

# EcoSAFE®

THE NEXT GENERATION IN INFECTION CONTROL

Disinfectant & Fumigating Solution



The EcoSafe Disinfectant is the most approved and most tested 100% natural technology of its kind available globally.

# EcoSafe® Hospital Grade Disinfectant

Leader in a new class of disinfectants, known as super oxidized water or stabilized HOCl manufactured in purest form:

- EPA, US FDA Registered and CE Approved.
- 100% chemical free, Non-corrosive, Non-toxic, Non-carcinogenic, pH neutral
- A safer disinfectant with consistent quality

EcoSafe®, a powerful oxidant is indicated to sterilize hard surfaces by spraying directly onto the surface, for medical devices by submerging the device in EcoSafe®, and also for fumigation into the air-space.

When fumigated, EcoSafe® has demonstrated the ability to kill a wide range of airborne pathogens and significantly reduce the spread of infectious disease. EcoSafe® is designed and recommended to be sprayed in the presence of Human traffic, exposing the public to the solution.

## PRODUCT COMPOSITION



## Efficacy

- Broad Spectrum Anti-Microbial - **99.9999%** effective in killing Microorganisms - viruses, bacteria, spores, fungi and biofilm within 30 seconds<sup>1</sup>
- Has a history of two decades, having been used in previous pandemics such as **SARS, MERS** and **Ebola**<sup>1</sup>
- **80-100 times more effective than Alcohol and Bleach** at same concentration<sup>2</sup>

### EcoSafe reduces 99.99% of VIRUSES in 30 seconds

Virus	Performance
Human Hepatitis B (DHBV surrogate)	>99.00% reduction within 30 seconds
Human Hepatitis C (BVDV surrogate)	>99.99% reduction within 30 seconds
Human Immunodeficiency (HIV-1/Mn)	>93.94% reduction within 30 seconds >99.99% reduction within 2.5 minutes
Rhinovirus 14 (ATCC #VR-284)	>99.49% reduction within 30 seconds
Norovirus (ATCC #VR-782)	>99.94% reduction within 30 seconds
Human Influenza A H1N1 (ATCC #VR-1520)	>99.99% reduction within 30 seconds
Avian Influenza H3N2 A/turkey/OH/31053/04 (AI CAD Program, University of Maryland)	>99.99% reduction within 30 seconds
Herpes Simplex type 1 (HSV-1)	>99.00% reduction within 30 seconds

### EcoSafe reduces 99.99% of BACTERIA in less than 15 seconds

Bacteria	Study Type
Acinetobacter baumannii	ATCC #19003
Acinetobacter baumannii	Clinical Isolate: BSLI #061901Ab3
Clostridium difficile C-diff	ATCC #9689
Enterococcus faecium VRE, MDR	ATCC #51559
Staphylococcus aureus MRSA	ATCC #700698
Staphylococcus aureus VRSA	BSLI #062707NARSAVRSal
Neisseria gonorrhoeae	ATCC #19424
Neisseria meningitidis	ATCC #13102
Mycobacterium Tuberculosis	Biomedical Research Center, University of Quindio

### EcoSafe has demonstrated to be effective also against - SPORES and FUNGUS

Spores	Study Type	Performance
<b>Clostridium difficile</b>	ATCC #700057	>99.7% reduction in after 30 seconds in in-vitro testing
Bacillus atrophaeus	Anthrax surrogate	>99.99% reduction after 2 minutes in in-vitro testing
Aspergillus spp (black mould spores)	University of Costa Rica, Faculty of Microbiology	>99.99% reduction
Bacillus cereus spores	University of Costa Rica, Faculty of Microbiology	>99.99% reduction
Fungus	Study Type	Performance
Candida albicans	ATCC #10231	>99.99% in-vitro reduction in as little as
Candida albicans	Clinical Isolate: BSLI #042905Ca)	15 seconds
Fusarium spp.	Annals of pathology & laboratory medicine 2017	>99.99% in-vitro reduction in as little as
Curvularia spp.	Annals of pathology & laboratory medicine 2017	>99.99% in-vitro reduction in as little as
Bipolaris sp.	Annals of pathology & laboratory medicine 2017	>99.99% in-vitro reduction in as little as

## Safety

- **100%** Chemical free, Non-Corrosive, Non-Toxic, Non-Carcinogenic & pH Neutral - No Preservative and No Fragrance<sup>3</sup>
- **Can be used in the presence of all adults**, children, babies, elderly people, people with underlying health issues also in the presence of animals- no need to vacate the premises.<sup>4</sup>
- **100% Biodegradable**: poses no risk to the environment.

