



## Electro-BioCide Product Specification (EPA Reg #87492-1)

*The Safe and Effective Disinfectant and Decontamination Fluid*

### Creation of Electro-BioCide

Electro-BioCide® (EB) disinfection technology was originally developed to help solve the complex problems associated with the decontamination of highly sensitive and valuable equipment and systems contaminated by chemical and biological warfare agents in military environments. The formulas have been designed and manufactured to have excellent material compatibility characteristics to protect sensitive equipment while at the same time being highly effective against a broad array of microbial pathogens. In laboratory testing, EB has been shown to be less corrosive than non-chlorinated tap water, a key to successful equipment decontamination. From this point, the formula has been formulated to solve unique challenges in health care, life sciences, commercial and industrial settings and industries. Electro-BioCide transcends the shortcomings of traditional chlorine dioxide solutions due to its unique, patented formulation and manufacturing processes. The proprietary formula's active ingredient is 200 parts per million (ppm) of chlorine dioxide (ClO<sub>2</sub>) in a highly energized, water-based fluid. While many of the existing options in cleaning and disinfecting technologies were developed decades ago, Electro-BioCide is new and different in a number of important ways, and is capable of addressing the ever increasing disinfection and sanitization challenges of the twenty-first century. We know of no other product that achieves both a near immediate 99.9999% (six-log) kill on the industry's most stubborn pathogens, yet has a toxicity rating similar to tap-water, or EPA's lowest toxicity rating, Category IV, described as "Practically Non-Toxic".

### EPA Toxicity Categories

EPA Category	Description	Products
I	Highly Toxic & Severely Irritating	Nitric & Peracetic Acid
II	Moderately Toxic & Moderately Irritating	Hypochlorite
III	Slightly Toxic & Slightly Irrigating	Quaternary Ammonium
IV	Practically Non-Toxic & Not an Irritant	Electro-BioCide

### Electro-BioCide Toxicity Results

Test	Result	EPA Category
Acute Eye Irritation	Practically Non Toxic	IV
Acute Dermal Toxicity	Practically Non Toxic	IV
Acute Inhalation	Practically Non Toxic	IV
Acute Oral Toxicity	Practically Non Toxic	IV
Acute Skin Irritation	Practically Non Toxic	IV
Acute Skin Sensitization	Non Sensitizer	IV

## **Recommended Uses**

ELECTRO-BIocide (EB) is an EPA-registered, broad-spectrum, hospital-grade bactericidal and veridical disinfectant and cleaner with an EPA Category IV toxicity rating. Due to the unique, patented processes developed to create the biocide, plus the formula's low level of active ingredients, it is safe for most disinfecting applications. For instance, it can be safely used in food preparation settings without leaving behind harmful residues. It can also be used to disinfect hard surfaces in work areas, health care facilities, day care centers, sports arenas and gyms, veterinary clinics, and any place where people or animals congregate.

## **The Benefits of Using Electro-BioCide**

Electro-Biocide disinfects hard, non-porous surfaces such as stainless steel, chrome and glass, plastic, vinyl, glazed porcelain, glazed ceramic, plastic laminate, sealed terrazzo or granite, linoleum, metal and finished wood. Electro-Biocide is recommended for use in settings such as hospitals, schools, nursing homes, boarding kennels, universities, various health care settings, gymnasiums, hotels & motels, locker rooms, cruise ships, restrooms, dormitory rooms, fitness centers, temporary housing, households and public transportation.

In hospitals and any other patient care facility, EB is recommended for use on the call bell, patient equipment, over-bed tables, restroom fixtures, side tables, trash cans, closets, shelves drawers, telephones, TV remotes, floors and walls.

Electro-BioCide has been developed to quickly and effectively kill bacteria, viruses and fungi. It has been tested by accredited laboratories and in medical care centers, where it has been found to be both safe for workers and highly effective. The formula will not harm equipment or corrode metal, and will not damage sensitive medical electronics and computers, and is safe for use around plants, when properly applied.

