY GUIDELINES FOR CLEANING & DIAFILTRATION

*For All Polymeric Membrane and Ion Exchange/Absorbent Resin Applications*

Parameter	MF/UF	NF/RO & IE/Abs. Resin
<b>Turbidity</b>	<b>&lt; 1.0 NTU</b>	<b>&lt; 1.0 NTU</b>
<b>Suspended Solids (see Note 1)</b>	<b>&lt; 5 mg/l</b>	<b>&lt; 1 mg/l</b>
<b>Calcium (Ca)</b>	<b>&lt; 10 mg/l</b>	<b>&lt; 5 mg/l</b>
<b>Total Hardness (as CaCO<sub>3</sub>)</b>	<b>&lt; 60 mg/l</b>	<b>&lt; 30 mg/l</b>
<b>Iron (Fe)</b>	<b>&lt; 0.05 mg/l</b>	<b>&lt; 0.05 mg/l</b>
<b>Zinc (Zn)</b>	<b>&lt; 0.3 mg/l</b>	<b>&lt; 0.05 mg/l</b>
<b>Copper (Cu)</b>	<b>&lt; 0.1 mg/l</b>	<b>&lt; 0.05 mg/l</b>
<b>Manganese (Mn)</b>	<b>&lt; 0.05 mg/l</b>	<b>&lt; 0.02 mg/l</b>
<b>Aluminum (Al)</b>	<b>&lt; 0.05 mg/l</b>	<b>&lt; 0.05 mg/l</b>
<b>Silica, Reactive (as SiO<sub>2</sub>)</b>	<b>&lt; 10 mg/l</b>	<b>&lt; 10 mg/l</b>
<b>Silica, Colloidal (as SiO<sub>2</sub>)</b>	<b>&lt; 1 mg/l</b>	<b>&lt; 0.1 mg/l</b>
<b>Silicone</b>	<b>0 mg/l</b>	<b>0 mg/l</b>
<b>Total Bacteria Count (TBC)</b>	<b>&lt; 1000 per ml</b>	<b>&lt; 1000 per ml</b>
<b>E-Coli Count</b>	<b>0 per 100 ml</b>	<b>0 per 100 ml</b>
<b>Chlorine (as NaOCl)</b>	<b>&lt; 1 mg/l</b>	<b>0 mg/l</b>
<b>D-Limonene (citrus applications only)</b>	<b>&lt; 5 mg/l</b>	<b>0 mg/l</b>
<b>Fats, Oils and Grease</b>	<b>0 mg/l</b>	<b>0 mg/l</b>
<b>Total Organic Carbon (TOC)</b>	<b>&lt; 1 mg/l</b>	<b>&lt; 1 mg/l</b>
<b>pH (standard units)</b>	<b>6.5 – 7.5</b>	<b>6.5 – 7.5</b>

1. The water supply must be free from particulate matter such as rust, scale, flakes, sandy and granular material, slurries, scum, algae and any chemical constituents that could foul or damage the membranes.
2. The water pH may need to be adjusted with acid or alkali depending on application and local conditions.
3. KMS membranes are available in many configurations and materials that may be affected differently by various water constituents. Softened water or evaporator condensate is generally acceptable for cleaning and flushing of polymeric membranes. Please consult with the KMS Process Group for the particular membrane in question.

### PRE-STARTUP CLEANING PROCEDURE FOR PES UF SPIRAL ELEMENTS FOR INDUSTRIAL WATER APPLICATIONS

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