

How to Create a Robust Infection Prevention Program

Creating healthier spaces
and healthier people, one
space at time.

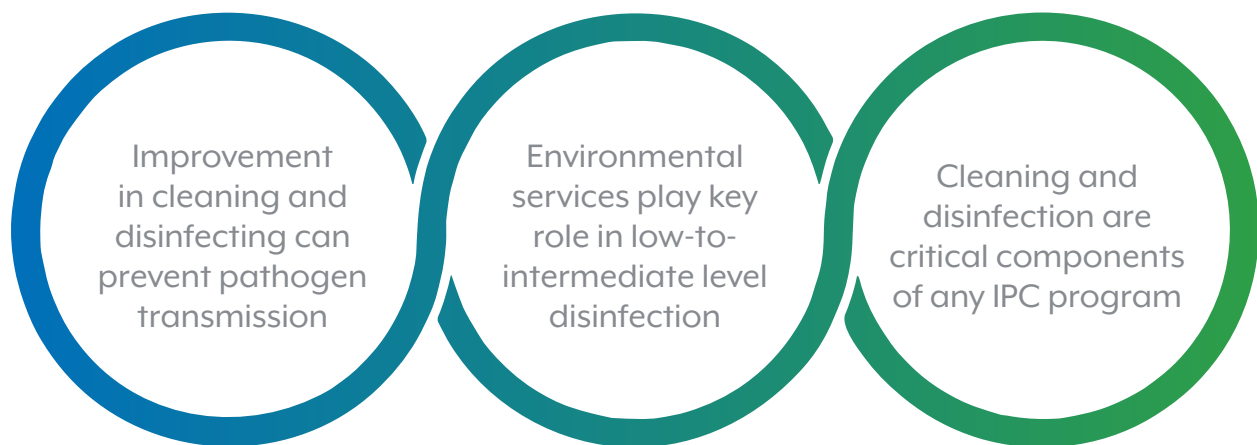




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Significance of this Program



Importance of Infection Prevention and Control

Cleaning and disinfection of environments is an important aspect to reduce pathogen transmission and improve overall safety and healthiness.

According to the World Health Organization (WHO), infection prevention and control (IPC) is a scientific approach and practical solution designed to prevent harm caused by infection to patients and health workers. It is a subset of epidemiology, but also serves an essential function in infectious disease, social sciences and global health.

The purpose of IPC is to identify and reduce the risk of infections among people. IPC is required to prevent the transmission of communicable diseases.

An effective IPC program is an integral part of the CDC One Health Initiative, an approach that recognizes that the health of people is closely connected to the health of animals and our shared environments.

Infectious disease outbreaks are costly and have devastating short and long-term effects. An IPC plan provides an established mechanism to protect against outbreaks and disease transmission. Developing and implementing an effective IPC program requires a committed team trained to execute a clear, precise, IPC plan, with each member having assigned areas of accountability.

Environmental surfaces play an important role in the transmission of pathogenic microorganisms, as many of the pathogens can survive on these surfaces for prolonged periods of time. Cleaning and disinfection of environmental surfaces play a vital role in any facility's IPC program. Choosing the right disinfectant can both ensure the overall success of an IPC program and have a dramatic impact on facility maintenance costs and employee health.

Another fact to be aware of is that once these pathogens have contaminated environmental surfaces, fixtures, furniture and equipment, they can survive for very long periods of time in the absence of effective cleaning and disinfection processes.

Infection prevention and control is one of the first topics introduced in nursing programs, yet its main tenets are often lost or forgotten. Even in healthcare facilities where IPC is considered of primary importance, most do not reliably clean their environments.