### Toxicity Tests

Study	Guidelines	Results
Cytotoxicity (in-vitro)	ISO 10993-5	Non-toxic, grade 0 - in the MEM elution, and Agar overlay methods
Systemic Toxicity	ISO 10993-5	No indication of systemic toxicity, performed same as negative control
Skin Irritation	ISO 10993-10	Irritation response category: negligible
Ocular Irritation	ISO 10993-10	No positive irritation response
Acute Oral Toxicity	US EPA OPPTS 870.1100	No observable abnormalities LD50 >5000 mg/kg
Acute Dermal Toxicity	US EPA OPPTS 870.1200	No observable abnormalities LD50 >5000 mg/kg
Acute Inhalation Toxicity	US EPA OPPTS 870.1300	No observable abnormalities LD50 >5000 mg/kg
Dermal Sensitization	US EPA OPPTS 870.2600	No sensitizing reaction

# TRIPLE MODE OF ACTION

3X



**POWERFUL OXIDISER & DE-PROTEINER**  
EcoSafe Electrolyzed water (HOCL) denatures Lipid/Protein layer of microorganisms as soon as it is sprayed onto the surface of contact



**BROAD SPECTRUM ANTIMICROBIAL**  
Electrolyzed water (HOCL) starts its Action immediately & kills 99.99% microorganisms that comes in contact



**DOES NOT PROMOTE RESISTANCE**  
Its physical mode of action denatures the outer layer (cell wall) Promoting osmotic shock, resulting in Microbial lysis



## Fumigation with EcoSafe

Intended to Disinfect Air-Space (Environment) and all hard surfaces in the room.  
EcoSafe Should be sprayed once, twice or three times in 24 hour period depending on anticipated threat of spread of infectious disease

- ✓ Safe for Humans during Fumigation reducing risk of Hospital acquired Infections<sup>4</sup>
- ✓ EPA Approved Disinfectant for Fogging of Air and Surface Disinfection in the presence of human traffic.<sup>4</sup>
- ✓ Fast acting Antimicrobial, i.e. 30sec contact time action of HOCl , Safe for operators.<sup>1</sup>
- ✓ Available in 5L Can-slides easily in Back Chamber of MICROBURST

### Recommended Dosage for Fumigation

Machine should be placed 1-1.5 meters away from the targeted surface  
X liters in X minutes will Disinfect X square feet

- 8 liters in 60 minutes for 870 Square Feet
- 4 liters in 30 minutes for 550 Square Feet
- 2 liters in 15 minutes for 350 Square Feet
- 1 liter in 7 minutes for 220 Square Feet

- Move the machine slowly across the surface you intend to disinfect (creating a fog or mist type of moisture across the targeted surface).
- The Air-Space (environment) and the floor will effectively be disinfected during the time you are targeting the walls and ceilings.
- Keep area wet for 5 mins. May be dried with clean cloth or let air-dry.



MICROBURST use Ecosafe® - the most tested, most approved, 100% natural disinfectant in the world. Kills SARS-CoV-2 (Covid-19) in 30 seconds.

