Pre-Startup Cleaning Procedure for 8-inch PURON® MP Hollow Fiber Cartridges

The following cleaning procedure must be performed prior to initial use of cartridges and whenever system has been inoperative for more than seven (7) days. This procedure will remove storage solution and condition the membrane for production. Failure to follow this procedure may lead to poor performance and will void cartridge warranty. Product data sheet is to be reviewed before conditioning, so cartridges are always operated within required pressure, flows, and other required parameters. Please refer to the Kovalus Separation Solutions™ Water Quality Guidelines on the reverse side of this document.

PRE-STARTUP CLEANING PROCEDURE			
Step 1	**Rinses:**	**Ambient Temp**	**10-15 min.**
	Fill cartridges (feed and permeate) using feed water and rinse 3x with clean water (50-80°F/10-27°C) in the following manner: 1. Backflush at 19 gpm (4.3 m^3/hr) /cartridge for 30 seconds 2. Drain feed side of cartridges 3. Fill feed side of cartridges at less than 20 gpm (4.5 m^3/hr) /cartridge		
Step 2	**Chlorine Cycle:**	**Max pH 10.5/Max. 100°F**	**75-90 min.**
	Circulate heated water (65-80°F/18-27°C) through system under standard pressure and flow conditions. Add liquid, membrane grade sodium hypochlorite (NaOCl) to achieve 450-500 ppm total chlorine concentration. Circulate solution through the membrane cartridges in a permeation mode at 11 gpm (2.6 m^3/hr) /cartridge for 50-60 minutes. Drain, then rinse per Step 1 until the free chlorine concentration is below 3 ppm or less based on downstream permeate requirements.		

For technical assistance, please contact a Cleaning Specialist at +1-978-694-7050.
To place an order, please contact our Customer Service Department at +1-978-694-7000.

Kovalus Separation Solutions™
Water Quality Guidelines for Cleaning and Diafiltration

For All Polymeric Membrane and Ion Exchange/Adsorbent Resin Applications

Parameter	MF/UF	NF/RO & IE/Ads. Resin
Turbidity	< 1.0 NTU	< 1.0 NTU
Suspended Solids (see Note 1)	< 5 mg/l	< 1 mg/l
Calcium (Ca)	< 10 mg/l	< 5 mg/l
Total Hardness (as $CaCO_3$)	< 60 mg/l	< 30 mg/l
Iron (Fe)	< 0.05 mg/l	< 0.05 mg/l
Zinc (Zn)	< 0.3 mg/l	< 0.05 mg/l
Copper (Cu)	< 0.1 mg/l	< 0.05 mg/l
Manganese (Mn)	< 0.05 mg/l	< 0.02 mg/l
Aluminum (Al)	< 0.05 mg/l	< 0.05 mg/l
Silica, Reactive (as SiO_2)	< 10 mg/l	< 10 mg/l
Silica, Colloidal (as SiO_2)	< 1 mg/l	< 0.1 mg/l
Silicone	0 mg/l	0 mg/l
Total Bacteria Count (TBC)	< 1000 per ml	< 1000 per ml
E-Coli Count	0 per 100 ml	0 per 100 ml
Chlorine (as NaOCl)	< 1 mg/l	0 mg/l
D-Limonene (citrus applications only)	< 5 mg/l	0 mg/l
Fats, Oils and Grease	0 mg/l	0 mg/l
Total Organic Carbon (TOC)	< 1 mg/l	< 1 mg/l
pH (standard units)	6.5 – 7.5	6.5 – 7.5

TABLE NOTES

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 KSS 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 KSS Process Group for the particular membrane in question.

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