MBR KLEAN 210

MBR MEMBRANE CLEANER

- **Designed specifically for cleaning membranes in Membrane Bio-Reactor systems.**
- **Effectively releases sludge from membrane surface.**
- **Superior cleaning results with high flux recovery.**
- **Formulated for use on membranes with low pH tolerance**
- **Environmentally friendly formulation**
- **Enhanced performance at elevated temperatures**
- **No adverse effects with repeated use.**

Description and Use

MBR KLEAN 210 is a moderate pH powder cleaner designed to remove fouling and sludge from MBR membrane surfaces. MBR KLEAN 210 provides very effective cleaning resulting in improved sludging control, reduced energy consumption and longer system running time.

MBR KLEAN 210 is suitable for use on both submerged and external type configuration. MBR KLEAN 210 can be used both for recovery and maintenance cleaning.

Typical Applications

Membrane Bio-Reactor systems will during operation accumulate sludge and suspended solids from the biological tank 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 (external type systems), or an excessive pressure drop in the system. Results can be irreversible membrane damage.

Regular 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 module), or a decrease in the normalized permeate quality such that product quality is unacceptable.

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

MBR KLEAN 210 contains a blend of solubilizing and active cleaning ingredients designed to specifically remove organic sludge and particulate foulants from the surfaces of the membrane.

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Feed Requirements

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

Dilution – The product must be dissolved in water prior to introduction into the membrane system. The recommended dilution is a 0,5-1,5% strength solution. Typical dilution for normal cleaning will be 0,5-1%. If severe fouling is observed, up to 1,5% may be necessary during recovery cleanings.

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

MBR KLEAN 210 is a powder material and is available in 8 kg buckets and 12,5 kg bags as standard. MBR KLEAN 210 can be supplied in other packing quantities on request.

Please contact your Copenhagen Chemicals partner for further details.

General Membrane Cleaning Instructions

External Configuration

The following general cleaning procedure can be followed for external type configurations. 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 permeate or clean water. Turn on agitator or tank recirculation pump.

3. Slowly add MBR KLEAN 210 to cleaning tank (0,25-0,75 kg of product for every 50 L water) and allow to mix thoroughly.

4. Heat solution to a temperature of 50-75 °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 10,5 – 11,5 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.

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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 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.

Submerged Configuration

The following general cleaning procedure can be followed for submerged type configurations.
For the optimum cleaning procedure for your system, contact your Copenhagen Chemicals partner.

1. If cleaning is performed in biological tank, drain the biological tank and inspect tank, hoses and diffusers etc. Clean tank and flush hoses, diffusers etc. if necessary.

2. Fill cleaning or biological tank with permeate or clean water. Turn on agitator/diffusers or tank recirculation pump.

3. Slowly add MBR KLEAN 210 to cleaning tank (0,25-0,75 kg of product for every 50 L water) and allow to mix thoroughly to dissolve the MBR KLEAN into solution. Heat will decrease solution time.

4. Heat solution to a temperature of 50-75 °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 10,5 – 11,5 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.

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6. Circulate solution through membrane banks in the direction of feed flow for 15-60 minutes, while running diffusers to create maximum abrasion on membrane surface. 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.
For optimum results (if a separate cleaning tank is available), each module must be cleaned separately in a multi module system.

7. If the 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 module if cleaned separately in external cleaning tank.

8. Rinse with permeate or clean water 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.

More Information

Please visit our website www.copenhagenchemicals.com to find case stories, fact sheets and feel free to contact us for more information on references.

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