

History

Tech

New Range

Market

Examples

Competitors

Chemical

Commercial Arguments



MRAMA BARCELONA

November 23rd 2017

[History](#)

[Tech](#)

[New Range](#)

[Market](#)

[Examples](#)

[Competitors](#)

[Chemical](#)

[Commercial Arguments](#)

SURFACES AIRBORNE DISINFECTION

Hygiene makes up a whole

[History](#)

[Tech](#)

[New Range](#)

[Market](#)

[Examples](#)

[Competitors](#)

[Chemical](#)

[Commercial Arguments](#)

SURFACES AIRBORNE DISINFECTION

Air bridges the gap between disinfectant and surfaces

SURFACES AIRBORNE DISINFECTION

What do we treat?


- Microorganisms supported by the air
- Unreachable surfaces (it is the only mean)
- Normal or risky surfaces
- Equipments
- Consummable
- Packaging

SURFACES AIRBORNE DISINFECTION

What is airborne disinfection?

- A couple machine- disinfectant
- No people in the room
- No waste time
- Disinfectant goes everywhere even on unreachable surfaces
- A specific Norm

Surfaces Airborne Disinfection



What is the standard to prouve
efficacy? 72-281 NFT Norm
French Standard but will become European soon

72-281 NFT Norm

2014 update

- Bactericidal effect: 5 Log reduction
- Fungicidal effect: 4 Log reduction
- Sporocidal effect: 3 Log reduction
- Virucidal effect: 4 Log reduction

→ A couple Machine-disinfectant

About the new version of NFT 72-281 (V. 2014)

Micro-organisms tested and Efficacy tests				
		Human Health	Veterinary	Food, Industries
Bacteria	<i>P. aeruginosa</i>	5	5	5
	<i>S. aureus</i>	5	5	5
	<i>E. coli</i>	5	5	5
	<i>E. hirae</i>	5	5	5
Spores	<i>B. subtilis</i>	3	3	3
Yeasts and Molds	<i>C. albicans</i>	4	4	4
	<i>A. brasiliensis</i>	4	4	4
Viruses	<i>Bovine Enterovirus</i>	NA	4	NA
	<i>Murine Norovirus</i>	4	NA	4
	<i>Adenovirus type 5</i>	4	NA	NA
Bacteriophages	P001	NA	NA	4
	P008	NA	NA	4
Mycobacteria	<i>Mycobacterium avium</i>	NA	4	NA
	<i>Mycobacterium terrae</i>	4	4	4

Surfaces Airborne Disinfection

Caution:

To compare spraying system with airborne disinfection

Spray: 25 up to 50ml/m²

Airborne disinfection: 10 up to 12ml/m³, it means 2ml/m²

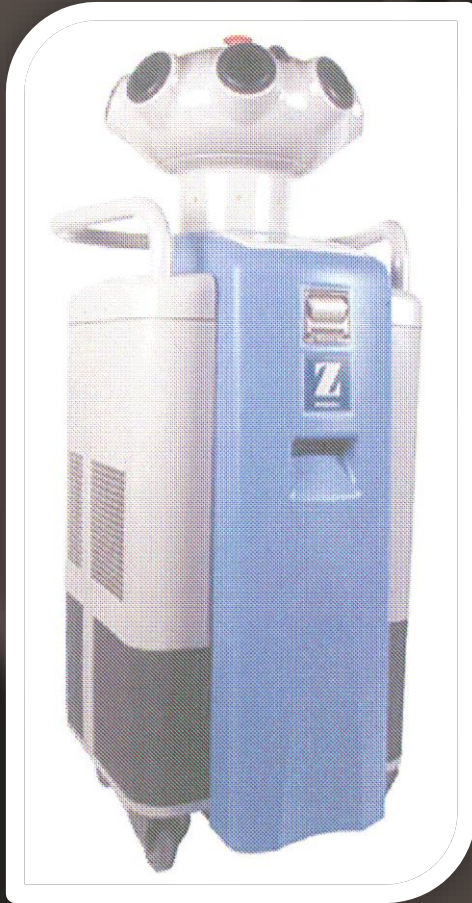
AIRBORNE DISINFECTION TECHNOLOGIES



- Venturi System



AIRBORNE DISINFECTION TECHNOLOGIES



Vapor System



The process

Spinning disc to centrifuge a liquid



About Chemical to use

Actives ingredients:

- Formaldehyde
- Hydrogen peroxide
- Peracetic acid
- Mix glutaraldehyde-quaternary ammonium
- Chlorine dioxide



