



2015 HOMELAND SECURITY PROJECT:

ZIMEK MICRO-MIST GENERATOR

Zimek History

- In **2007**, the US Department of Homeland Security first purchased the Zimek Micro-Mist System for use by FEMA at it's **Mount Weather, Virginia Facility**. (600,000 sq ft underground facility that would function as the federal governments EOC in the event of a national emergency)
- Quickly made its way into the Federal Health Care Facilities for decontamination and cleaning.
- Has now been utilized by the **Dept of Homeland security** to help protect firefighters and EMS personnel from pandemic and epidemic threats.
 - Third System in Texas – (Travis County, STRAC, Washington County)

Zimek History

- ◉ Zimek Touch-Free™ **Rapid Decontamination** Systems are **mobile**, rapidly deployed, **easy** to use, and cost-effective. Minimal training is required to operate the systems.
- ◉ Zimek's products are proudly manufactured in the United States.



Overview

- The Zimek system allows for **rapid decontamination** of vehicles and room by dispersing (**even disbursement** of micro droplets of an EPA approved disinfectant).
- These micro-droplets reach everywhere where free air flows allowing for disinfection of the entire area (ambulance, squad car, bus, or room).



Overview

- *The Z-Vac Micro-particle Evacuator* then **removes any remaining droplets** and allows for rapid reoccupation of room or area.
- Zimek's preferred disinfectant (**Vital Oxide**) is a broad spectrum antimicrobial that eradicates a wide variety of bacteria, yeasts, viruses, fungi, spores, mold, mildews, and other microbes.



Cleaning and Disinfection

- ⦿ There are many disinfectants that will kill a broad spectrum of pathogens. The difficulty lies in ensuring that the disinfectant comes into contact with the surface to be cleaned and **remains in contact** with that surface for 10 minutes.
- ⦿ The small size (1 micron) of the droplets produced by the Zimek allows them to disperse into **every available space** and remain there for the required time.

Cleaning and Disinfection

- Zimek's preferred disinfectant was rated by the U.S. Environmental Protection Agency with a **Class 4 toxicity rating**.

EPA Rating System					
	Most Toxic	→			Least Toxic
Study	BLEACH	PHENOLS	QUATS	ZIMEK PREFERRED DISINFECTANT	
	Cat. 1	Cat. 2	Cat. 3	Cat. 4	
Acute oral	Up to 50 mg/kg	>50 through 500 mg/kg	>500 through 5,000 mg/kg	>5000 mg/kg	
Acute dermal	Up to 200 mg/kg	>200 through 2,000 mg/kg	>2,000 through 5,000 mg/kg	>5000 mg/kg	
Acute inhalation	Up to 0.05 mg/liter	>0.05 through 0.50 mg/liter	>0.50 through 2.00 mg/liter	>2.00 mg/liter	
Primary eye irritation	Corrosive or corneal irritation for more than 21 days	Corneal or eye irritation clearing in 8-12 days	Corneal or eye irritation clearing in less than 7 days	Minimal effects clearing in 24 hours	
Primary skin irritation	Corrosive	Severe irritation at 72 hours	Moderate irritation at 72 hours	Mild or slight irritation at 72 hours	
Signal words for labels	DANGER	WARNING	CAUTION	NONE REQUIRED	

- This means that the disinfectant is **safe to apply** and non corrosive so it is safe to use around **sensitive electronics** and medical equipment.

Cleaning and Disinfection

- ⦿ Vital Oxide is EPA approved and has been tested to kill the following organisms:
- ⦿ **MRSA**(*Methicillian-resistant Staph. aureus*), *Psuedomonas aeroginosa*, *E.Coli*, *Salmonella*, *Staph aureus*, *Legionella pneumophila*, *Aspergillus niger*, *Norovirus*, **HIV** Type 1 (HIV-1), *Enterobacter aerogenes* *Listeria monocytogenes*, *Actinobacter baumannii*, *Rotavirus*, *Respiratory Syncytial Virus*, *Influenza A (H1N1)*(formerly called swine flu), *Hepatitis B*, *Hepatitis C*, *Klebsiella pneumonia (NDM-1)*.
- ⦿ It is also the only level 4 toxin EPA has registered as a disinfectant for use against the **Ebola virus**.



