

Mar Cor Purification  
**Disinfection and Filtration Products**



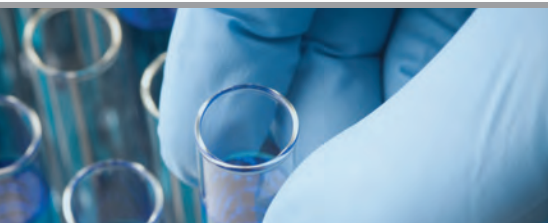
# Mar Cor Purification **Disinfection and Filtration** Products

Mar Cor Purification, owned by Cantel Medical Corporation, is a business that consists of several familiar companies integrated to offer filtration, water and disinfection technologies. These companies include Minntech Filtration Technologies Group, now renamed BioScience Products. The BioScience Products Group has been providing hollow fiber membrane filters, cold sterilant disinfectants and dry fog products for over 20 years. These products are used in many pharmaceutical, medical and industrial applications as a key component of maintaining a high quality filtration & disinfection environment.

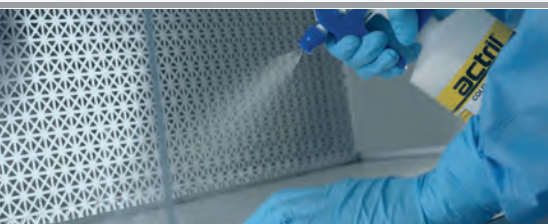
## Mar Cor Purification BioScience Markets



Water Filtration



Custom & Process Filtration



Surface Sterilization



Water System Disinfection



Critical Area Fogging

## Disinfection Technologies

Mar Cor Purification is a leading provider of sterilization products to the cleanroom and high purity water markets. By providing a combination of liquid, ready-to-use sterilization and airborne bio-decontamination options, Mar Cor can help meet a variety of sterilization requirements.

### Products & Services:

- Minncare® Cold Sterilant & Test Strips
- Minncare® HD Disinfectant & Test Strips
- Actril® Cold Sterilant
- Actril® Cold Sterilant- Clean Room Packaging
- Minncare Dry Fog® 2 System
- Mini Dry Fog System
- Actril® Fog System



## Filtration Technologies

Mar Cor's unique hollow fiber membrane technology is made using advanced quality control techniques which produce a remarkably consistent product passing biocompatibility and performance criteria required for registration as a medical device under U.S. FDA.

### Products & Services:

- FiberFlo® Hollow Fiber (HF) Cartridge Filters
- FiberFlo® HF Capsule Filters
- FiberFlo® HF Crossflow Filters
- Therapeutic Technologies Hemoconcentrators
- Therapeutic Technologies Hemofilters
- FiberFlo® Depth & Prefilters
- Custom Hollow Fiber Applications



# Cleanliness of Systems and Environments is Critical to Efficient Operation

## Surface Sterilization

The cleanliness of systems and environments is a critical issue in the biotech industry, particularly in cleanroom and critical area applications. Mar Cor has a proven group of concentrate and ready-to-use disinfectants and sterilants for hard surfaces commonly found in pharmaceutical cleanrooms. This group of products are specifically formulated for use on surfaces made from nonporous materials such as plastics, stainless steel or glass.



### Actril® Cold Sterilant

Actril is an effective, ready-to-use disinfectant and sterilant for hard surfaces commonly found in pharmaceutical cleanrooms. Registered with U.S. EPA

- Superior Sporidical, Bactericidal, Fungicidal, and Virucidal Activity
- Available in Clean Room Packaging

### Minncare® Cold Sterilant

Disinfectant and Sterilant for non-porous hard surfaces. Registered with U.S. EPA

- Easily disposable and Biodegradable
- Fast acting, concentrated formula
- Used in Dry Fog Technology

## High Purity Water System Disinfection

Protection of reverse osmosis membranes and their associated distribution systems is critical against short- and long-term bacterial problems. Minncare® Cold Sterilant is a powerful oxidant that stops organism growth by oxidizing microbial cell proteins and enzyme systems.

### Minncare® HD Disinfectant and Test Strips

Minncare® HD is the first chemical disinfectant to receive an FDA 510(k) clearance for the disinfection of water purification systems for hemodialysis.

- Minncare® HD eliminates the risk of using unregulated industrial chemicals
- 510(k) medical device clearance from the FDA
- Superior biocidal activity associated with Minncare® Cold Sterilant

### Minncare® Cold Sterilant and Test Strips

For over 25 years the proven technology for bacteria, endotoxin and particle control.

- Superior biocidal activity
- Compatible with all thin film composite membranes
- Easily disposable and Biodegradable
- Fast acting, concentrated formula
- Used in Dry Fog Technology





# Proven Technology for Bacteria, Endotoxin and Spore Removal

## FiberFlo® Hollow Fiber Filters

Mar Cor Purification's unique polysulfone (PS) hydrophilic hollow fiber membrane technology is available in FiberFlo brand filtration and separation devices. Available in either cartridge or capsule form, the filter devices provide absolute fluid purity and validated endotoxin/pyrogen removal\* in devices with up to three times the filter area as similar traditional pleated filters.

This advantage streamlines processes and saves on both capital and operating expenses. The unique hollow fiber membrane is made using advanced quality control techniques which produce a remarkably consistent product passing biocompatibility and performance criteria required for registration as a medical device under U.S. FDA.



