

Mar Cor Purification

Minncare® Dry Fog Technology



An Integral Part of Modern Critical Area Disinfection Procedures

The Safest & Most Effective Clean Room Bio-Deco

Clean Room • Lock • cRABS • Isolator • Biohazard Cabinet • Animal Room

The Minncare® Dry Fog 2 system provides an easy to use, high technology solution for clean room and critical area Bio-Decontamination. The combination of our highly effective Minncare® Cold Sterilant chemical and our state of the art Dry Fog 2 delivery system enables users to rapidly and safely deliver Minncare® 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. The location and action of the dry fogging head at the highest point of the equipment allows for rapid vapor dispersion and ensures that the most distant areas are reached effectively.

Dry Fog System Advantages

- **100% Coverage**

The Minncare® Dry Fog equipment is designed to produce fine droplets that average 7.5 microns in diameter, which will ensure even dispersion of the Minncare® 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.

- **Lower Capital Costs**

The system is easily adaptable to differing room dimensions and configurations and can be adjusted to suit any room height. It is readily transportable and can be used in multiple locations, needing only a compressed air source to operate. It will deliver an adequate solution quantity to rooms up to 35,000 ft³ (1000 m³). Beyond this size, multiple machines may be required.

- **Ease of Validation**

Minncare® is a peracetic acid and hydrogen peroxide based proprietary chemistry developed by Medivators for optimized biocidal efficacy. It is registered by the EPA for use as a fog to enhance existing cleaning and disinfection process. Minncare® Dry Fog is used by hundreds of FDA audited Pharma Companies.

- **Environmentally Friendly**

The Dry Fog System utilizes Minncare®, a fully biodegradable sporicide that will leave no measurable air residuals once the room has been fully ventilated. Minncare® contains only pharmaceutical quality raw materials, limiting the introduction of any undesirable components into the clean room environment.

- **Reduced Time & Labor**

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.



Decontamination Procedure Available.

The Complete Solution for Clean Room and Critical Area
Minncare® Fog Dispersion

Optimal System... Optimal Efficacy.

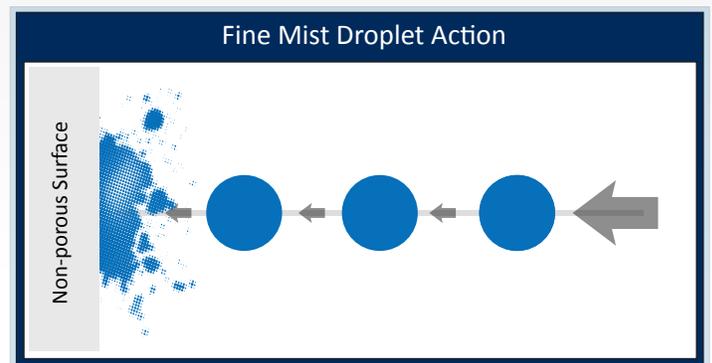
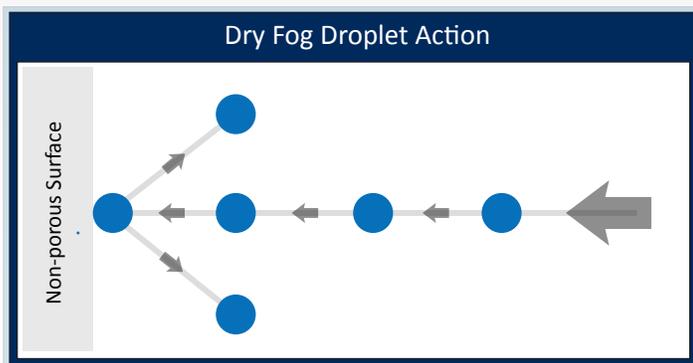
The Difference is the Droplet Size.

| Dry Fog Droplet Size | | | | |
|---|---|---|--|--|
| 10µm | 100µm | 300µm | 1000µm | |
| Ultra-Fine Atomization | Fine Atomization | Semi-Fine Atomization | Semi-Course Atomization | Course Atomization |
|  |  |  |  |  |
| Dry Fog (under 10µm) | Fine Mist (10µm - 100µm) | Fine Drizzle (100µm - 300µm) | Light Rain (0.3mm - 1.0mm) | Thunderstorm (under 1.0mm) |



The Minncare® Dry Fog equipment is designed to produce ultra fine droplets that average 7.5 microns in diameter, which will ensure even dispersion of the Minncare® solution throughout the room.

