

# *ACTIVEPURE<sup>®</sup> Scientific References*

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2020



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# OUR HISTORY

## COMPANY HISTORY



**1924**

Electrolux, USA  
Established.



**1954**

Production of the  
Model 30 ends  
14 million units  
sold. The Model 30  
recognized in the  
Smithsonian as a top  
100 U.S. product.



**1970**

Our current factory  
is opened in Bristol,  
Virginia. 500,000  
square feet.



**1998**

Electrolux, USA is  
purchased from Sara  
Lee by Joe Urso and  
his Team.



**2000**

Electrolux is re-brand-  
ed as Aerus, a healthy  
home company.  
Name rights partially  
sold to AB Electrolux,  
Sweden.

# OUR HISTORY

## COMPANY HISTORY



**2001**

Air purification products introduced.



**2009**

NASA Certified Space air and surface purification technology introduced.



**2011**

Vollara Nature-based solutions for health.

**2016  
PATENTED  
TECHNOLOGY**

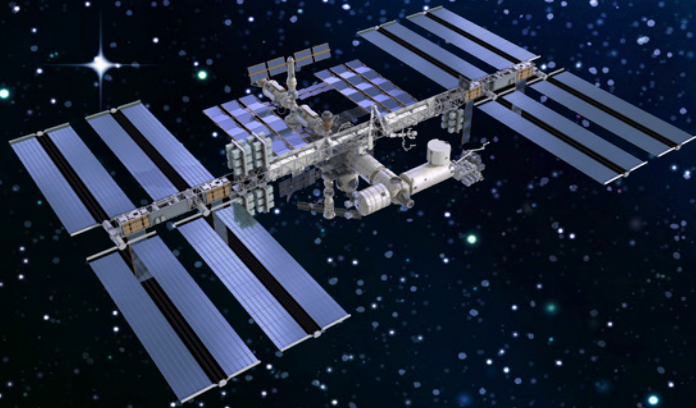
**2016**

Aerus files for and receives patent protection for its ActivePure® Technologies



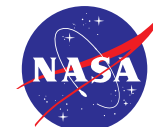
**2017**

Aerus' ActivePure Technology inducted into the Prestigious Space Technology Hall of Fame: one of only 75 technologies to receive such an honor in 30 years.



## *ActivePure® Technology*

Aerus ActivePure® Technology is the **most powerful air and surface** purification technology ever discovered. ActivePure® is also the **only exclusive** air and surface purification technology awarded the prestigious Certified Space Technology seal of approval by the Space Foundation.





# ActivePure® Technology

Inducted into the 2017 Space Technology Hall of Fame  
by The Space Foundation



## *Space Technology Hall of Fame*

The Space Technology Hall of Fame® increases public awareness of the benefits of space exploration and encourages further innovation by recognizing individuals, organizations and companies that effectively adapt and market technologies originally developed for space to improve the quality of life for all humanity. Other prestigious inductees include, The Boeing Company, Canadian Space Agency, US Army Institute of Surgical Research, NASA Kennedy Space Center.

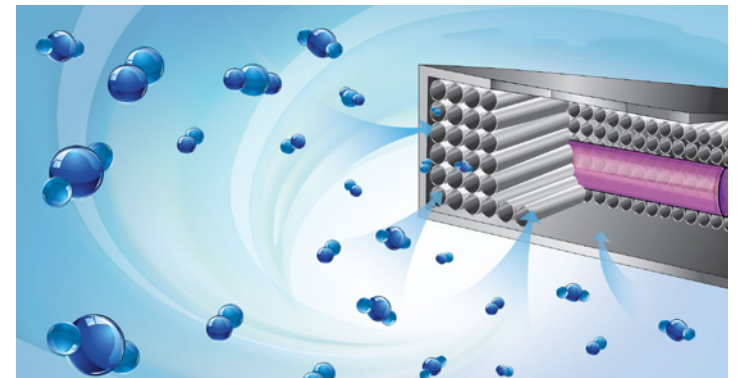


Oxygen and humidity are converted into oxidizers using a process similar to what occurs in natural sunlight. These oxidizers are projected from the cell, enveloping the air and surrounding surfaces to seek out and destroy contaminants.

