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Nano Particle Technology

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Dry Fog²

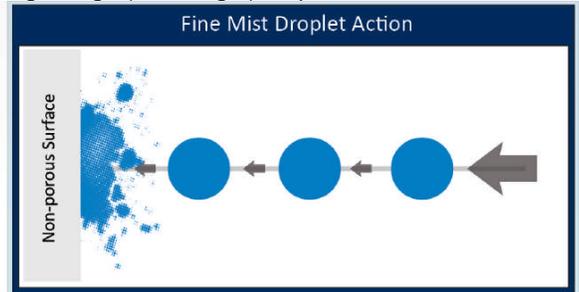
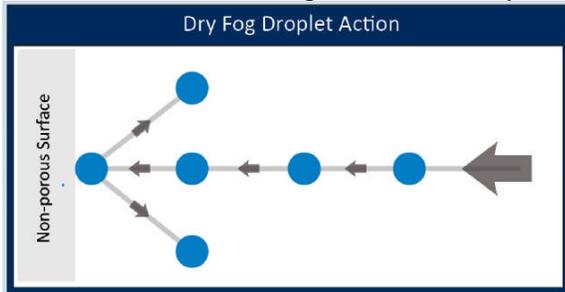
Cold Sterilant, Disinfecting Dry Fogger – Room Sanitizer and Decontamination

The DryFogger system provides an easy to use, high technology solution to disinfect Pharmaceutical suites, clean rooms and critical Medical operating and emergency rooms. Facility Managers, Microbiology Managers and Safety Managers will find this dry fog tool to be highly effective to rapidly kill off 99.9% of microbial, bacterial and fungal contamination.



The combination of cold sterilant disinfecting liquid and DryFogger enables users to rapidly and safely deliver a vapor to every accessible point in process labs and medical rooms. Its sanitary and autoclavable SS fogger design maintains high sterility. The location and action of the dry fogging head is at the highest point of the equipment allowing for rapid vapor dispersion. The lack of toxic aldehyde vapors provide extremely short process times, typically less than 3 hours depending on room size - over 95% faster than conventional systems meaning less production downtime and lower total costs.

The Dry Fog equipment produces an ultrafine droplet size that averages 7.5 µm diameter ensuring a uniform density dispersion of the cold sterilant solution throughout the room. These small droplets bounce off of hard surfaces and nonporous surfaces (*below left*) due to high surface tension, avoiding excessive condensation, corrosion and surface wetting associated with systems using a large (*below right*) droplets.



The small droplets evaporate quickly into a vapor to **penetrate all accessible areas in the room**, leading to a more aggressive disinfecting process. The disinfecting liquid is Peracetic acid and Hydrogen Peroxide, based on proprietary chemistry for optimized biocidal efficacy. It is registered by the EPA for use as a liquid to enhance existing cleaning and disinfection process. It is fully biodegradable and will leave no measurable air residuals once the room has been fully ventilated. DryFogger, cold sterilant contains only pharmaceutical quality raw materials. Powered via optional compressed air supply, 2.5 SCFM per nozzle @ 75 PSI.

Mini DryFogger System

The Mini Dry Fog system provides an easy to use, high tech solution for fogging in confined spaces. The flexibility of the Mini Dry Fog nozzle allows for rapid vapor dispersion to ensure the entire space is exposed to disinfecting vapor.

- ▶ Single Mini DryFogger suitable for room volumes of 20M³ or 700 ft³ to disperse 500ml of Minncare liquid disinfectant solution
- ▶ Eliminates Formaldehyde disinfection procedures
- ▶ Use in biological safety cabinets, cRABS, glove boxes, pass-through tunnels, ambulances, etc. The Mini DryFogger can be built into small cabinets and H₂O₂ vaporization systems.





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DryFogger Features & Benefits

Configurable Spray Head

Newly designed spray apparatus allows for eight different nozzle(s) positions increasing the coverage possibilities for higher flexibility. Additionally, the new head allows for spray diffusion that is horizontal or vertical.

Short Process Time

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.

- Substantially lower clean room downtime
- Regular use may contribute to maintaining low particulate levels due to the suppression of airborne particles
- Lack of noise and ultrasonic vibration during use

Optimal Efficacy with Minncare®

Minncare is a peracetic acid and hydrogen peroxide based proprietary chemistry for optimized biocidal efficacy.

- EPA registered for fogging as part of normal cleaning and disinfection procedures
- Faster and safer to use than existing aldehyde liquids

Minncare Dry Fog Tested according to AFNOR NF T 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>Satyphococcus 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

Dry Fogger and Accessories

1. DryFogger Machine on wheels with 1 Nozzle in support of 8750 Cubic foot volume room
2. DryFogger SS machine nozzle** Up to 4 nozzles per DryFogger providing 8750, 17500, 26250 or 35000 CF room coverage
3. DryFogger Remote Control Unit with On/Off Switch, 165 feet cable length
4. DryFogger Cable Free Thermo-Hygrometer (1 needed)
5. Thermo-Hygrometer sensors (minimum 3 recommended)
6. DryFogger Vapor Detection Kit
7. DryFogger Hydrogen Peroxide Detector tubes, 10 per case
8. DryFogger Acetic Acid Detector tubes, 10 per case
9. Cold Sterilant 4 X 1 Quart case (smallest qty. avail.)

* Large Dry Fogger unit comes complete with wheeled carrying case, IQ-OQ manual, software package, operating instruction manual. Manuals are provided only with ordered system.

**Each nozzle will Dry Fog 8750 Ft³. Systems and parts are 4 weeks ARO (After Order Received).

Highly Flexible System

The system is easily adaptable to differing room dimensions and configurations and can be adjusted to suit any room height.

- Robust construction, with easy maintenance
- Does not require electrical connection
- Sanitary construction using 316L Stainless Steel and Titanium for key components
- 100% Autoclavable design
- Single units are suitable for use in rooms up to 35,000 ft³ (1000 m³) and will disperse up to 14 liters per hour of liquid Minncare Cold Sterilant solution
- Bio-Decontamination of multiple linked rooms simultaneously is possible

Ultrafine Droplets

The Minncare Dry Fog 2 equipment is designed to produce ultrafine atomized droplets which will ensure even dispersion of the sterilant chemical vapors throughout the room.

- Controlled and consistently accurate droplet size
- Minimized risk of condensation
- Ensures penetration into normally inaccessible areas

In Vitro Aqueous Test at 20°C

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