October 14, 2014

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Subject: Ebola

According to the **CDC Interim Guidance for Environmental Infection Control in Hospitals** **for Ebola Virus** date August 1, 2014, Vital Oxide would fall under the suggested use disinfectant for non-enveloped virus as Vital Oxide Currently carries claims for norovirus and rotavirus as mention is the Interim Guidance copied below.

Use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus) to disinfect environmental surfaces in rooms of patients with suspected or confirmed

99.9% - Sanitized
99.999% – Disinfected
99.9999% - Sterilized

How effective is it ?

- ⦿ Vital Oxide kills **99.999%** organisms within 60 seconds of contact.
- ⦿ For “Best Practices” in decontamination of areas with known pathogens, it is recommended that the contact time be **10 minutes (99.9996%)**.
- ⦿ This is easily achieved by using the automatic functions on the Zimek system. Touch screen controls that can be used with minimal training ensure that disinfectant is applied with **no operator involvement**.

So what did we purchase and
how are we using it ?



Equipment

- Micro-mist
Generator

- Micro-Particle
Evacuator (Z-Vac)



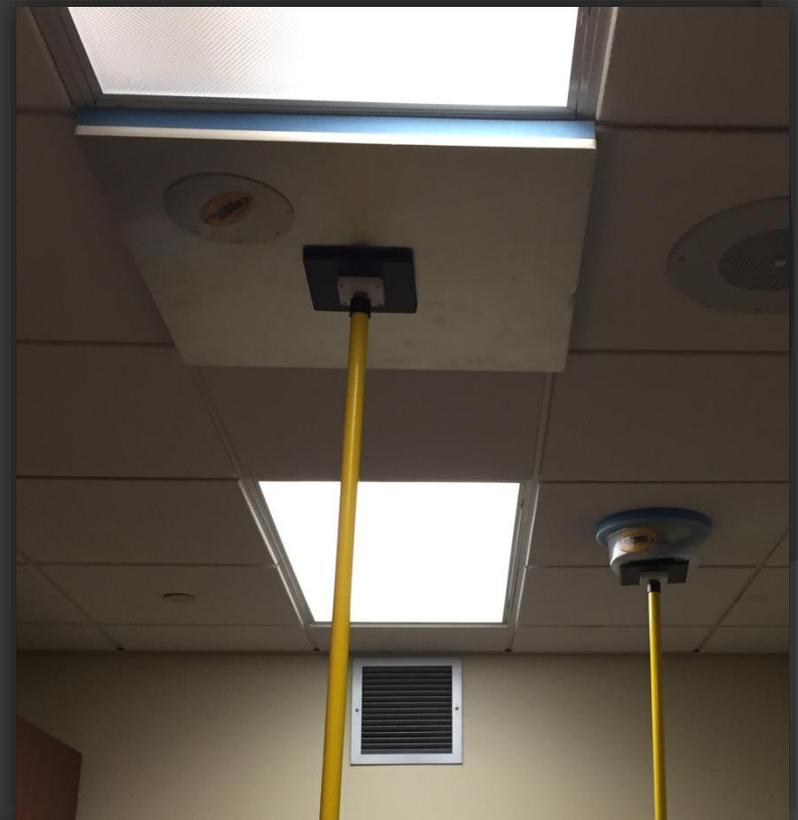
Accessories

- Vehicle Overlay and Vehicle Window Inserts



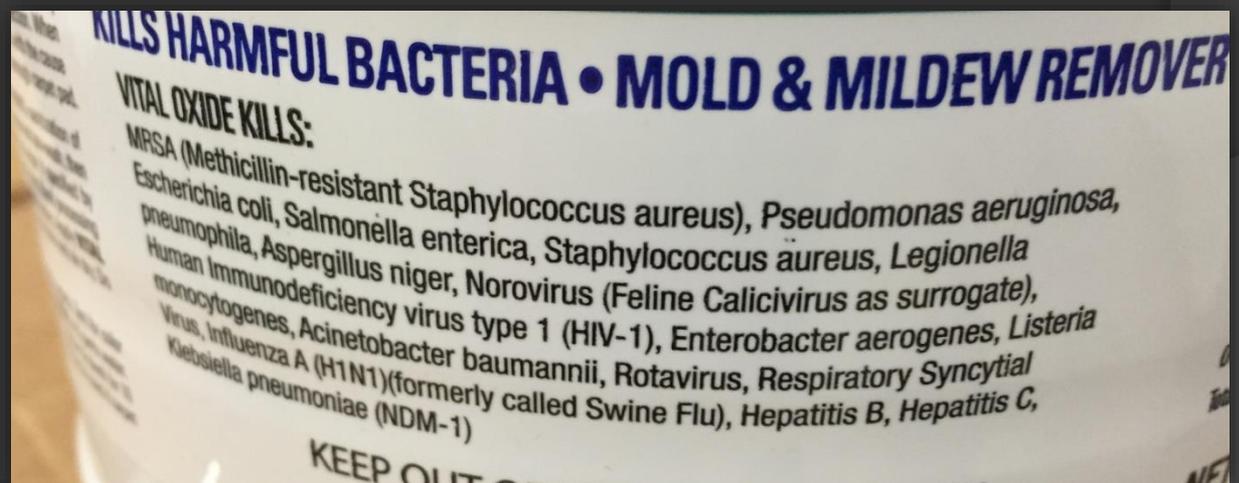
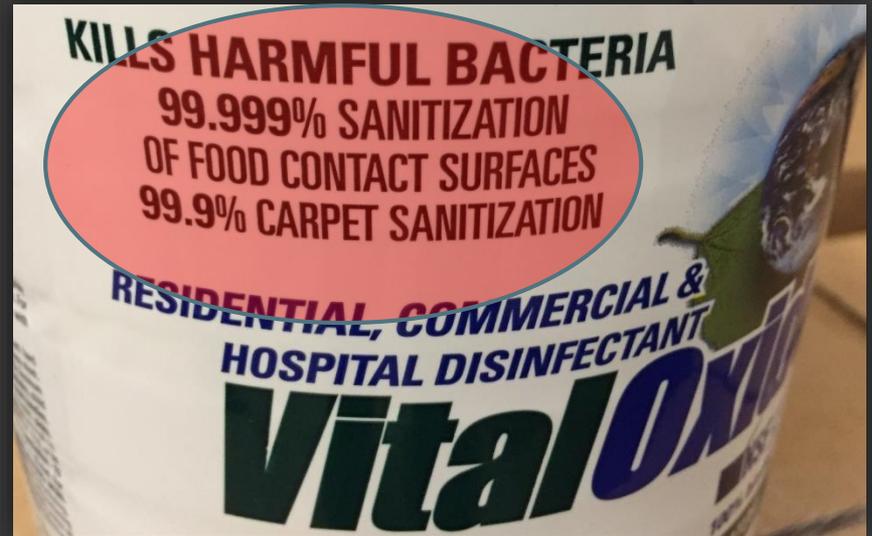
Accessories

- Covers for A/C Ducts and Smoke Detectors



VitalOxide

- VitalOxide Disinfectant



VitalOxide



- Cost about \$5 to completely decontaminate a squad car, ambulance, or single room.

