Pre-Startup Cleaning Procedure for WINEFILTER™, and WINEFILTER II Cartridges

The following cleaning procedure should be performed prior to initial use of cartridges. This procedure will remove storage solution and condition membranes for production. Failure to follow this recommendation may lead to poor performance and will void cartridge warranty. Please refer to Kovalus Separation Solutions™ Water Quality Guidelines on reverse side of this document.

PRE-STARTUP CLEANING PROCEDURE				
Step 1	**Fill/Rinse Cycle:**	**Neutral pH**	**70-90ºF (20-30ºC)**	**10 min.**
	Fill the system and then perform one rinse using clean water.			
Step 2	**Alkaline Cycle:**	**pH 11.5-12.0**	**122°F (50ºC)**	**30 min.**
	Drain and fill system with clean water. Add to circulating water: • Caustic, Caustic Blend or KOVKLEEN® 222 Cleaner (KOVKLEEN WA Cleaner in Europe) to adjust pH to 11.5-12.0. Circulate solution at standard pressure and flow conditions for 30 minutes.			
Step 3	**Drain/Rinse Cycle/Water Flux:**	**Neutral pH**	**70-90ºF (20-30ºC)**	**10 min.**
	Drain, then fill and flush system with clean water. Perform two rinses or until pH is neutral. Measure the water flux during the Step 3 rinse cycle. This will serve as the basis for future measurements.			

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.

Note: If KOVKLEEN cleaners are not readily available, please contact KSS.

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.

The information contained in this publication is believed to be accurate and reliable, but is not to be construed as implying any warranty or guarantee of performance. We assume no responsibility, obligation or liability for results obtained or damages incurred through the application of the information contained herein. Refer to Standard Terms and Conditions of Sale and Performance Warranty documentation for additional information

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