## *How does ActivePure® Technology work?*

1. Uses oxygen and humidity from the air
2. Converts into powerful oxidizers
3. Destroys microorganisms in the air and on surfaces
4. Kills pathogens on contact
5. Safe for astronauts - Safe for everyone

ActivePure®  
Honeycomb  
Matrix



# ACTIVEPURE® DELIVERS CLEAN SURFACES

The **Ground Zero Museum** in New York City was treated with ActivePure purification systems. Curator Gary Suson said, “**when our staff came in the day after, they could tell immediately that the air was cleaner.**”

Today, ActivePure can be found treating other indoor environments including the **Liberty Bell**, hospitals, doctors’ offices, professional sports facilities, nursing homes, hotels, schools, businesses, and countless homes around the world.





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## *SCIENCE & PROOF*



# ACTIVEPURE® TECHNOLOGY TESTING – Complying with FDA Protocols in a FDA Certified Compliant Laboratory

Net Log Reduction Of MS2 Bacteriophage Virus Bioaerosol

RNA Virus

> **OVER 99.9999% REDUCTION OF MS2 BACTERIOPHAGE VIRUS IN ONLY 60 MINUTES!**



2017 Space Technology Hall of Fame Inductee

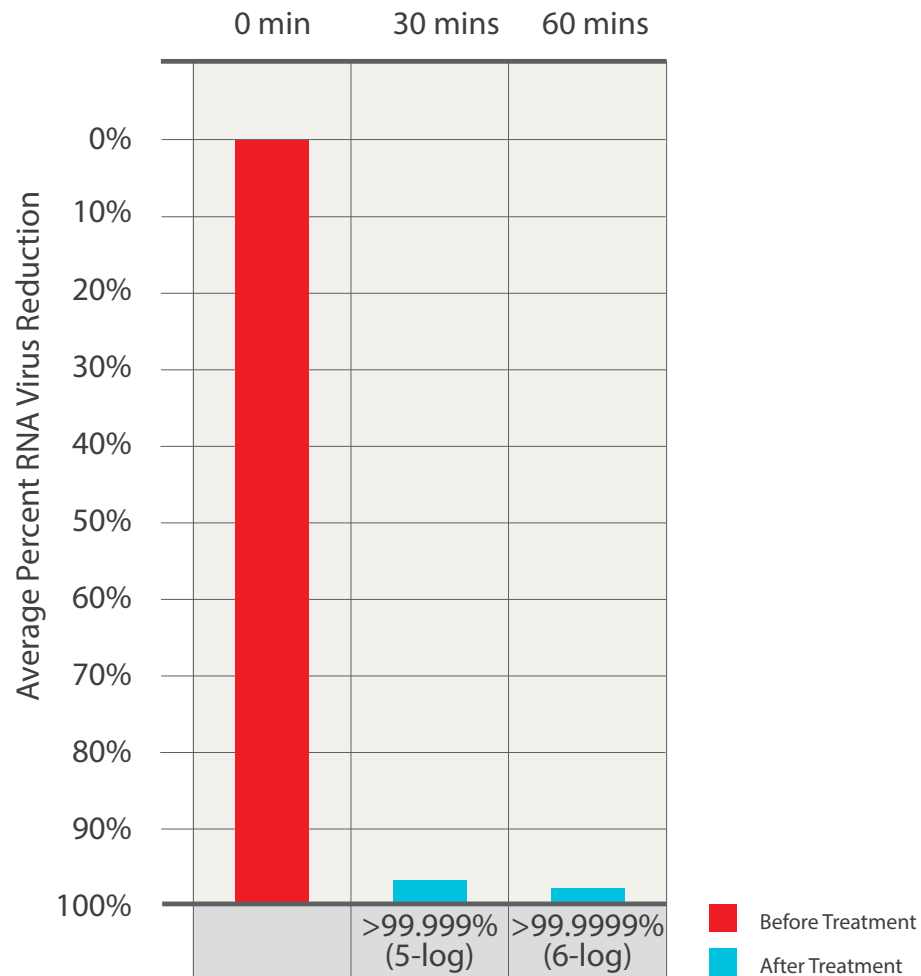


**Results based on laboratory testing**

Scientific testing has demonstrated the use of ActivePure® Technology to substantially reduce airborne and surface contaminants.

Field results may vary based on environmental conditions. These results have not been certified by the FDA.