### EcoSAFE® V/S CONVENTIONAL DISINFECTANTS

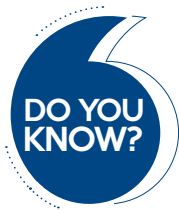
	EcoSafe	Alcohol	Bleach	Peroxide	Quaternary Ammonium	Chlorhexidine	Glutaraldehyde
Kills bacteria	✓	✓	✓	✓	✓	✓	✓
Inactivates viruses	✓	✓	✓	✓	✓	✗	✓
Kills spores	✓	✗	✓	✗	✓	✗	✓
Kills fungus	✓	✗	✓	✓	✓	✗	✓
Inactivates HPV	✓	✗	✓	✓	✗	✗	✗
Inactivates prions	✓	✗	✗	✗	✗	✗	✗
Remains stable for years	✓	✓	✗	✗	✓	✓	✓
Non-toxic	✓	✗	✗	✗	✗	✗	✗
Safe for skin	✓	✗	✗	✗	✗	✓	✗
Safe for eyes	✓	✗	✗	✗	✗	✗	✗
Safe for mucosa	✓	✗	✗	✗	✗	✗	✗
Safe for inhalation	✓	✗	✗	✗	✗	✗	✗
Hypo-allergenic	✓	✗	✗	✗	✓	✗	✗
Safe for use (No PPE needed)	✓	✗	✗	✗	✗	✗	✗
Safe for food contact	✓	✗	✗	✗	✗	✗	✗
Rinse-free	✓	✓	✗	✗	✗	✗	✗
Environmental friendly	✓	✗	✗	✓	✗	✗	✗
Biodegradable	✓	✓	✓	✓	✗	✗	✗
Not explosive	✓	✗	✗	✗	✓	✓	✓
Not flammable	✓	✓	✓	✗	✗	✓	✓
Does not stain or discolor	✓	✗	✗	✗	✓	✗	✓
No resistant organisms	✓	✗	✓	✓	✗	✓	✓
Odor control	✓	✗	✓	✓	✗	✗	✗
Biofilm slime disruption	✓	✗	✗	✓	✗	✗	✗

\* With the exception of oral contact

Pure HOCl comparison chart for safety and efficacy [SDS matrix courtesy of Briotech, Inc.]







## A Revolution in infection control and prevention?

A Revolution In Infection Control & Prevention The Microcyn Technology behind the EcoSafe® Disinfectant is the original, patented biotech breakthrough. For almost 20 years we are leading our technology sector with the most approvals and independent testing. It is the world's first and only shelf stable product of its kind which is entered in the Australian TGA (Therapeutic Goods Administration) ARTG as a "Registered, Hospital Grade Disinfectant" and approved to kill both enveloped (COVID-19) and non-enveloped viruses within 30 seconds.

### How to use EcoSafe?

It's multipurpose usage allows it to be sprayed on the desired surface to be sterilized, such as: hands, body, clothing, toys, hospital beds, mobile phones, tableware, air, toilets, etc. It is recommended to air dry after spraying. If it is urgently needed, it is recommended to dry it with a clean paper towel after sterilization. HOCl is a powerful oxidant that is effective against invading bacteria, fungi, and viruses. HOCl is now used in healthcare, food safety, water treatment, and etc.

### Hypochlorous Acid (HOCl) vs. Hypochlorite (Chlorine Bleach)?

Although they are similar, hypochlorous acid (HOCl) and hypochlorite (OCI-) are still very different. It would be like comparing grape juice to wine. Hypochlorite ion (OCI-) carries a negative electrical charge, while hypochlorous acid (HOCl) carries no electrical charge. The hypochlorous acid moves quickly, able to oxidize the bacteria in a matter of seconds, while the hypochlorite ion might take up to a half hour to do the same. Germ surfaces carry a negative electrical charge which results in a repulsion of the negatively charged hypochlorite ion to the area of the germ surfaces, making hypochlorite ion less effective at killing germs. The hypochlorous acid's lack of electrical charge allows it to more efficiently penetrate the protective barriers surrounding germs. Hypochlorous acid to be 70-80 times more efficient at killing microbial pathogens than chlorine bleach (OCI-).

### What is the shelf life of EcoSafe HOCl Disinfectant?

The shelf life of HOCl is closely dependent on the process of manufacturing the HOCl itself. Since EcoSafe® is made by natural sources, the shelf life is approximately 24 months if it is unopened.