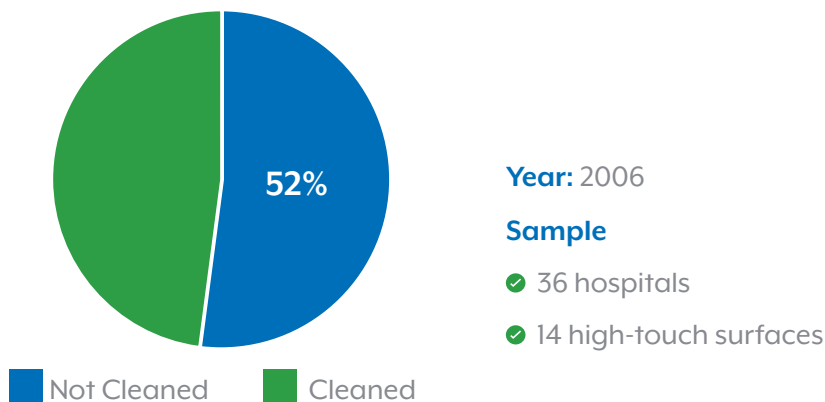


Importance of Infection Prevention and Control

As an example, in one study that used fluorescent markings to assess the effectiveness of discharge cleaning, the investigators found that about half of high-touch surfaces in hospital rooms were not cleaned. These high-touch point surfaces (HTPS) are those surfaces and items in a hospital room that are frequently touched by patients and/or healthcare providers, such as bedrails and overbed tables.

Carling PC, Parry MM, Rupp ME, et al. Improving cleaning of the environment surrounding patients in 36 acute care hospitals. Infect Control Hosp Epidemiol. 2008; 29: 1035-41

Cleaning Care Study in Hospitals






Following proper IPC guidelines will put your facility in a position to reduce the likelihood of unnecessary spread of sickness and infection. A proper IPC program will reduce the risks not only for your patients, but your staff as well.

Cleaning and disinfection can substantially reduce environmental contamination and the associated risk of transmission to infection.



Basic Concepts Related to Cleaning and Disinfection

Cleaning refers to the physical removal of visible soil and other organic matter from objects and surfaces. It does not imply killing any microorganisms. Disinfection is the process that results in the elimination of many or all pathogenic microorganisms on inanimate objects except for bacterial spores. Lastly, sterilization is a process that kills all forms of microbial life, including spores.

	Cleaning	Removal of visible soil and other organic matter from objects and surfaces.
	Disinfection	A process that results in the elimination of many or all pathogenic microorganisms on inanimate objects except for bacterial spores.
	Sterilization	A process that kills all forms of microbial life, including spores.



The Levels of Disinfection

Within the category of disinfection, there are three subcategories or levels. Low level disinfection kills most vegetative bacteria, some viruses, and some fungi, but cannot be relied upon to kill mycobacteria or bacterial spores. Intermediate level disinfection kills vegetative bacteria, most viruses and most fungi, but does not reliably kill bacterial spores. High level disinfection, often referred to as HLD, eliminates all microorganisms except for small numbers of bacterial spores.



Low Level Disinfection:

Kills most vegetative bacteria, some viruses, and some fungi, but cannot be relied on to kill mycobacteria or bacterial spores.



Intermediate Level Disinfection:

Kills vegetative bacteria, most viruses and most fungi, but does not reliably kill bacterial spores.



High Level Disinfection (HLD):

Eliminates all microorganisms except for small numbers of bacterial spores.

*Cleaning is always required before disinfection and/or sterilization.

**Disinfection and Sterilization, CDC Guideline (2008) web: <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html>

***Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008, Rutalla PDF

Disinfection Approach to Spaulding Classifications

Based on the three levels of disinfection, it is important to understand which process is required for various environmental surfaces. The Spaulding Classification is widely used in healthcare settings and defines the minimum level of disinfection or sterilization required based on how the item is used or the part of the body with which it makes contact. In the Spaulding Classification system, non-critical equipment is that which touches only intact skin (skin in which there are no breaks, scrapes, cuts). Examples of healthcare non-critical equipment include blood pressure cuffs, stethoscopes, and environmental surfaces in the patient care environment.