## Reduction of Airborne Contaminants MS2 bacteriophage RNA Virus



# ACTIVEPURE® TECHNOLOGY TESTING – Complying with FDA Protocols in a FDA Certified Compliant Laboratory

Net Log Reduction Phi-X147 Of Bacteriophage Virus Bioaerosol

DNA Virus

> **OVER 99.995% REDUCTION**  
**OF PHI-X147 BACTERIOPHAGE VIRUS**  
**IN ONLY 60 MINUTES!**



2017 Space Technology  
Hall of Fame Inductee

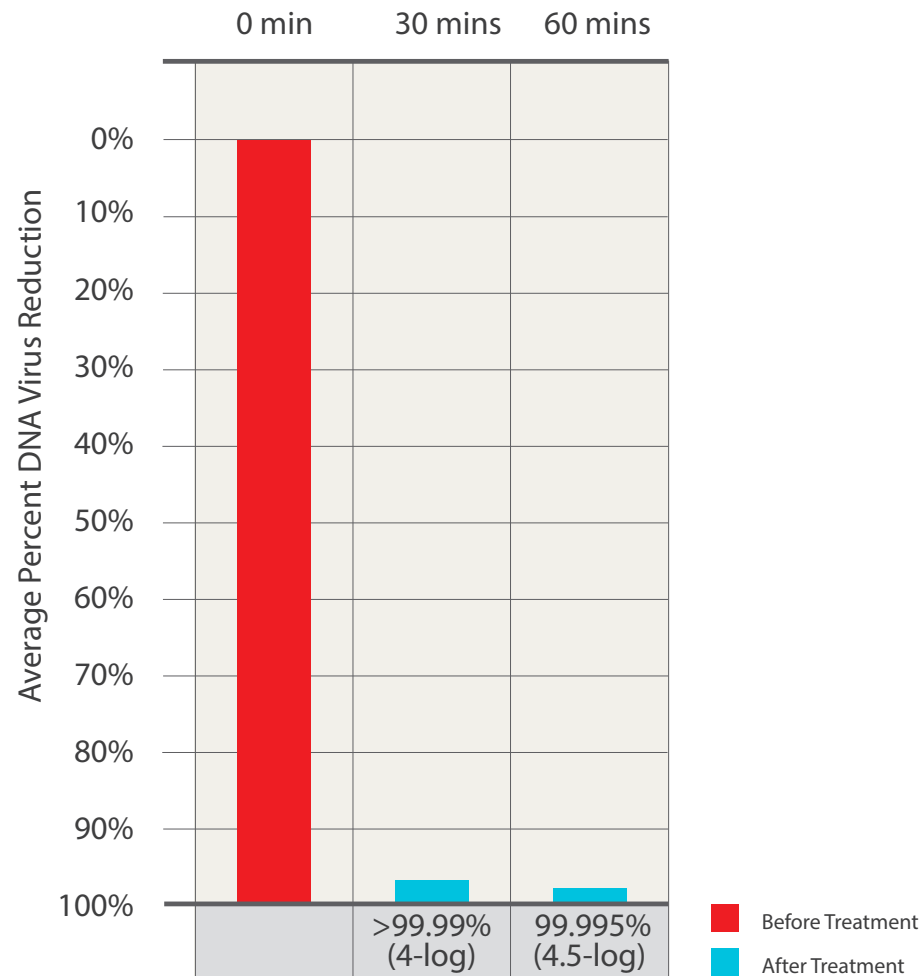


**Results based on laboratory testing**

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## Reduction of Airborne Contaminants Phi-X147 bacteriophage DNA Virus