ACTIVE INGREDIENTS EFFICACY

	Bactericide	Fungicide	Virucide	Sporicide
Chlorine	+++	++	++	
Chlorine dioxide	+++	++	+++	++
Alcohol	++		+	
Phenol	+++	++	+	
Aldehyde	+++	++	+++	+++ Glutarald.
Quaternary Ammonium	++	+++	++	
Alkylamine	+++	++	++	
Biguanidin	++	+	+	
Hydrogen peroxide	+++	++	+++	++
H2O2+APA	+++	+++	+++	+++

About Chemical to use

Hydrogen peroxide:

- Ready to use (<8%)
- Concentrated (30-35%)
- Concentrated to be diluted (20-25%)

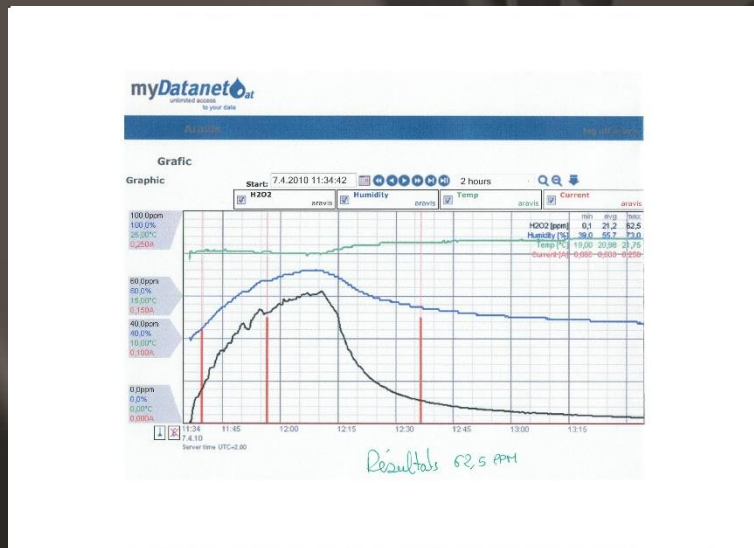
QUESTIONS:

- Is it safe for user?
- Is it classified as hazardous?
- Is it corrosive?

Behaviour of H2O2

After diffusion of O2SAFE:
 $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2$

After diffusion of PHILEASAFE:
Peracetic acid $\rightarrow \text{H}_2\text{O} + \text{O}_2 + \text{acetic acid}$
If surfaces are dry, no acetic acid residue



Residue of H2O2 to enter a
room after diffusion?
1ppm

How to prouve efficacy?

1- Microbiological validation

- Chose risky places in the room or in the Equipment
- Place BI at these places
- Each one with a color and a number
- Treat the room or equipment
- After contact time, take BI one by one and put it into a culture medium
- Put tubes inside an incubator at 55°C
- Read after 3 days and 7 days

What to use as BI?

GEOBACILLUS STEAROTHERMOPHILUS
on inox support.

Supplier: MESALABS

Concentration: 4, 5, 6 Log in once

Culture medium: Trypcase soy liquid
medium

How to prouve efficacy?

2- Chemical validation

- Chose risky places in the room or in The equipment
 - Place white sticks at these places
 - After diffusion and contact time
- You check these sticks: if color is blue
It means that the product was there...but no microbiological information.

Advantage: you have information just after treatment

What to use as stick?

MERCKOQUANT:
H2O2 detection: 1-100ppm

QUANTOFIX:
H2O2 detection: 1-100ppm

MAIN APPLICATIONS

- Cleanroom disinfection
- BSC decontamination
- Equipments disinfection
- Locked cabinet disinfection
- Locked rooms
- glovebox
- Rooms in hospitals
- Cool rooms
- Incubators
- Freeze dryer
- Animal facilities
- Manufacturing facilities
- Ambulances
- Medical equipment
- Animal cages
- Packing machines

Services companies

Trucks for transport

Dentists, grafting

Laminar flow manufacturers

Locked cabinet manufacturer



History

Tech

New Range

Market

Examples

Competitors

Chemical

Commercial Arguments

And now some questions?