Category (Spaulding Class)	Definition	Examples	Minimum Reprocessing Requirements*
Noncritical Equipment	Objects that touch only intact skin	Blood pressure cuffs, stethoscopes, high-touch environmental surfaces	Low level disinfection
Semi-Critical Equipment	Objects that touch mucous membranes or non-intact skin	Endoscopes, laryngoscopes, respiratory therapy equipment, vaginal specula	High level disinfection (HLD)
Critical Equipment	Objects which enter normally sterile tissue or vascular system	Implants, surgical instruments	Sterilization



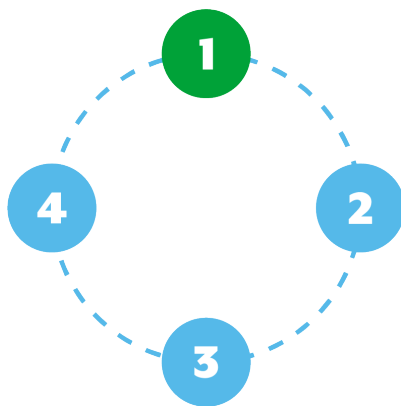
The Four Simple Steps to Infection Prevention and Control

Engage

Educate

Execute

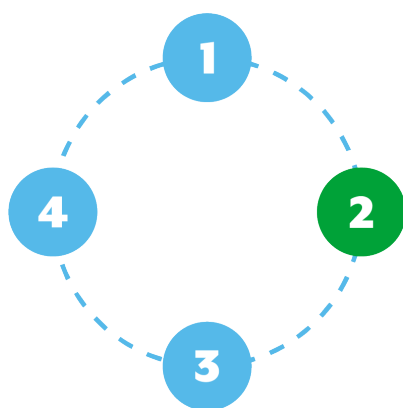
Evaluate



We can help you assess your environmental needs, help clarify roles and responsibilities, identify levels of risk for different areas of your facility, guide you in process-oriented requirements, and establish an infection prevention program that suits your facility's needs.



The Four Simple Steps to Infection Prevention and Control



Based on our initial engagement conversation, we then move on to:

- ✓ Evidence-based interventions to achieve a comprehensive and successful program.
- ✓ Online, self-paced, on-demand Health-e certification training program.
 - Focuses on infection prevention and best practices.
 - Health-e is a public health initiative program using a 5-step approach recognized by industry leading experts.



Especially in light of COVID-19, the program focuses on infection prevention as it relates to the proper cleaning and disinfecting of environmental surfaces. Certified individuals completing the course will learn how to better protect their facilities and occupants with advanced disinfection.

- ✓ Provide your staff with infection prevention and control education and training.
- ✓ Keep your facility open with confidence knowing that your team understands proper cleaning and disinfection procedures and best work practices.
- ✓ Show customers, guests, clients or employees your commitment to health and safety.
- ✓ Get immediate access to your certificate.



Right Roles

Defining right roles and responsibilities



Right Chemistry

Choosing the right disinfectant



Right Frequency

Understanding how often you clean and disinfect



Right Safety

Using the right safety measures



Right Method

Using the right methodologies and evaluation for your facility

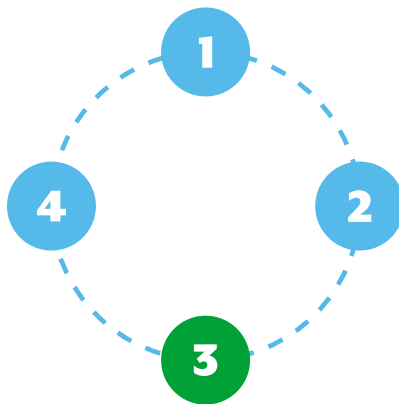
The Four Simple Steps to Infection Prevention and Control

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We then propose a specific program that will meet your environmental needs and demands. We offer three options to benefit your unique environmental cleaning and disinfection requirements.