# ACTIVEPURE® TECHNOLOGY TESTING – Complying with FDA Protocols in a FDA Certified Compliant Laboratory

Net Log Reduction Of Staphylococcus Epidermidis Bioaerosol

*Gram-positive Bacteria*

**> OVER 99.9999% REDUCTION  
OF STAPHYLOCOCCUS EPIDERMIDIS  
IN ONLY 60 MINUTES!**



2017 Space Technology  
Hall of Fame Inductee

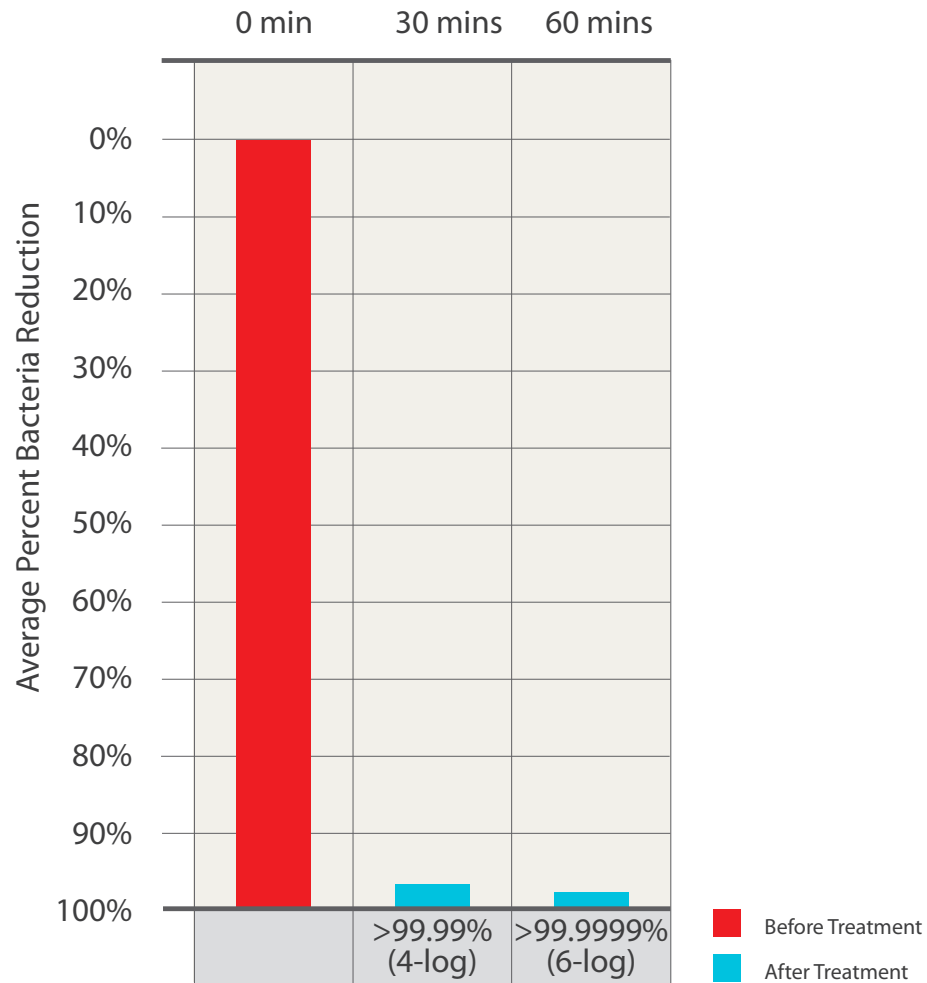


**Results based on laboratory testing**

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**Reduction of Airborne Contaminants  
Staphylococcus epidermidis – Gram-positive Bacteria**



