

NLR 303 – SURFACTANT-BASED LIQUID MEMBRANE CLEANER

FOULING

The loss of membrane performance due to fouling by colloidal materials is common to many UF, NF and RO membranes worldwide. This fouling can lead to reduced permeate flow, changes in rejection characteristics across the membrane system, increases in differential pressure and frequent membrane replacement.

CLEANING

Keeping your membrane clean with regular cleaning routines or performing a maintenance clean to recover the membranes are possible solutions to overcome the fouling plaguing many existing systems.

The NLR-303 liquid membrane cleaner is designed to target various colloidal materials including: silt, clay, and chemical particulates. The surface-active ingredients also will emulsify organics, dirt, and other hydrophobic substances. This cleaner will effectively clean your system in order to maintain the membrane performance and extend the life of your membranes.

The NLR-303 cleaner contains both nonionic and anionic detergents designed to provide superior removal of soil and colloids.

USAGE INSTRUCTIONS

Cleaning for your particular system may require an individualized procedure based on

your type of foulants. However, the following is a basic procedure that should work for a broad range of situations.

NLR-303 is a concentrated cleaner that should be diluted with water to the proper concentration prior to use. The cleaning solution should be prepared in a clean tank equipped with a mixer and a low-pressure recirculation pump. For a standard cleaning you will prepare a 2% solution. This will equate to adding 2 gallons of the NLR-303 cleaner to 98 gallons of water. Here is a table outlining the volumes to use for various final cleaning solution volumes.

Total Cleaning Solution	Volume of NLR 303	Volume of Water
5 gallons	12.8 ounces	4.95 gallons
10 gallons	25.6 ounces	9.9 gallons
30 gallons	0.6 gallons	29.7 gallons
50 gallons	1.0 gallon	49.5 gallons
55 gallons	1.1 gallons	54.45 gallons
100 gallons	2 gallon	99 gallons
200 gallons	4 gallons	198 gallons
300 gallons	6 gallons	297 gallons

The solution pH will be approximately 9.0 to 9.5. When recirculating the solution through your membrane system you will want to use a feed pressure of 30-50 psi. The exact flow rate will depend on the size of your membrane module.

Rinse your membrane system first with de-ionized water (DI) water for 10 minutes. Prepare the NLR-303 cleaning solution as instructed above and heat to 45°C or prepare the solution with heated water. Recirculate the solution for 30-45 minutes checking the pH periodically. Add additional NLR-303 if the pH drops from its initial value.

Rinse the system again with DI water prior to returning to your regular process feed material. The use of DI water is not necessarily required but ordinary tap water may introduce foulants to your system prior to returning to your feed material. If you are having problems with your cleaning then you should test to see if a DI water rinse following cleaning improves the performance.

For periodic maintenance cleaning or for heavily fouled membranes you may want to prepare a 3% solution of the NLR-303 cleaner and recirculate as above or complete the above cleaning two times. You may also want to have your membranes soak overnight for heavily fouled systems.

REQUIRED CLEANING TIME

The actual time required to complete a cleaning will depend on the foulants and the length of time between cleanings. In some cases you can clean in 30 minutes while in other cases it will take hours or could require an overnight soak. The best cleaning cycle will be determined through experimentation by altering variables such as: cleaner concentration, water temperature, type of water, and duration of cleaning cycle.

The longer you run the cleaning solution, the more likely you are to consume one of the ingredients. For longer cleaning you may need to add more NLR-303 to the cleaning tank. This is another parameter to consider when optimizing your process. Measuring pH periodically will help you determine if the cleaner composition is maintained.

PACKAGING

NLR-303 is shipped as a liquid in 5-gallon plastic containers or 55-gallon drums. The shelf life for the cleaner when stored unopened indoors at a temperature between 5°C and 30°C is one year from its date of manufacture. For specific pricing and delivery information, please contact New Logic.

HANDLING

NLR-303 is a slightly alkaline cleaner and should not be mixed with other cleaners unless specified by the vendor. Mixing NLR-303 with acids may cause precipitation.

Wear chemical resistant gloves when you expect long, constant exposure. It is also a good practice to wear safety glasses or goggles when using this product.

CLEANER MSDS SHEETS

For the most current MSDS sheets for New Logic cleaners please visit our website at www.membranecleaner.com.

Or contact:

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