



CC KLEAN 105

MEMBRANE CLEANER

- **Suitable for membranes with moderate pH tolerance**
- **Suitable for use in conjunction with enzymatic membrane cleaners such as CC KLEAN 065E.**
- **Excellent results are achieved when used on systems running on hard water sources.**
- **Buffered to maintain an effective pH over a range of dilutions.**
- **Enhanced performance at elevated temperatures**
- **No adverse effects with repeated use.**

Description and Use

CC KLEAN 105 is a moderate pH liquid cleaner designed to remove organics and mineral deposits from reverse osmosis (RO), nanofiltration (NF), ultrafiltration (UF) and microfiltration (MF) membranes. CC KLEAN 105 provides very effective cleaning resulting in longer interval between cleanings, reduced energy consumption and longer system running time.

Typical Applications

Membrane separation systems will during operation accumulate organic materials and suspended solids from the incoming water on the membrane surface. This accumulation leads to fouling of the membranes restricting the water flow through the membranes.

If left untreated the result can be a system that operates with unacceptably low production, high operating pressure, or an excessive pressure drop in the system. Results can be irreversible membrane damage.

Additionally, the accumulation of scale can result in a drop in product water quality due to increased amount of dissolved material passing through the membrane.

Regular clean-in-place CIP offline cleaning of the membranes prevents these scenarios and keeps the system operating within the design specifications and prolongs membrane lifetime.

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 Copenhagen Chemicals partner can assist you with monitoring your system and determining when cleaning is advised.

CC KLEAN 105 contains a blend of solubilizing and complexing agents designed to specifically remove organic and particulate foulants from the surfaces of the membrane.



Used together with an acidic cleaner for scale removal for example CC KLEAN 030, regular cleanings with CC KLEAN 105 can help to prolong the life of your membranes.

Can be used together with CC KLEAN 065E enzymatic cleaner.

Consult your Copenhagen Chemicals partner for details.

Application

For optimum results, CC KLEAN 105 should be used in combination with low pH cleaners such as CC KLEAN 015, CC KLEAN 030 or CC KLEAN 035.

Feed Requirements

Feed System - This product should be used in conjunction with the membrane cleaning equipment supplied by the manufacturer of the membrane system.

Dilution – The product must be diluted prior to introduction into the membrane system. The recommended dilution is a 0,5-2% strength solution.

Materials Compatibility – Corrosion resistant equipment, such as PVC, should be used for the storage and preparation of this product. Pumping materials coming in contact with the diluted products should also be corrosion resistant.

Packaging Information

CC KLEAN 105 is a liquid material and is available in 26 kg pails or 250 kg drums.

General Membrane Cleaning

Instructions

The following general cleaning procedure can be followed.

For the optimum cleaning procedure for your system, contact your Copenhagen Chemicals partner.

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 CC KLEAN 105 to cleaning tank (0,25-1 kg of product for every 50 L water) and allow to mix thoroughly.



4. Heat solution to a temperature of 45-85 °C, or the maximum allowable temperature for the membrane if this is lower than recommended interval. If membrane manufacturer's recommendation is not available, contact your Copenhagen Chemicals partner.

5. Check solution pH. The solution pH should be about 10,5 or as recommended by the membrane manufacturer. If pH is too low, adjust pH upward with NaOH. 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 15-60 minutes. Circulate at the flow rate recommended by the membrane or system manufacturer. If the manufacturer's recommendation is not available, contact your Copenhagen Chemicals partner. Pressure should be low enough so that no permeate is produced during cleaning, but always less than 4 bar.

In cases of heavy fouling, the first return flow (up to 20% 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.

7. 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.

8. Rinse with RO permeate before returning system to service.

9. When returning unit to service, divert product water to drain until any residual cleaning solution has been rinsed from system.

Safety Precautions

A Safety Data Sheet containing detailed information about this product is available upon request.