# ACTIVEPURE® TECHNOLOGY TESTING – Complying with FDA Protocols in a FDA Certified Compliant Laboratory

Net Log Reduction Erwinia Herbicola Bioaerosol

*Gram-negative Bacteria*

**> OVER 99.999% REDUCTION  
OF ERWINIA HERBICOLA IN  
ONLY 60 MINUTES!**



2017 Space Technology  
Hall of Fame Inductee

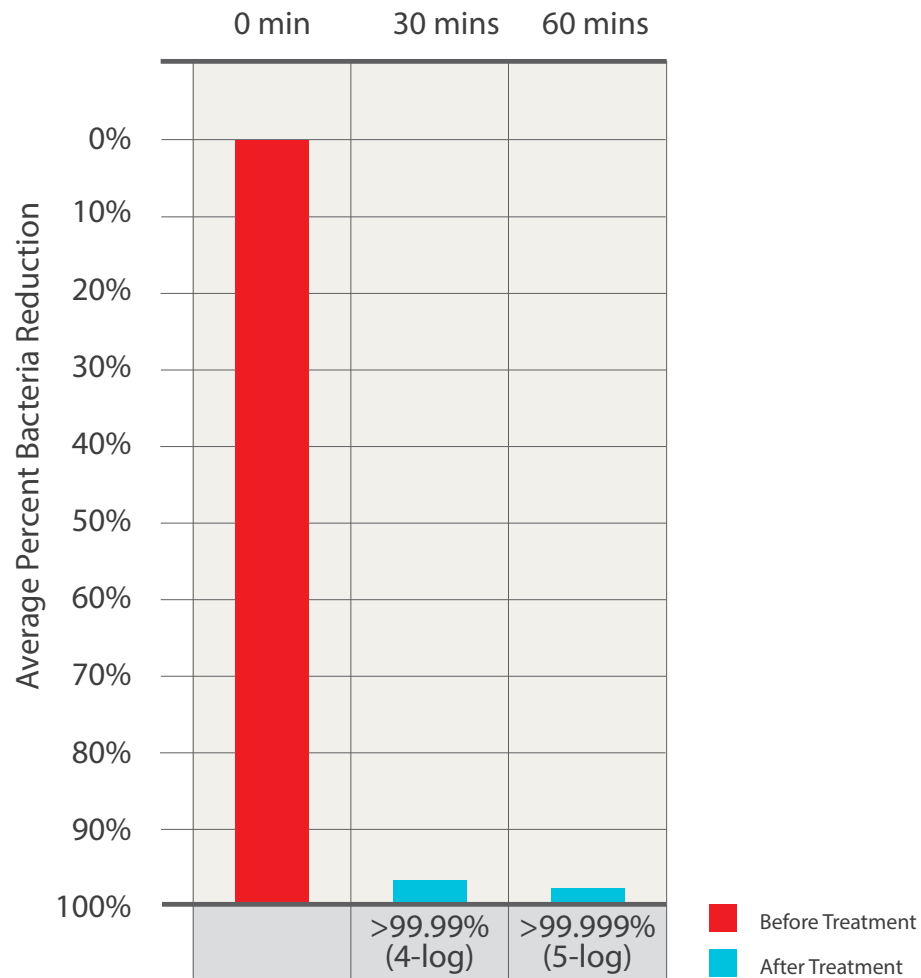


**Results based on laboratory testing**

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**Reduction of Airborne Contaminants  
Erwinia herbicola – Gram-negative Bacteria**

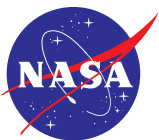


# ACTIVEPURE® TECHNOLOGY TESTING – Complying with FDA Protocols in a FDA Certified Compliant Laboratory

Net Log Reduction Of Aspergillus Niger (fungal spores)