To know more...come to see NIRCO booth

[History](#)

[Tech](#)

[New Range](#)

[Market](#)

[Examples](#)

[**Competitors**](#)

[Chemical](#)

[Commercial Arguments](#)

APPENDIXES



History

Tech

New Range

Market

Examples

Competitors

Chemical

Commercial Arguments

Focus on the 3 Technologies

Venturi
Vapor
Centrifugation



Technology Comparaison

History Tech New Range Market Examples Competitors Chemical Commercial Arguments

	VENTURI SYSTEM WITH NOZZLE	VAPOR	SPINNING DISC
Energy Power	Compressed Air or Electrical main power	Electrical main power and Compressed Air	Battery or Electrical main power
Volume treated (with machine inside)	2 - 1000 m3	15 - 200 m3	0,25 – 600 m3
Droplets	5-25 Microns	<1 Micron	5 -10 Microns
used chemical	Ready to use or concentrated product	Ready to use but concentrated product	Ready to use low concentrated product
Typical Cycle	Mono cycle	Preconditionning air to correct RH Vaporize H2O2 and pass into air Contact period Decontamination phase	Mono cycle or multicycle for MSC maintenance
Total Procedure Time	1h30 up to 4h	2h up to 6h	0,5h up to 3h
Protocole Difficulties	Assembly of the machine (only dry fog) Compressed Air connection (only dry fog) Not to close from wall	Using machine very technical Humidification Cycle procedure time very long	No one
Traceability	Yes or no	Very high	Very High with Tablet
Competence needed	low	Very high	No specific
Manipulation	Easy except Dry fog	Machines are massive enough and heavy even for small volumes	Portable & easy to move. Very small machines for small volumes
Corrosivity risks	Depend of chemical concentration or RH	High corrosivity risks	No risk because of the composition of exclusive Chemical
Diffusion Heads	Nozzles, can easily block	Vaporization by heat	No nozzle but spinning disc
Assembly and programming	Easy except dry fog	Lot of electronics so risks of failure Its use requires a high training or implementation of a specific technician	No complicated setup or assembly needed Very simple and logical programming Wifi control with a Tablet
Chemical Risks	Hazardous chemicals need special precautions	Hazardous chemicals need special precautions	No hazardous chemicals are easy to transport or handle without special precautions or equipment Easy to fill
Machine Range	Dry Fog Nocospray Diosol Aseptanios Sanosil	Bioquell VHP (Steris range)	Phileas

History

Tech

New Range

Market

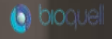















Examples

Competitors

Chemical

Commercial Arguments

Analysis of competitors

Examples	BIOQUELL	ASP (J&J)	STERIS	ANIOS		MARCOR		NOCOSPRAY	DIOSOL
									
									
Country	US	US	US	France	France	US	US	France	Germany
Product Name	Bioquell Z	Glosair 400	VHP 1000	Aéroscept 250	Aéroscept 500	Minidryfog	Dryfog 2	Nocospray or other names	Diosol generator
Technology	Vapor	Venturi	Vapor	Venturi	Venturi	Venturi	Venturi	Venturi	Venturi
Particle size	<1µm	8-12µm	<1µm	10-12µm	10-12µm	7,5µm	7,5µm	>12µ	nc
Volume treated	20-400m3	15-200m3	20-500m3	1-250m3	30-500m3	1-20m3	1000m3	1-500m3 ??? Sérieuses réserves	20-450m3
Weight	70	55	227	6	32	4,25	28	5.8Kg	20
Easy to move	*	*	*	*****	***	***	*	****	*
Batterie	no	no	no	no	no	no need	no need	No	no
Traceability	Yes	Yes	Yes	yes	yes	no	no		no
Programmation system									
cordless control	Yes	Yes	No	No	No	No	No	No	No
Chemical									
name	BQ783	sterisil	Vaprox	Aseptanios AD	Aseptanios AD	minicare	minicare	Nocodyse®	Diosol
H2O2 (%)	30 %	5%	35%	5%	5%	21%	21%	5 to 6%	?
added product		silver ions		peracetic acid	peracetic acid	peracetic acid	peracetic acid	silver ions	silver ions
concentrated or ready to use	ready to use	ready to use	ready to use	ready to use	ready to use	concentrated	concentrated	ready to use	ready to use
dose to use	10 ml/m3	6ml/m3	15ml/m3	7ml/m3	7ml/m3	1,5ml/m3	1,5ml/m3	1-12ml/m3	
conform NFT 72-281 or eq.	Yes	no	eq.	yes	yes	yes	yes	yes	no
contact time	3-6h	1h	6-12h	2h	2h	1h	1h	2h	2h
calfeutrage	yes	yes	yes	no	no	yes	yes	no	no
Toxicity/corrosion									
added fans	yes	no	yes	no	no	no	no	no	no
Price	60 000	7000	40000	3200	6500	7500	26000	2400	