## **Easy Applications**

Electro-BioCide can be applied in multiple ways, and a little goes a long way. The solution can be applied directly to surfaces by hand spray bottles, electrostatic sprayers and foggers, or it can be dispensed from a foam bottle and wiped across the surface to be cleaned. Storage is easy; simply keep it in a tightly closed container in a cool room out of direct sunlight and it can remain effective for weeks to months. There is no need to wipe-off any treated area as EB will dry clean and clear. A light application in the form of an electrostatic coating is all that is needed, and there is no need to soak even soft surfaces like curtains, cushions, or bedding.

Electro-Biocide has been tested and proven effective against both enveloped and non-enveloped viruses, and has been listed on EPA's List N as effective against SARS-CoV-2, the viral pathogen responsible for COVID-19. The formula has also been shown to be effective against emerging fungal pathogens such as Candida Auris and has proven efficacy in third-party lab tests against a variety of bacterial, fungal and viral organisms.

Sprayer Disinfectant Test Results Using EPA Guidelines <sup>1</sup>			
Micro-organism	Type	1 Min Kill	10 Min Kill
Pseudomonas aeruginosa (3 lots)	Bacteria	99.9999%	99.9999%
Staphylococcus aureus (3 lots)	Bacteria	99.9999%	99.9999%
Salmonella enteric a	Bacteria		99.9999%
MRSA (Methicillin-resistant Staphylococcus aureus)	Bacteria	99.9999%	99.9999%
VRE (Vancomycin-resistant Eneerococcus faecalis)	Bacteria	99.9999%	99.9999%
Acinetobacter baumannii	Bacteria	99.9999%	99.9999%
Klebsiellia pneumoniae	Bacteria	99.9999%	99.9999%
Clostridium difficile <sup>2</sup>	Bacteria	99.9999%	99.9999%
H1N1 (Influenza Type A)	Virus		99.9999%
Human Immunodeficiency Virus (HIV) Type 1	Virus		99.9999%
Hepatitis	Virus		99.9999%
Rhinovirus	Virus		99.9999%

1. Per EPA Germicidal Spray test protocols. 2. Clostridium difficile is an extremely durable spore-forming bacteria, typically requiring toxic disinfectants to inactivate. Electro-BioCide achieved a 5.7-log reduction in 10 minutes and 6.1-log reduction in 30 minutes, per non-GLP protocols.

## Directions for Use

Electro-Biocide can be used on any pre-cleaned, hard, non-porous surface such as stainless steel, chrome and glass, plastic, vinyl, glazed porcelain, glazed ceramic, plastic laminate, sealed terrazzo or granite, linoleum, metal, and finished wood. It can be used in light applications on and around equipment such as medical equipment, computers, programmable control systems, and in pipelines, tanks, vats, filters and evaporators. EB should be stored in a cool, dark area and kept from heat or sunlight to increase its useful life.

## Application Methods

Treatments can be applied by hand sprayer, electrostatic sprayer or by foggers, depending on the surfaces to be treated and disinfected. The product works well in traditional spray and wipe applications, and is an excellent cleaner for removing gross contamination from high-touch surfaces and for the safe cleaning of bodily fluids.

## Concentration

EB formula is produced at a nominal ~200 parts per million (PPM) of chlorine dioxide (ClO<sub>2</sub>) and is provided as Ready-to-Use (RTU).

## Safety Information

Electro-Biocide has been rated as an EPA Category IV product, or “Practically Non-Toxic”. When applying the product, customary personal protection including eye and respiratory protection for chemical use should be employed. In most settings, protection against any potential pathogens present is more imperative than protection for the use of the formula. While testing has shown that EB is not harmful to persons or animals, the following instructions should be followed:-

**If on Skin:** Normally Electro-BioCide will not harm or irritate skin. If any irritation does occur, wash affected area with copious amounts of soap and water to remove from skin.

**If in Eyes:** Tests have shown that Electro-BioCide will not harm or irritate the eyes. If any irritation occurs, rinse the eye with clean water for 2 minutes, or longer if needed. If irritation persists, seek medical attention.

**If Swallowed:** If swallowed and discomfort or adverse effects occur, consult with a medical professional.

**If Inhaled:** Electro-BioCide aerosols can cause some irritation to mucous membranes in the nose, mouth and airways if sufficient amounts are inhaled. Seek fresh air or adequate ventilation if necessary. Irritation effect will normally subside without treatment, but if irritation persists, seek medical attention.

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