Fungal Mold

> **OVER 99.99% REDUCTION**  
**OF ASPERGILLUS NIGER IN ONLY 60**  
**MINUTES!**

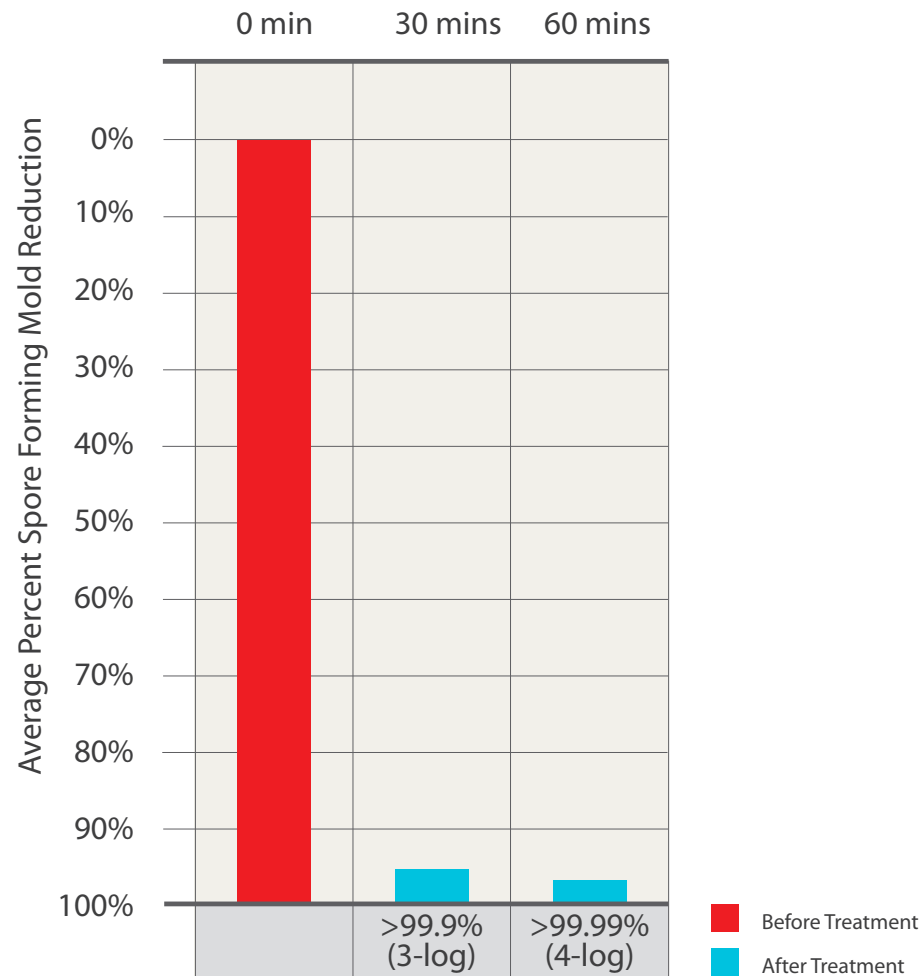


### Results based on laboratory testing

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## Reduction of Airborne Contaminants Aspergillus niger

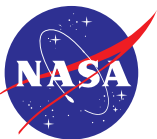


# ACTIVEPURE® TECHNOLOGY TESTING – Complying with FDA Protocols in a FDA Certified Compliant Laboratory

Net Log Reduction Of Bacillus Globigii (bacterial spores)

## Bacterial Mold

> **OVER 99.99% REDUCTION**  
**OF BACILLUS GLOBIGII IN ONLY**  
**60 MINUTES!**

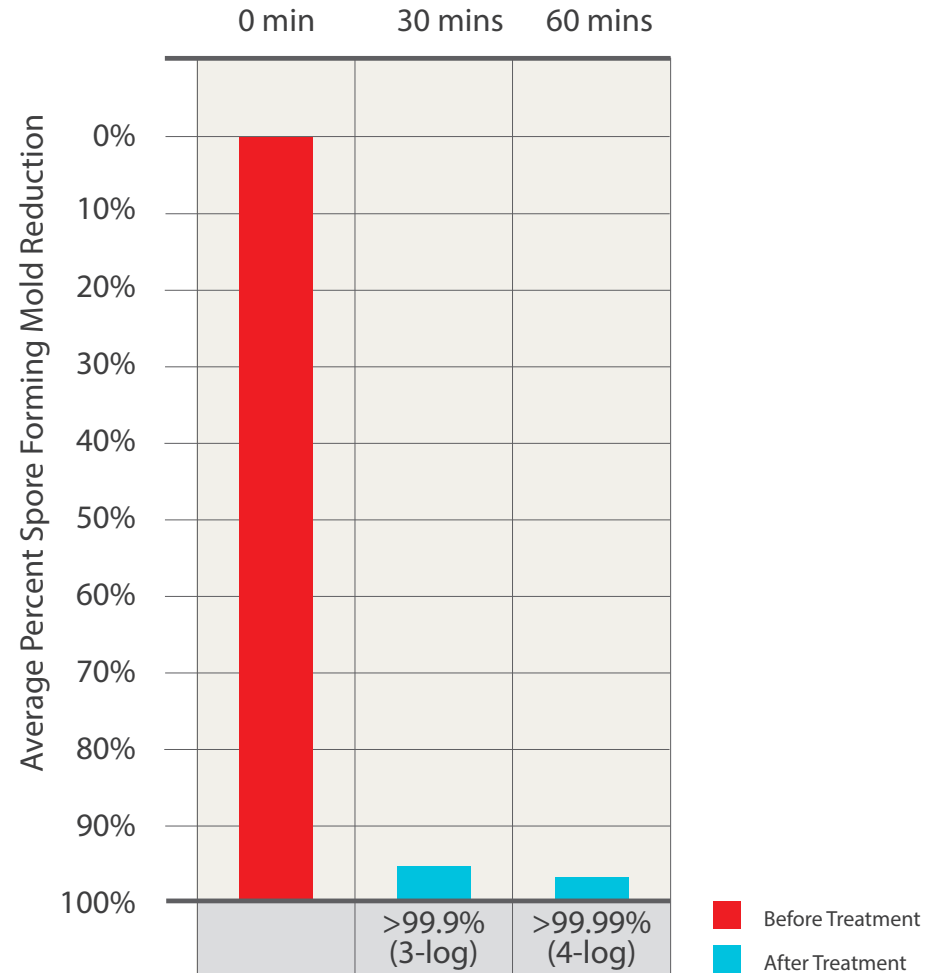


### Results based on laboratory testing

Scientific testing has demonstrated the use of ActivePure® Technology to substantially reduce airborne and surface contaminants.