PACKAGE ONE

✓	Health-e Certification Program
	<ul style="list-style-type: none">✓ Online certification training program.✓ On-demand course—learn at your own pace.✓ Certify your staff and facility to show customers, guests, clients or employees your commitment to health and safety.✓ Get immediate access to your certificates for your staff and facility.✓ Get access to our library of cleaning and disinfection guides and resources.

MViP Silver and MViP Gold are shown on page 11.



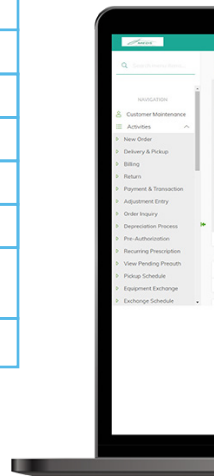
PACKAGE TWO

✓	Health-e Certification Program		✓	MasVida Cleaning and Disinfection Bundle	
	✓	Online certification training program.		✓	EX-7000 TruElectrostatic Backpack Sprayer
	✓	On-demand course—learn at your own pace.		✓	PUR•ONE (cleaner): 6, 12, or 24-month supply
	✓	Certify your staff and facility to show customers, guests, clients or employees your commitment to health and safety.		✓	PUR•TABS (disinfectant): 6, 12, or 24-month supply
	✓	Get immediate access to your certificates for your staff and facility.		✓	Microfiber towel(s)
	✓	Get access to our library of cleaning and disinfection guides and resources.		✓	2.5 gals mixing container(s)
✓	6, 12, or 24 Month Plans		✓	Equipment Guarantee	
✓	Full-Service Concierge Consult		✓	Staff Product Training	
✓	Online Facility Assessment Questionnaire		✓	24/7 Concierge Service	
✓	Program Process Review		✓	Digital Marketing Toolkit	
✓	Assisted SOP Development		✓	Ability to add on additional equipment and chemistry at a discounted price	



PACKAGE THREE

✓	Health-e Certification Program		✓	MasVida Cleaning and Disinfection Bundle	
	✓	Online certification training program.		✓	EX-7000 TruElectrostatic Backpack Sprayer
	✓	On-demand course—learn at your own pace.		✓	PUR-ONE (cleaner): 6, 12, or 24-month supply
	✓	Certify your staff and facility to show customers, guests, clients or employees your commitment to health and safety.		✓	PUR TABS (disinfectant): 6,12, or 24-month supply
	✓	Get immediate access to your certificates for your staff and facility.		✓	Microfiber towel(s)
	✓	Get access to our library of cleaning and disinfection guides and resources.		✓	2.5 gals mixing container(s)
			✓	32 oz blue spray bottles	
✓	6, 12, or 24 Month Plans		✓	Equipment Guarantee	
✓	Full-Service Concierge Consult		✓	Staff Product Training	
✓	Online Facility Assessment Questionnaire		✓	24/7 Concierge Service	
✓	Program Process Review		✓	Digital Marketing Toolkit	
✓	Assisted SOP Development		✓	Ability to add on additional equipment and chemistry at a discounted price	
✓	Infection Prevention ATP Tracking System by Bonafide				



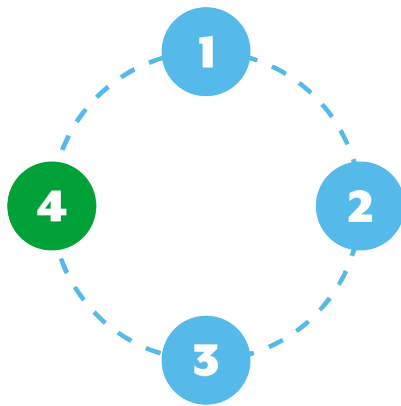
The Four Simple Steps to Infection Prevention and Control

Engage

Educate

Execute

Evaluate



Set up routine quality control measures using our proprietary software:



