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Kleen* MCT524

Membrane Cleaner - FDA/GRAS Approved and Kosher

Features

- Highly effective cleaner for use with Thin Film Composites (RO/NF) and hollow fiber membranes (MF/UF).
- Excellent results are achieved when used to remove organic foulants and biological slime
- Liquid product, which allows shorter mixing time
- This formulation meets FDA requirements (GRAS) for membrane process applications
- Improved results are obtained when used in conjunction with Kleen* MCT403 or Kleen MCT503

Description

Kleen MCT524 is a high pH liquid formulation designed to remove organics, silt, microbiological accumulation; and other particulate deposits from Reverse Osmosis (RO), Nanofiltration (NF), ultrafiltration (UF) and microfiltration (MF) membranes used in food applications. It is also an excellent cleaner in pure water applications. This highly effective product provides superior cleanings resulting in longer system running time.

Typical Applications

During the operation of a membrane separation system, organic materials and suspended solids in the incoming stream can accumulate on the membrane surface. The presence of organic materials also provides an environment conducive to microbiological activity, which can result in microbiological fouling. Fouling from these species impedes the flow through the membrane. This can result in unacceptably low production, high operating pressure, or an excessive pressure drop in the system, which may lead to irreversible membrane damage. Before these foulants accumulate to a level where product water flow or quality declines or membrane damage occurs, they should be removed through a clean-in-place (CIP) off-line cleaning. Indications of the need for cleaning include a significant decrease in normalized permeate flow, a significant increase in pressure drop across the system (or individual stage), or an increase in the normalized salt passage such that product quality is unacceptable.

Your GE representative can assist you with monitoring your system and determining when cleaning is advised.

Kleen MCT524 contains a blend of solubilizing and complexing agents designed to specifically remove organic and particulate foulants from the surfaces of the membrane. Used in tandem with an acidic cleaner for scale removal, regular cleanings with Kleen MCT524 can help to preserve the life of your membranes.

Depending on the nature of the fouling, a soak period may be necessary for optimum results. Consult your GE representative for details.

Application

For improved results in food applications, Kleen MCT524 should be used in combination with low pH cleaners such as Kleen MCT403 or MCT503.

Feed Requirements

Feed System - This product should be applied using the membrane cleaning equipment, supplied by the manufacturer of the membrane

system. If such a system is not present, contact your GE representative for information on fabricating or obtaining a cleaning system.

Dilution - The recommended dilution for this product is from 1% - 2.5 % with permeate water.

Materials Compatibility - Corrosion-resistant equipment should be used for the storage, preparation, and use of this product per the following compatibility chart:

Rating	Material
A	LB, SS, Buna S, Hypalon, EPR, Natural Rubber, Teflon
B	Butyl, Buna N, Neoprene, Viton Lithurge, Polyethyl HD & LD, PVC, Kynar, Polyethyl HDCL, Polypropylene, Polysulfone
C	LCS, Viton A, Tygon, Nylon
X	Al, Urethane

Packaging Information

Kleen MCT524 is a liquid material, available in a variety of containers and delivery methods. Contact your GE representative for details.

General Cleaning Instructions

The following general cleaning procedure can be followed. For the optimum cleaning procedure for your system, contact your GE representative.

1. Inspect cleaning tank, hoses, and cartridge filters. Clean tank and flush hoses if necessary. Install new cartridge filters.
2. Fill cleaning tank with RO permeate or DI water. Turn on agitator or tank recirculation pump.
3. Slowly add Kleen MCT524 to cleaning tank in order to prepare a solution of 1- 2,5 % concentration, based on the CIP total volume and the product strength needed and allow to mix thoroughly.
4. Check solution temperature. If solution temperature is lower than recommended level, adjust heating control to provide optimum temperature. If manufacturer's recommendation is not available, contact your GE representative.
5. Check solution pH. The solution pH should be <12 or as recommended by the membrane manufacturer. If pH is too low, adjust pH upward with NaOH, or other chemical as recommended by the membrane manufacturer. If pH is too high, adjust with hydrochloric acid.
6. Circulate solution through one stage at a time in the direction of feed flow for 30 minutes. Circulate at the flow rate recommended by the membrane or system manufacturer. If manufacturer's recommendation is not available, contact your GE representative. Pressure should be low enough so that minimal permeate is produced during cleaning, but always less than 60 psig (4.2 kg/cm^2).
7. In cases of heavy fouling, the first return flow (up to 15% of the cleaning tank volume) should be diverted to drain to prevent redeposition of removed solids. For optimum results, each stage must be cleaned separately in a multistage system.
8. If the first stage cleaning solution becomes turbid or discolored, dump the tank and prepare a fresh cleaning solution before proceeding. If solution pH or temperature moves out of the recommended range, a new solution should be prepared. In any event, a new cleaning solution should be prepared for each stage.
9. Rinse with RO permeate before returning system to service.
10. When returning unit to service, divert product water to drain until any residual cleaning solution has been rinsed from system.

Depending on the nature of the fouling, a soak period may be necessary for optimum results. Consult your GE representative for details.

Safety Precautions

A Material Safety Data Sheet (MSDS) containing detailed information about this product is available upon request.