

Minnicare® Cold Sterilant

Application Notes: Sanitization of High Purity Piping

The purpose of this Application Note is to acquaint high purity water system users with the advantages of using Minncare Cold Sterilant to sanitize their distribution piping systems.

Why Should I Sanitize My High Purity Water System?

Recent studies have demonstrated that nearly all high purity Reverse Osmosis (RO) and Deionization (DI) piping systems will form biofilms with time. This has proven true even for fluorocarbon piping systems. This biofilm will intermittently shed microorganisms into the treated water and will contribute to particulate levels, bacteria levels and total organic carbon levels. These contaminants can adversely affect your product, your product yields, your lab results, and the service run lengths of your water system filters.

What Is Minncare?

Minnicare Cold Sterilant is a special chemical formulation that incorporates peroxyacetic acid, a hydrogen peroxide catalyst, and other inert ingredients.

Why Should I Use Minncare?

The Minncare formula provides a superior biocidal activity in the pipe and cleans out biofilms to prevent recolonization of bacteria.

- Fast rinse out and short contact times as low as 20 minutes will save system down time and labor.
- Minncare Cold Sterilant is compatible with most RO and/or DI system components and does not cause any long-term wear on the system's materials of construction. (Note: Minncare may have an adverse effect on some metals such as aluminum, brass and copper. These components are typically not found in RO and/or DI water systems but check your material's compatibility with your Mar Cor Purification BioScience Products representative).
- Minncare is safe for disposal and with minimal protective equipment (gloves, apron and eye protection are strongly recommended) is safe to handle with no exposure to toxic vapors.
- Minncare Cold Sterilant completely rinses out of the RO and/or DI system leaving no residual contaminants behind. Minncare Cold Sterilant also breaks down naturally to acetic acid and hydrogen peroxide, which are very soluble in water. During the rinse phase, if you restart your UV sterilizers, you will produce a small amount of ozone that further cleans the piping system.
- Minncare Cold Sterilant is compatible with reverse osmosis membranes. This is most advantageous if an RO system is part of your high purity water system because you can disinfect the entire water system at the same time.



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- Minncare is less expensive than other types of Cold Sterilant agents. For example, hydrogen peroxide requires a 5% to 10% concentration to disinfect a water system.
- Minncare is biodegradable and decomposes into oxygen, water and acetic acid; none of which harms the environment.

How Much Minncare Do I Use?

Minncare Cold Sterilant is typically used in a 1% concentration, which is easily mixed on site. One gallon of Minncare Cold Sterilant will make 100 gallons of solution to sanitize the water system. You should estimate the hold-up volume of your system to determine how much Minncare Cold Sterilant you will require. The storage tanks in the system can be drained to reduce the volume of Minncare Cold Sterilant required to comprise a 1% concentration in the system.

How Do I Test For Minncare?

The Minncare 1% Test Strips will indicate the presence of a 1% Minncare Cold Sterilant solution at any test port in the system. The Minncare Residual Test Strips colormetrically indicate Minncare Cold Sterilant chemical levels at 100, 30, 10, 1 and 0 PPM. These residual test strips allow you to determine when the Minncare Cold Sterilant has been thoroughly rinsed out of the system.

Disposal of Minncare

The disposability of Minncare Cold Sterilant solution is a significant advantage of the product because the hydrogen peroxide breaks down naturally to water and oxygen and the peracetic acid breaks down into innocuous acetic acid and oxygen. This process occurs so quickly in a sanitary sewer that it poses no threat to municipal waste treatment plants. Minncare requires normal neutralization, as specified by the local municipality.

NOTE: A 1% solution of Minncare has a pH of around 3.5.

Conclusions About Minncare

Minncare Cold Sterilant eliminates bacteria and biofilms from water treatment piping systems. Unlike hydrogen peroxide, Minncare vapors are biocidal, which will improve its effectiveness in disinfecting storage tanks. Minncare is also an effective RO membrane Cold Sterilant, which aids in sanitizing DI makeup systems. Minncare is safer to handle and less aggressive to system components than hydrogen peroxide. It rinses out quickly and completely and is easily monitored with the Minncare Residual Test Strip. Minncare does not cause an increase in water treatment contamination levels. In fact, when used in a comprehensive system disinfection, Minncare has been proven to reduce contaminant concentrations. Therefore, Minncare is considered a more thorough Cold Sterilant than hydrogen peroxide.

Minncare® is a registered trademark of Minntech Corporation, a Cantel Medical Company.



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