Track and manage the spread of infection



Contamination analytics by facility, department, and even rooms



Meets and exceeds CMS and CDC guidelines



Reduces financial and admin burdens



Simple, easy to understand dashboard



Assess cleanliness



Infection visualization



Floorplan feature displays your entire facility



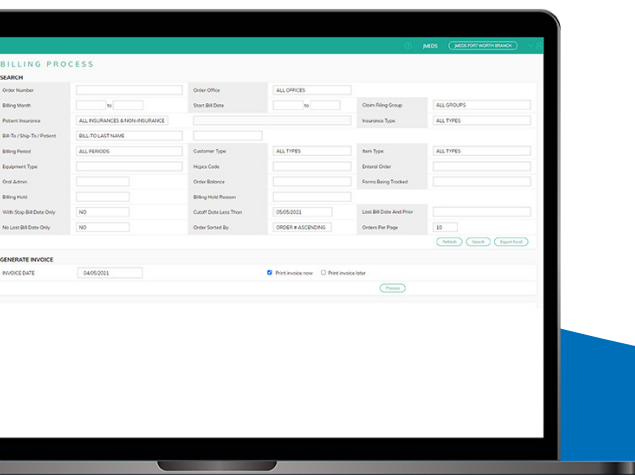
Seamless implementation



Interactive training



On-demand supplies





Factors to Consider When Selecting a Disinfectant

While no disinfectant on the market today is perfect, informative decisions can be made based on a short-list of criteria when searching for the best disinfectant for your environment.

- ✓ Spectrum of activity (“kill claim”)
 - EPA-registered
- ✓ Ease of use
 - Dwell time*
 - Mixing requirements
 - Stability
 - Need for a separate cleaning step
 - Method of delivery
- ✓ Safety
 - Toxicity
 - Flammability
- ✓ Surface compatibility
- ✓ Persistent activity
- ✓ Odor
- ✓ Cost

*Dwell time: the length of time a surface needs to remain wet with a disinfectant to achieve the claimed disinfection activity.

Low Level Disinfection

Disinfection can be confusing because of the number of products available and the differences of opinions about which types of disinfectants should be used in various settings. At minimum and in most instances, low level disinfection is sufficient for non-critical settings.

Type of Bacteria	Quaternary Ammonium	Phenolics	H ₂ O ₂	Hypochlorite (Bleach)	Accelerated H ₂ O ₂ and Peracetic Acid
✓ Bactericidal	Yes	Yes	Yes	Yes	Yes
✓ Virucidal	Yes	Yes	Yes	Yes	Yes
✓ Fungicidal	Yes	Yes	Yes	Yes	Yes
✓ Mycobactericidal	No	Yes	Yes	Yes	Yes
✓ Sporicidal	No	No	+/-	Yes	Yes
✓ Active in presence of organic matter	Yes	Yes		No	Yes
✓ Other characteristics	Some persistent activity	Tissue irritation, skin depigmentation		Corrosive, Eye and skin irritation, instability after dilution	Environmentally safe, more expensive

Top Four Disinfection Myths

According to the CDC, the following characteristics are ideal properties of a disinfectant:

- ✓ Broad Spectrum
- ✓ Fast Acting
- ✓ Not Affected by Environmental Factors
- ✓ Non-Toxic
- ✓ Surface Compatibility
- ✓ Odorless
- ✓ Soluble
- ✓ Stable
- ✓ Cleaner
- ✓ Environmentally Friendly
- ✓ Economical
- ✓ Easy to Use

1

Cleaning and disinfection are the same thing.

False. Cleaning uses detergents and surfactants to break up soil on surfaces, but disinfectants kill or inactivate microorganisms and pathogens in various ways, depending upon the disinfectant used.

2

All disinfectants are created equal.

False. In the US alone, there are more than 8,000 registered disinfectant products available for use. There are several different variations between them all.

3

All disinfectants can be used in the same way.

