

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**

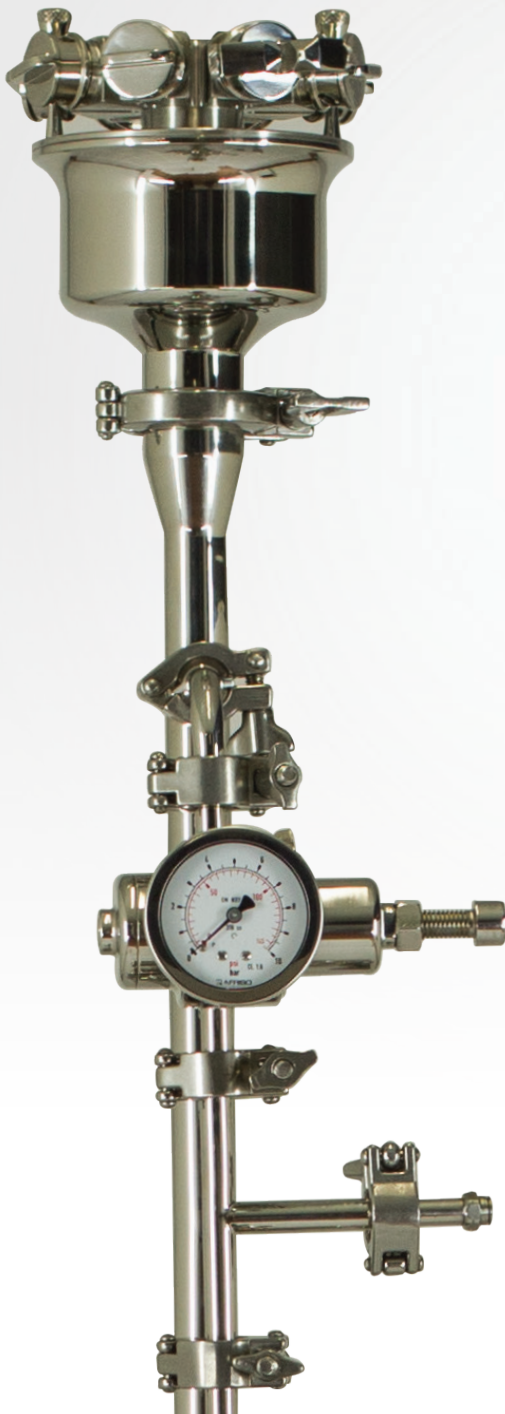
Minncare is a peracetic acid and hydrogen peroxide based proprietary chemistry developed by Medivators for optimized biocidal efficacy. It is registered by the EPA for use as a fog to enhance existing cleaning and disinfection process. Minncare Dry Fog is used by hundreds of FDA audited Pharma Companies.

- **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.



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.
- Validated 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.








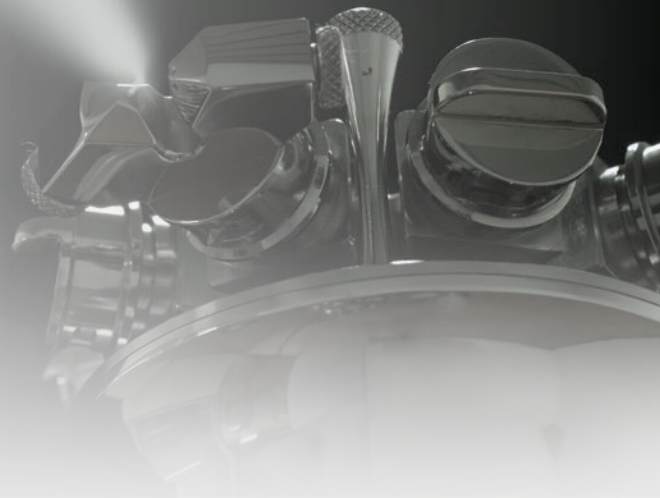
Decontamination Procedure Available.

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

Optimal System... Optimal Efficacy.

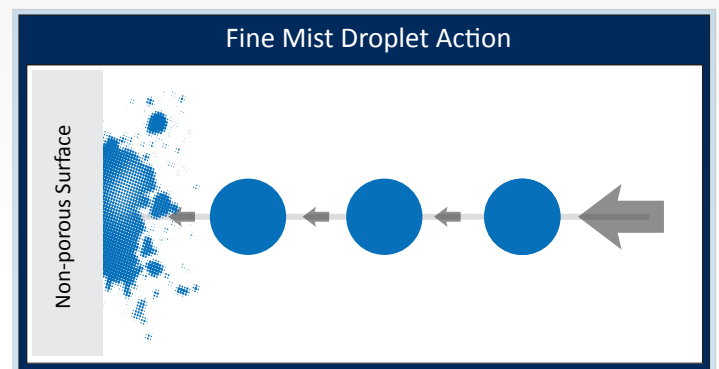
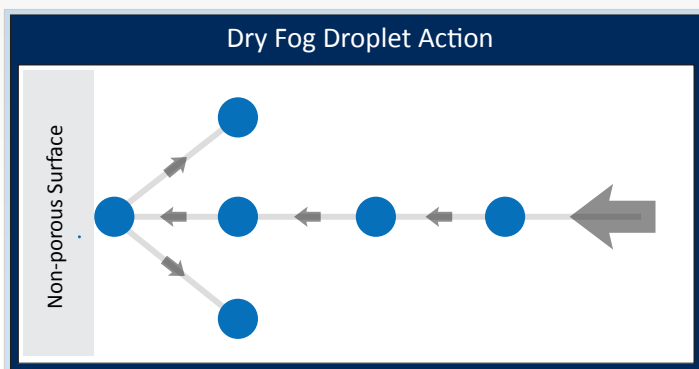
The Difference is the Droplet Size.