### How EcoSafe is claimed as Biodegradable?

HOCl is naturally produced in white blood cell to combat against microbial. Over a long period of time, due to its natural processing and reversible process, HOCl may restore to water as it loses its charges. EcoSafe® HOCl is biodegradable of its nature itself. HOCl furthermore is also classified as non-hazardous in accordance to Department of Occupational Safety and Health (DOSH).

### Do I need to dilute EcoSafe Disinfectant before using it?

EcoSafe® Disinfectant concentration is 80ppm-100ppm. It can be used readily as EPA regulations approve concentration of HOCl. As for food application, FDA have approved up to maximum of 60 ppm. **There is NO dilution required for applications.**

### How long does HOCl can last on sprayed surfaces?

EcoSafe® can last up to 3 to 4 hours when it is sprayed on area of desired surfaces.

### Proven Benefits?

Immediate & significant reduction of harmful viruses and bacteria, as well as odour elimination, is achieved by fumigating key areas throughout any facility. The rapid and efficient application ensures no interruption to day to day operations. Efficient – Safe – Effective. The Microcyn® Technology is backed globally by over 100+ clinical studies and papers and has earned numerous international accreditations and endorsements. EcoSafe® is approved by the U.S FDA, European CE, Australian TGA, Health Canada, UAE Ministry of Health and many more.



EcoSAFE® MATERIAL COMPATIBILITY											ORDERING INFORMATION					
REACTIVE CHEMICALS	MATERIALS										Cat #	Product Description				
	Titanium	Polycarbonate	HDPE	Nitrile	Nylon	PVC	UHMW	Natural Rubber / SBR	Silicone	Aluminium	316 Stainless	Brass	Steel			
	Bleach Solution (Sodium Hypochlorite)	+	●	+	-	-	●	●	-	-	-	+	-	-	7502273995524	Ecosafe Disinfectant - 1 Litre, With Spray
	Hydrogen Peroxide	+	+	+	-	-	●	-	●	●	●	-	-	7502273997283	Ecosafe Disinfectant - 1 Litre, Without Spray (Refill Pack)	
	Iodine	+	●	+	+	-	●	-	!	-	-	-	-	7502273995531	Ecosafe Disinfectant - 5 Litre, Jerrycane	
	Isopropyl Alcohol	●	+	+	+	+	+	+	+	+	+	+	+			
	Phenol (Carbolic Acid)	+	+	+	-	-	+	-	-	+	+	●	-			
	Quaternary Ammonium Salts (Lysol)	+	+	+	+	+	+	+	+	+	+	+	+			
	Peracetic Acid (up to 40%)	-	+	+	●	●	+	+	●	+	+	+	!	!		
	EcoSafe	+	+	+	+	+	+	+	+	+	+	+	+			

Good ● Fair - Not Recommended ^ Conditional / N/A !

(1) Landa-Solis C, González-Espinosa D, Guzmán-Soriano B, Snyder M, Reyes-Terán G, Torres K, Gutierrez AA. Microcyn: a novel super-oxidized water with neutral pH and disinfectant activity. J Hosp Infect. 2005 Dec;61(4):291-9. doi: 10.1016/j.jhin.2005.04.021. Epub 2005 Oct 19. PMID: 16242210. (2) Hypochlorous acid vs Bleach (no date) GenEon Technologies. Available at: <https://www.geneontechnologies.com/blog/hypochlorous-acid-vs-bleach/> (Accessed: 06 June 2023). (3) Performance, Safety and Compatibility Microcyn™ Technology - BiologiQ, [www.biologiQ.nl/UserFiles/b\\_%20MKT41322-01%20Rev%202%20Performance,%20Safety%20and%20Compatibility.pdf](http://www.biologiQ.nl/UserFiles/b_%20MKT41322-01%20Rev%202%20Performance,%20Safety%20and%20Compatibility.pdf). (4) ric Rasmussen, Lori Robins, R Jeremy Stone, & Jeffrey Williams. (n.d.). Inhalation of a fog of hypochlorous acid (HOCl): Biochemical, antimicrobial, and pathological assessment.

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