Disinfection of Public Safety Vehicles



Vehicle Insert is placed into side compartment and placed into Zimek Micro-Micromist output



Disinfection of Medic Unit

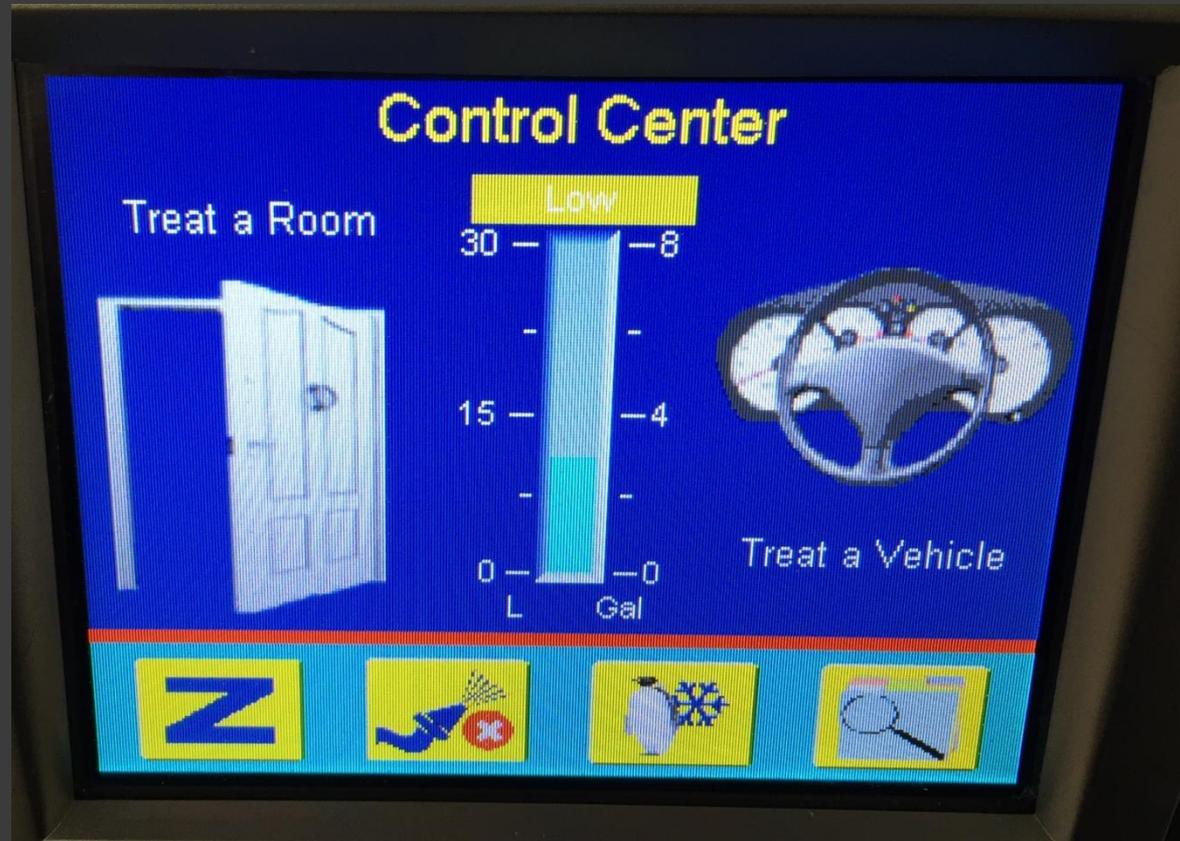


Touch Screen Display



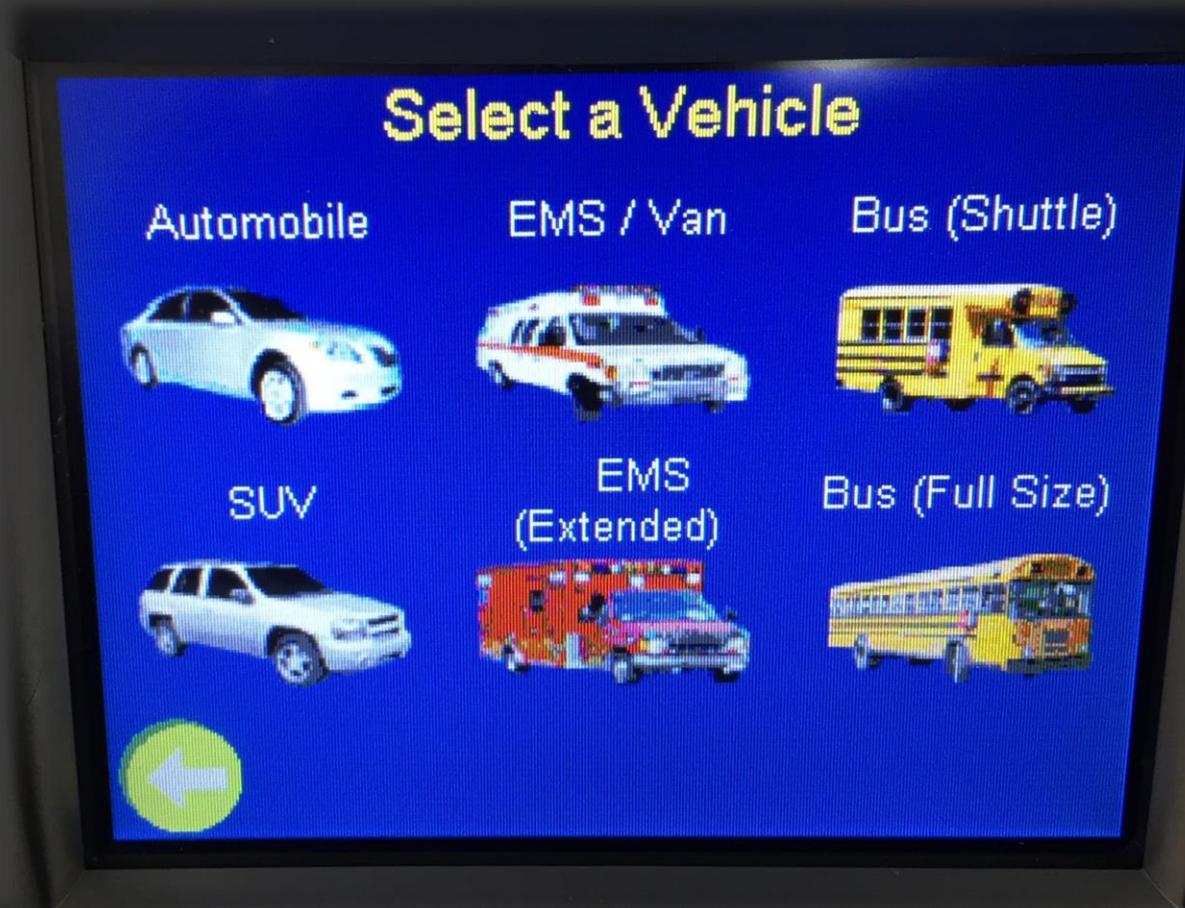
Disinfection of Medic Unit

Choose Room or Vehicle



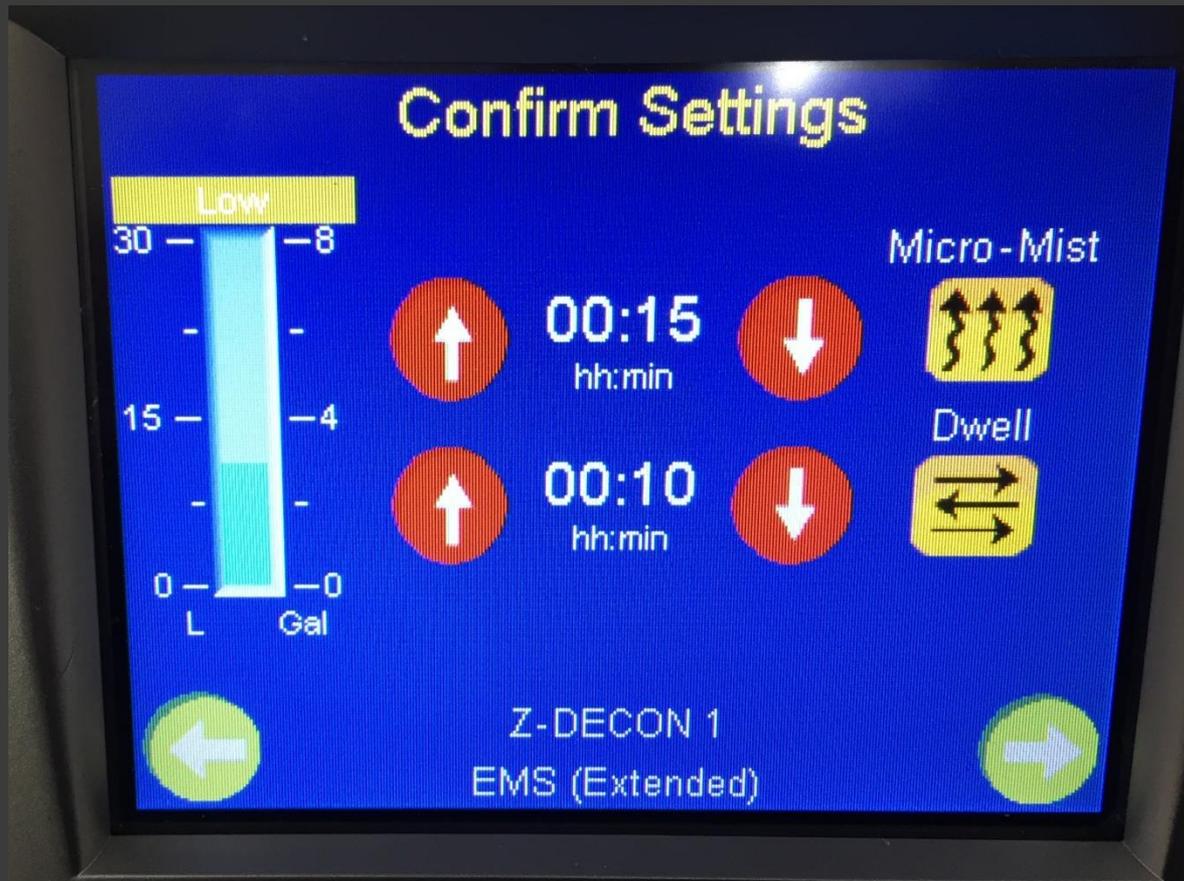
Disinfection of Medic Unit

Select Vehicle Type



Disinfection of Medic Unit

Decontamination parameters automatically selected for vehicle type.



This example shows a mist time of 15 min. and a dwell time of 10 min.

Press green arrow to start.

Disinfection of Medic Unit
VIDEO

Quick Turnaround