False. In healthcare settings, you will find a vast difference in products based on concentrations, efficacy, contact times, chemistry make up, and personal protection equipment required, and many disinfectants require you to pre-clean the surface first with a product containing a detergent before you can use a disinfectant on the surface.

4

Cleaning and disinfection is not my job.

False. In any medical setting, infection prevention and control strategies must be a part of everyone's job even if they do not do the cleaning and disinfection procedures themselves. This is an important aspect of maintaining an IPC program.

Understanding Disinfectant Product Labels

When selecting the ideal disinfectant for your facility, an important factor to take into consideration is understanding the product labeling and reading the SDS sheet, on page 16.

The chemical manufacturer/supplier is required under OSHA's Hazard Communication Standard (HCS) to provide the following elements on their labeling. NOTE: Unlike instructions or guidelines, instructions on a disinfectant label are the law, not suggestions!

- ✓ Product Identifiers: Chemical name, code, quantity, etc.
- ✓ Supplier Information: Manufacturer company name and contact information.
- ✓ Pictograms: There are nine different black symbols with a diamond shape red border that depict the hazard classification of the chemical.
- ✓ Hazard Statements: Various detailed phrases describing the hazard associated with a chemical, i.e., flammable gas, fatal if swallowed, causes eye irritation.
- ✓ Precautionary Statements:
 - Four types of precautionary statements must be on each label: prevention, response, storage, and disposal.
- ✓ Signal words: Signal words provide a quick reference to the relative hazard associated with using a product. The EPA requires one of three signal words on the front label of most pesticide product labels:
 - **CAUTION**
Products with the signal word CAUTION are lower in toxicity. A CAUTION label means the pesticide product is slightly toxic if eaten, absorbed through the skin, inhaled, or it causes slight eye or skin irritation.
 - **WARNING**
WARNING indicates the pesticide product is moderately toxic if eaten, absorbed through the skin, inhaled, or it causes moderate eye or skin irritation.
 - **DANGER**
DANGER means that the pesticide product is highly toxic by at least one route of exposure. It may be corrosive, causing irreversible damage to the skin or eyes. Alternatively, it may be highly toxic if eaten, absorbed through the skin, or inhaled. If this is the case, then the word POISON must also be included in red letters on the front panel of the product label.

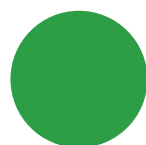
Disinfectant Safety Data Sheets (SDS)

Another important criterion is being able to understand and provide the product safety data sheet (SDS). The supplier or manufacturer of the chemistry should supply you with the appropriate safety data sheet. This is important in helping you make the workplace safe and protect the environment. There are 16 sections to an SDS, that are required under the OSHA/GHS (Globally Harmonized System) labeling. All SDSs are required to contain significant health and safety information specific to the chemistry chosen.

When reviewing the SDS, the following are important sections to keep in mind:

- ✓ **Section 2:** Hazard Identifications
- ✓ **Section 4:** First Aid Measures
- ✓ **Section 7:** Handling and Storage
- ✓ **Section 8:** Exposure Controls and Personal Protective Equipment (PPE)
- ✓ **Section 9:** Physical and Chemical Properties
- ✓ **Section 10:** Stability and Reactivity
- ✓ **Section 13:** Disposal Considerations

Most chemical suppliers or manufacturers will supply you with an SDS of their chemistry in both concentration form and diluted form. This helps to identify risks to consider when using the product in the workplace.



Advanced Electrostatic Disinfectant Sprayers

Many studies have shown that disinfection of surfaces is sub-optimal and effective disinfection requires not only an effective product but also effective and efficient practices. According to the EPA, there has been an increased interest in the use of automated disinfection technologies including the use of electrostatic sprayers for the application of disinfectant solutions for surface treatments. Since COVID-19 evolved, the demand for using such technologies to disinfect large indoor spaces quickly and efficiently has increased tremendously.

What is Electrostatic Technology?