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.

Minncare® Cold Sterilant

A Superior, Safe, Environmentally Friendly Biocide

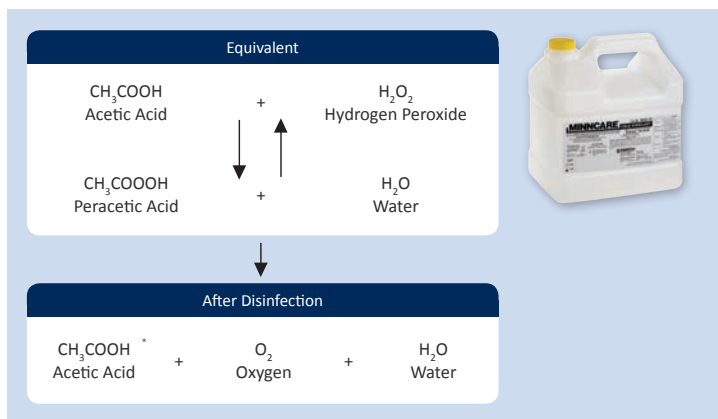
Minncare Cold Sterilant is a powerful disinfectant containing a proprietary mixture of peracetic acid and hydrogen peroxide. It is effective against a broad spectrum of organisms including bacterial spores, fungal spores, bacteria, mycobacteria, yeast, molds and viruses. Minncare Cold Sterilant is not 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

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 x 10 ³ CFU*
10 ⁶ spores	> 3 x 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	

Minncare Dry Fog Tested according to AFNOR NF T 72-281

Species	Log Reduction
Pseudomonas aeruginosa (CIP A22)	> 7.5 log reduction
Enterococcus hirae (CIP 58 55)	7.0 log reduction
Penicillium verrucosum var. cyclopium (IP 1186-79)	6.4 log reduction
Satphylococcus aureus (CIP 53 154)	6.8 log reduction
Candida albicans (IP 1180-79)	6.8 log reduction
Bacillus stearothermophilus spores (CIP 52 81)	6.8 log reduction
Bacillus atrophaeus 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)
Bac. subtilis	6 x 10 ⁶	2.5
Bac: stearothermophilus	6 x 10 ⁶	2.5
Bac. subtilis NCTC 3610	2.4 x 10 ⁹	5.0
Bac. mesentericus	1.6 x 10 ⁹	5.0
Clostr. perfringens	1 x 10 ⁷	10.0
Clastr. tyrobutyricum	1 x 10 ⁷	5.0
Sacchar. cereisiae	6 x 10 ⁷	0.5
Cand. mycoderma	1.4 x 10 ⁸	0.5
Hansenula anomala	6.4 x 10 ⁸	0.5
Pichia membranaefaciens	4.8 x 10 ⁸	0.5
Pen. cameronense	1.7 x 10 ⁸	2.5
Mucor plumbeus	3 x 10 ⁶	2.5
Geotrichum candidum	2 x 10 ⁷	0.5
Byssoschlamys nivea	6 x 10 ⁷	0.5
Staph. aureus	2.6 x 10 ⁹	0.5
Strept. faecalis	4.6 x 10 ⁹	0.5
Kleb. aerogenes	2.3 x 10 ⁹	0.5
Ps. fluorescens	4.6 x 10 ⁹	0.5
Ps. aeruginosa	2 x 10 ⁹	0.5
Salm. thyphimurium	2.8 x 10 ⁹	0.5
Coryneb. rubrum	1 x 10 ⁷	1.0
Leuconostoc spec.	5.3 x 10 ⁸	0.5
Lactob. brevis	1.8 x 10 ⁹	0.5

Mar Cor Purification Minncare 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. (4.1 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
Asia Pacific Part Number		
78397-983	Minncare Cold Sterilant (2 - 10 liter bottles)	2x10 liters
78397-825	Minncare Cold Sterilant (2 - 5 liter bottles)	2x5 liters
78397-229	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.

Minncare® and Minncare Dry Fog® are registered trademarks of Medivators Inc., A Cantel Medical Company.



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