- For vehicles in well ventilated places (outdoors/garages) you just simply open the doors and mist disperses into the environment.
- The total time to decontaminate a truck takes only **30-45** minutes.
- This allows for the fastest **decon-return to service time** of anything on the market.

Rooms and enclosed places

- Also quick and easy to set-up.
- A/C Vents and Smoke detectors are covered using adjustable poles and covers.
- The Zimek unit and Z-Vac are placed in the room and “tethered” together using a ¼” cable.
- Room dimensions are entered into the touch screen display and disinfection parameters are calculated by the Zimek.
- Press the start button and leave the room.
- A filter time is added to the Mist/Dwell times
- When finished, room is **immediately ready** for use.

Disinfection of Room



Standard rooms (Hospital, dorm, small office) can be completed in under 1 hour.

One room can be disinfected without having to evacuate adjacent rooms.

Regional Applications

- Public Safety vehicle / stations
- Public Schools / Daycares with potential contaminated patient
- Public Transportation
- **Jail Facilities** (MRSA)
- Suspect of High Suspicion (***Ebola***) has had contact with high visibility area.
- Clinics / Hospital Rooms
- Should be requested through your **EMC or Public Health Office** to Washington County OEM or EMS Director.



INFECTION CONTROL ♦ BIOHAZARD DEFENSE



BEST PRACTICES RAPID DECONTAMINATION®

ZIMEK.COM