Dry Fog Droplet Action



The Minncare® Dry Fog 2 System produces an ultrafine droplet size that tends to bounce off of hard surfaces and thus avoid excessive condensation, corrosion and surface wetting issues associated with a fine mist bio-decontamination procedure.

Contamination Procedure Available.

Choose the System that Fits Your Application.

Mar Cor Purification offers two different Dry Fog Systems depending on the size and accessibility of the application.

Minncare® Dry Fog System™

The Minncare® Dry Fog system provides an easy to use, high technology solution for rooms up to 35,000 ft³ (1000 m³) and was designed specifically for use in pharmaceutical clean rooms.

- Dry Fog Technology validated by hundreds of FDA audited pharmaceutical facilities worldwide
- Controlled and consistently accurate droplet size
 - Minimizes risk of condensation
 - Ensures penetration of Minncare® into normally inaccessible areas
- Effective dispersion in all areas of room including multiple rooms with areas up to 1000 m³ using one single unit
- 8 different spray nozzle(s) position possibilities for higher flexibility
 - Spray diffusion is horizontal or vertical
- Robust construction with easy maintenance and no moving parts
- Does not require electrical connection
- Sanitary construction using 316L Stainless Steel for key components
- 100% autoclavable design
- Over 95% faster than some conventional systems
- Portable system can easily be used in multiple locations
- Substantially lower cleanroom downtime.
- Validatable reproducible procedure according to international Pharma Standards
- Extensive document package and traceability on key parts



Minncare® Mini Dry Fog System

The Mini Dry Fog system provides an easy-to-use, high technology solution for confined-space fogging. The flexibility of the Mini Dry Fog nozzle allows for rapid vapor dispersion and ensures the entire space is exposed to dry fog.

- Single units are suitable for use in volumes up to 20 m³ or a 700 ft³ room and will disperse up to 500 ml of liquid Minncare® solution.
- Eliminates formaldehyde disinfection procedures.
- For use in biological safety cabinets, cRABS, glove boxes, pass-through rooms, and ambulances; the system can be easily built into small cabinets as an inexpensive alternative to H₂O₂ vaporization systems.



Minncare® Cold Sterilant

A Superior, Safe, Environmentally Friendly Biocide

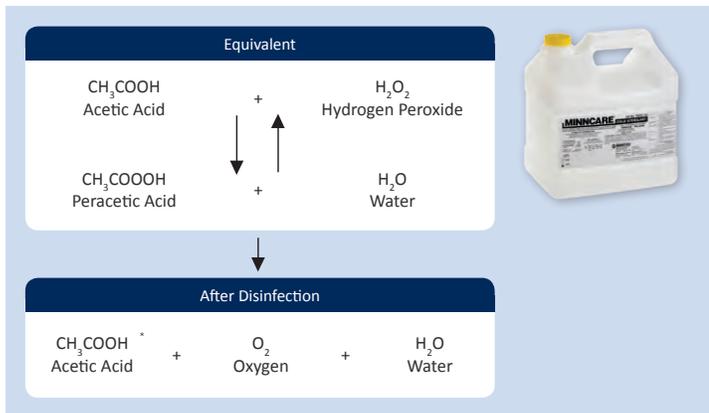
Minncare® Cold Sterilant is a powerful disinfectant containing a proprietary mixture of 4.5% peracetic acid and 22.0% hydrogen peroxide. It is effective against a broad spectrum of organisms including bacterial spores, fungal spores, bacteria, mycobacteria, yeast, molds and viruses. Minncare® Cold Sterilant is not a systemic bactericide. Rather it is a powerful oxidizer that attacks and breaks down the organic components of microorganisms, not just killing them, but destroying their structure. This makes Minncare® Cold sterilant one of the fastest acting and most effective disinfectants available.