Electrostatics is a branch of physics that studies the phenomena and properties of stationary or slow-moving electric charges (Electrostatics, 2016). Electrostatic phenomena are easily demonstrated when lint is attracted to clothes, or when dust clings to a TV screen. These descriptions are examples of Coulomb's law. Coulomb's law states that opposite electrical charges attract and like charges repel. Electrostatic spraying has been used for many decades in painting and agriculture. EMist uses this same process to apply a charge to the liquid droplets as they are formed and just before the droplets leave the spray nozzle. These "super-charged" droplets then actively seek out negative or neutral surfaces. As the droplets leave the nozzle, the charged droplets repel one another, keeping them from coming together and forming larger droplets. Interestingly, because of the electrostatic charge, droplets "wrap" around surfaces providing an even, consistent surface coverage.

Why Electrostatics?

Here are some key advantages of electrostatic spraying:

- Makes a stronger bond to cover an object more evenly, even if the target surface has many angles.
- This method saves on chemicals by ensuring more disinfectant lands on the target surface area.
- Creates comprehensive coverage because the disinfectant is distributed more uniformly.
- Gives a better means to apply the disinfectant to cover harder to reach surfaces than typical spray and wipe methods can.



Advanced Electrostatic Disinfectant Sprayers

What the EPA Says About Electrostatics

Unlike conventional spraying methods, electrostatic sprayers apply a positive charge to the surface of liquid disinfectant droplets as they pass through the nozzle. The positively charged disinfectant is attracted to negatively charged surfaces, which allows for efficient coating of hard non-porous surfaces.

Disinfectant Droplet Size Matters

The EPA states “spray droplet size should be limited to a volume mean diameter (VMD) of greater than or equal to 40 microns.” In other words, the lower the VMD, the greater the risk of potential user inhalation.

Does Technology Matter?

It is important to note that most environmental surfaces have a negative or neutral charge (the earth itself is negative). As such, for true electrostatic adhesion to occur, electrostatic sprayers should impart a positive charge so that the positively charged disinfectant droplets are attracted to targeted negative or neutral surfaces.



Advanced Electrostatic Disinfectant Sprayers

What to Look for in an Electrostatic Sprayer:

- ✓ **Charge Detect Technology**
The electrostatic sprayer should continuously detect the polarity of the user and the equipment and adjust automatically so that grounding is never an issue.
- ✓ **Patented and Proven**
When you are dealing with pathogens, you want to make sure that the company you are buying from is reputable, experienced, and trusted. The sprayer should be patented, used extensively in real world settings, and developed by electrostatic industry engineers, who are respected with global associations such as WHO.
- ✓ **Polarity**
Most environmental surfaces have a negative or neutral charge. Per the EPA, electrostatic sprayers should impart a positive charge so the positively charged disinfectant droplets are attracted to targeted negative or neutral surfaces. Positively charged droplets increase adhesion and wrap, reducing chemical and labor costs.
- ✓ **Safer Operations**
When spraying big areas, big buildings, or tight spaces, a cordless sprayer allows you to maneuver and move about freely. Portability and user safety are clear advantages for any user who needs to go where the work is to get the job done.
- ✓ **User Safety**
Per the EPA, median droplet size should be greater than 40 microns. Droplets must be large enough to resist evaporation and drift, but small enough so that the droplets can change their trajectory when it comes close to a target. Most sprayers produce droplets of less than 40 microns, making them highly drift prone and increasing inhalation risks.
- ✓ **Lower Total Cost of Ownership**
Based on the need to disinfect large areas, manual application of disinfectants is a thing of the past. Electrostatic application should typically provide 25% to 45% labor savings and 35% to 50% chemical savings. Competitively priced, advanced, and patented electrostatic technology.



Auditing Cleaning Effectiveness

Set up routine quality control measures using our proprietary software. Track and manage the spread of infection:

- ✓ Contamination analytics by facility, department, and even rooms
- ✓ Meets and exceeds CMS and CDC guidelines
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