### FiberFlo® Hollow Fiber Cartridge Filters

- 2-3 times the flow of equivalent pleated filters
- Available in 0.05 – 0.45 micron cutoffs
- Cleanable and sanitizable

### FiberFlo® Hollow Fiber Capsule Filters

- Up to 6 times surface area of comparable pleated capsule filters
- Meets USP Class VI Plastics Testing & USP XXIII standards
- Wide choice of end connections



## FiberFlo® Hollow Fiber Crossflow Filters

### Increase Microsphere Processing Yields 30-50%

Ideal for separation and purification applications, the polysulfone fibers have a graded pore size structure with a "skin" on the inside of the fibers.

### Typical Applications

- Microparticle washing & coating in 1 diafiltration step
- Cell concentration
- Cell Debris removal
- Cell harvest
- Cell perfusion
- Multi-particle washing

## FiberFlo® Pleated, Depth & Prefilters

Prefiltration is critical for the long life of your filtration system. Mar Cor Purification has a complete line of prefiltration products in a variety of materials, micron ratings, and sizes.

### Absolute Rated Final Filters

- Polyethersulfone Absolute Rated Pleated
- All-Nylon & Nylon Pleated
- Polypropylene Absolute Rated Pleated
- Polytetrafluoroethylene (PTFE) Pleated

### Depth & Prefilters

- Polypropylene Pleated Depth
- MicroFiber Filters

\*Only the pore sizes of the FiberFlo 50 and FiberFlo 100 are validated to remove pyrogens

# Absolute Performance in Filtration Technology

## Therapeutic Technologies

Mar Cor's unique Polyphen® non-glycerin coated polysulfone hollow fibers has a distinguished history of excellent biocompatibility and make it ideal for demanding medical therapy and or process filtration applications. For blood filtration & concentration applications, we have a full line of standard products that meet ISO 10993-4 for blood contact and are registered with the U.S FDA as medical devices.

Our therapeutic hollow fiber membranes are manufactured for a variety of biotechnology applications that integrate the filter into proprietary systems and devices for medical uses. These devices can be ETO sterilized for sterile applications. Each lot of fiber produced is extensively tested to assure performance.

### Hemoconcentrators

Hemoconcentration has become the preferred method of controlling hemodilution during cardiopulmonary surgery by surgeons and perfusionists throughout the world. The Hemocor HPH family of hemoconcentrators are designed to meet the needs of both adults and pediatric patients, and is used worldwide by many of the leading hospitals.

- Polysulfone membrane offers excellent biocompatibility
- No-rinse fiber for convenient set up

### Hemofilters

Used in the prevention or relief of fluid overload, electrolyte and acid/base imbalances in cases of acute renal failure with oliguria or anuria, congestive heart failure, pulmonary and cerebral edema, anasarca, ascites, septic shock, burns, etc. The Renaflo II HF filters can be used in all hemofiltration and hemodiafiltration applications.

- Meets the biocompatibility requirements of ISO 10993-4 selection of tests, for interactions with blood
- Designed using glycerine free polysulfone membranes

## Custom & Process Filtration

Mar Cor has the capability to manufacture unique products with private labeling and customized packaging. Being a medical device manufacturer and working under a first rate Quality system makes us a unique partner for development. Our facility is certified to ISO 13485. Developing a custom product with our fiber can be accomplished with our in house resources including:

- Product design
- Packaging
- Validation and Regulatory support
- Prototyping
- Performance testing capabilities
- ISO 13485 certified facility

### Applications

- Cell Bioreactors/Cell culturing engineering
- Microsphere
- Virus Filtration
- Bioartificial liver treatment
- Encapsulated cell technology (ECT) for ocular implant
- Bidelivery technology for central nervous disease disorders
- Treatment of sepsis and liver failure
- Vapor transfer cartridge for respiratory care

# Critical Area Fogging and Bio-Decontamination

Minnicare Dry Fog® Systems provide an easy to use, high technology solution for clean room and critical area Bio-Decontamination. The combination of highly effective Minnicare® Cold Sterilant and the state of the art Dry Fog delivery system enables users to rapidly and safely deliver Minnicare® vapor to even the most complex areas. Its sanitary and autoclavable design will permit its use in the most critical areas within pharmaceutical and other industries concerned with maintaining the utmost levels of sterility.

Clean Room

Lock

cRABS

Isolator

Biohazard Cabinet

Animal Room

## Minnicare Dry Fog® Systems



The Minnicare Dry Fog® equipment is designed to produce fine droplets that average 7.5 microns in diameter, which will ensure even dispersion of the Minnicare® solution throughout the room. These small droplets will tend to bounce off of hard surfaces and thus avoid excessive condensation, corrosion and surface wetting issues associated with systems producing larger droplets.

The lack of toxic aldehyde vapors results in extremely short process times—over 95% faster than some conventional systems. This means less production downtime and lower total costs. Typically, the entire process can be completed in less than 3 hours, depending upon room size and ventilation system efficiency, compared to up to 3-5 days with some conventional systems.

### Minnicare Dry Fog® 2 System

- The safest & most effective Clean Room Bio-Decontamination procedure available
- Controlled and consistently accurate droplet size minimizes risk of condensation
- Ensured penetration of Minnicare® into normally inaccessible areas
- Effective dispersion in all areas of room including multiple rooms areas up to 1000m<sup>3</sup>
- 8 different spray nozzle(s) position possibilities for higher flexibility

### Minnicare® Mini Dry Fog System

- Single units are suitable for use in volumes up to 20 m<sup>3</sup> or a 700 ft<sup>3</sup> room
- For use in biological safety cabinets, cRABS, glove boxes, pass-through rooms, and ambulances
- Can be easily built into small cabinets as an inexpensive alternative to H<sub>2</sub>O<sub>2</sub> vaporization systems.

Fiberflo is a registered trademarks of Mar Cor Purification, Inc., A Cantel Medical Company.  
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