Minncare® Cold Sterilant Features & Benefits

- No toxic aldehyde vapors
- Faster and safer to use than aldehyde based disinfectants
- Very effective bactericide, fungicide, virucide and sporicide
- EPA registered for fogging as part of normal disinfection procedures
- Fully biodegradable
- Contains only pharmaceutical quality raw materials
- Less corrosive than aldehyde based liquids
- EPA and CE registered



The Chemistry of Minncare®



* At 20°C AA cannot be a solid on the surfaces and its vapors are vented through the HVAC system

| Minncare Dry Fog Tested according to AFNOR NFT 72-281 | |
|--|---------------------|
| Species | Log Reduction |
| <i>Pseudomonas aeruginosa</i> (CIP A22) | > 7.5 log reduction |
| <i>Enterococcus hirae</i> (CIP 58 55) | 7.0 log reduction |
| <i>Penicillium verrucosum</i> var. <i>cyclopium</i> (IP 1186-79) | 6.4 log reduction |
| <i>Satphylococcus aureus</i> (CIP 53 154) | 6.8 log reduction |
| <i>Candida albicans</i> (IP 1180-79) | 6.8 log reduction |
| <i>Bacillus stearothermophilus</i> spores (CIP 52 81) | 6.8 log reduction |
| <i>Bacillus atrophaeus</i> spores (CIP 52 62) | 6.9 log reduction |

| In Vitro Aqueous Test at 20°C | | |
|--------------------------------|-------------------|--------------------------|
| Minncare Concentration .5% | | |
| Species | Count per ml | Time for 100% kill (min) |
| <i>Bac. subtilis</i> | 6×10^6 | 2.5 |
| <i>Bac. stearothermophilus</i> | 6×10^6 | 2.5 |
| <i>Bac. subtilis</i> NCTC 3610 | 2.4×10^9 | 5.0 |
| <i>Bac. mesentericus</i> | 1.6×10^9 | 5.0 |
| <i>Clostr. perfringens</i> | 1×10^7 | 10.0 |
| <i>Clastr. tyrobutyricum</i> | 1×10^7 | 5.0 |
| <i>Sacchar. cereisiae</i> | 6×10^7 | 0.5 |
| <i>Cand. mycoderma</i> | 1.4×10^8 | 0.5 |
| <i>Hansenula anomala</i> | 6.4×10^8 | 0.5 |
| <i>Pichia membronaefaciens</i> | 4.8×10^8 | 0.5 |
| <i>Pen. cameronense</i> | 1.7×10^8 | 2.5 |
| <i>Mucor plumbeus</i> | 3×10^6 | 2.5 |
| <i>Geotrichum candidum</i> | 2×10^7 | 0.5 |
| <i>Byssochlamys nivea</i> | 6×10^7 | 0.5 |
| <i>Staph. aureus</i> | 2.6×10^9 | 0.5 |
| <i>Strept. faecalis</i> | 4.6×10^9 | 0.5 |
| <i>Kleb. aerogenes</i> | 2.3×10^9 | 0.5 |
| <i>Ps. fluorescens</i> | 4.6×10^9 | 0.5 |
| <i>Ps. aeruginosa</i> | 2×10^9 | 0.5 |
| <i>Salm. thyphimurium</i> | 2.8×10^9 | 0.5 |
| <i>Coryneb. rubrum</i> | 1×10^7 | 1.0 |
| <i>Leuconostoc spec.</i> | 5.3×10^8 | 0.5 |
| <i>Lactob. brevis</i> | 1.8×10^9 | 0.5 |

| Deactivation of Organisms By Minncare Vapor | |
|--|------------------------|
| Estimated spore concentration of filter suspended 1 inch above | B. atrophaeus filter |
| Control: water | loop |
| 10^3 spores | 9.6×10^3 CFU* |
| 10^6 spores | $> 3 \times 10^3$ CFU |
| Minncare solution (1%) | |
| 10^3 spores | <1 CFU |
| 10^4 spores | <1 CFU |
| 10^5 spores | <1 CFU |
| 10^6 spores | <1 CFU |

* Colony forming unit

Mar Cor Purification Dry Fog 2 System

Product Information & Options

System Specifications

| Model | MinnCare Dry Fog 2 System | Mini Dry Fog System (US Version) | Mini Dry Fog System (EU Version) |
|-----------------------------|---|---|--|
| Dry Fog Machine dimensions | 16.5" x 13.0" x 72.0" (42 cm x 33 cm x 183 cm) | 6.6" x 13.1" x 11.4" (16.8cm x 33.5cm x 290cm) | 6.3" x 13" x 17.3" (16cm x 33cm x 44cm) |
| Shipping dimensions | 19.7" x 19.7" x 47.2" (50 cm x 50 cm x 120 cm) | 14.6" x 11.8" x 8.7" (37cm x 30cm x 22cm) | 15.4" x 11.8" x 9.1" (39cm x 30cm x 23cm) |
| Dry Fog Machine weight | 61.7 lbs. (28 Kg) | 9 lbs. (26 Kg) | 9.3 lbs. (4.25 Kg) |
| Shipping weight | 77.1 - 110.2 lbs. (35-50 Kg) | 17.2 lbs. (53 Kg) | 17.6 lbs. (8 Kg) |
| Compressed air supply needs | 75 psi (5 bar) | 75 psi (5 bar) | 75 psi (5 bar) |

Minimum 2.5 scfm (70 liters/minute) air supply per nozzle

| Part Number | Description | Packaging |
|-------------|---|-----------|
| 290-02-101 | Dry Fog 2 Machine, 22L, one Spray Nozzle | per piece |
| 290-02-150 | Heavy Duty 2 Storage Case | per piece |
| 290-01-034 | MinnCare Dry Fog Remote Control Unit (U.S. version) | per piece |
| 290-01-035 | MinnCare Dry Fog Remote Control Unit (European version) | per piece |
| 290-02-103 | Dry Fog 2 Nozzle, 7.5µ | per piece |
| 290-02-140 | Dry Fog 2 Vertical Angle Spray Adaptor | per piece |
| 290-02-141 | Dry Fog 2 Maintenance Kit | per piece |
| 290-02-119 | Dry Fog 2 Extension Tube | per piece |
| 290-01-031 | Dry Fog Vapor Detection Deluxe Pump Kit | per piece |
| 290-01-032 | Dry Fog Hydrogen Peroxide detector tube | per 10 |
| 290-01-033 | Dry Fog Acetic Acid detector tube | per 10 |

MinnCare Cold Sterilant Ordering Information

| United States Part Number | | |
|---------------------------|--|-------------|
| 176-01-001 | MinnCare Cold Sterilant (4 - 1 quart bottles) | 4x1 qt |
| 176-01-002 | MinnCare Cold Sterilant (4 - 1 gallon jugs) | 4x1 gal |
| Canadian Part Number | | |
| 78399-647 | MinnCare Cold Sterilant (4 - 1 quart bottles) | 4x1 qt |
| 78399-646 | MinnCare Cold Sterilant (4 - 1 gallon jugs) | 4x1 gal |
| European Part Number | | |
| 176-01-121 | MinnCare Cold Sterilant (2 - 10 liter bottles) | 2x10 liters |
| 176-01-125 | MinnCare Cold Sterilant (2 - 5 liter bottles) | 2x5 liters |
| 176-01-129 | MinnCare Cold Sterilant (6 - 1 kg bottles) | 6x1 kg |



Dry Fog Vapor Detection System

The Dry Fog Vapor Detection System provides an accurate and simple way to ensure the air inside the room has minimal residual MinnCare Cold Sterilant vapors, ensuring the safe re-entry of operations personnel after minimal ventilation.



Dry Fog Remote Control

The optional wireless remote control unit allows the operator to turn the system on and off from outside the cleanroom.



Mar Cor Purification
4450 Township Line Road
Skippack, PA 19474-1429
Tel: (484) 991-0220
Toll Free: (800) 346-0365
Fax: (484) 991-0230

Mar Cor Purification
14550 28th Avenue North
Plymouth, MN 55447
Tel: (484) 991-0220
Toll Free: (800) 633-3080
Fax: (763) 210-3868

Mar Cor Purification
3250 Harvester Road - Unit 6
Burlington, ON L7N 3W9
Tel: (905) 639-7025
Toll Free: (800) 268-5035
Fax: (905) 639-0425

Mar Cor Purification
Sourethweg 11
6422 PC Heerlen
The Netherlands
Tel: (+31) 45 5471 471
Fax: (+31) 45 5429 695

Mar Cor Purification
1A International
Business Park, #05-01
Singapore 609933
Tel: (+65) 6227 9698
Fax: (+65) 6225 6848