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## Reduction of Airborne Contaminants Bacillus globigii



# C. DIFF ENDOSPORES OVER 99% REDUCTION

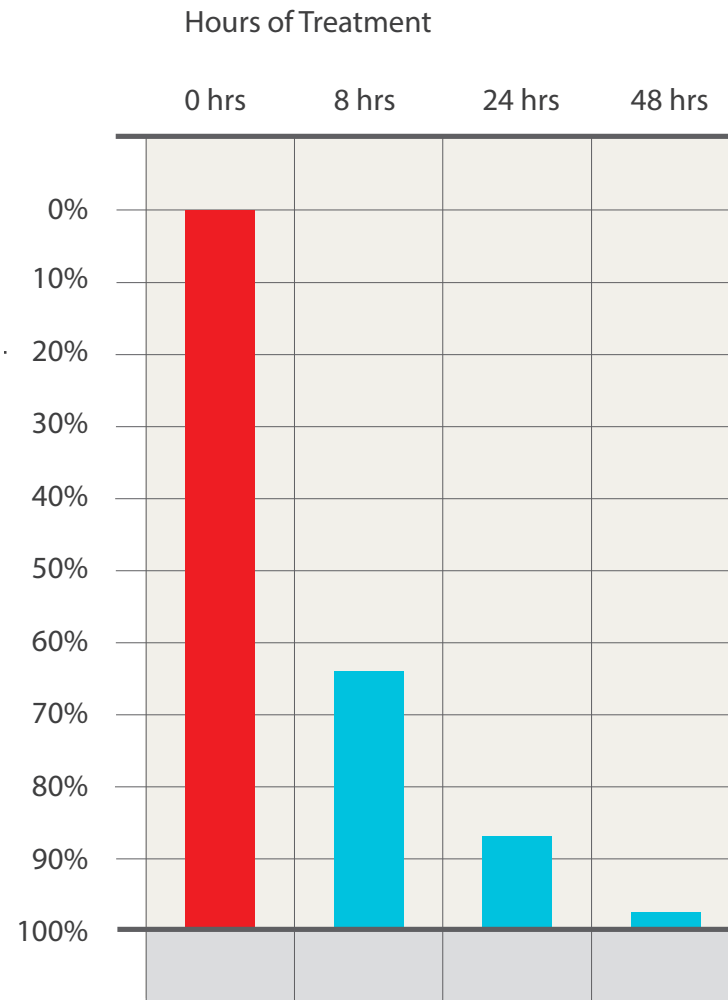
> **OVER 99% REDUCTION**  
OF MICROBES IN 48 HRS!

> **65% REDUCTION**  
IN JUST 8 HRS!



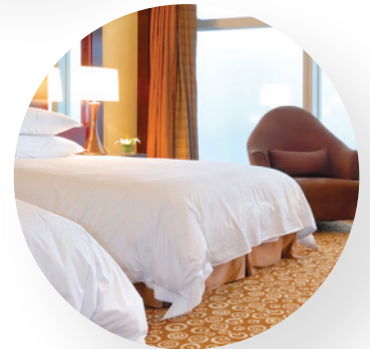
### Results based on laboratory testing

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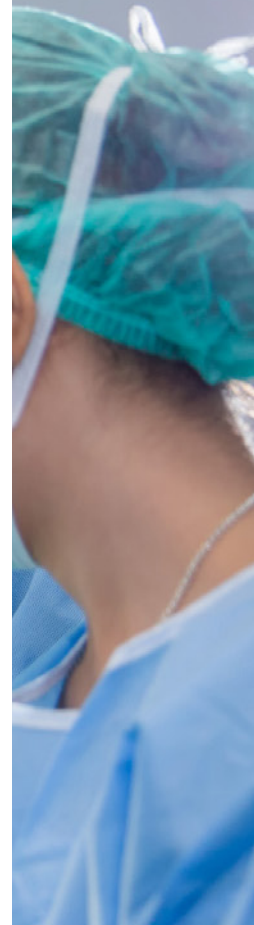
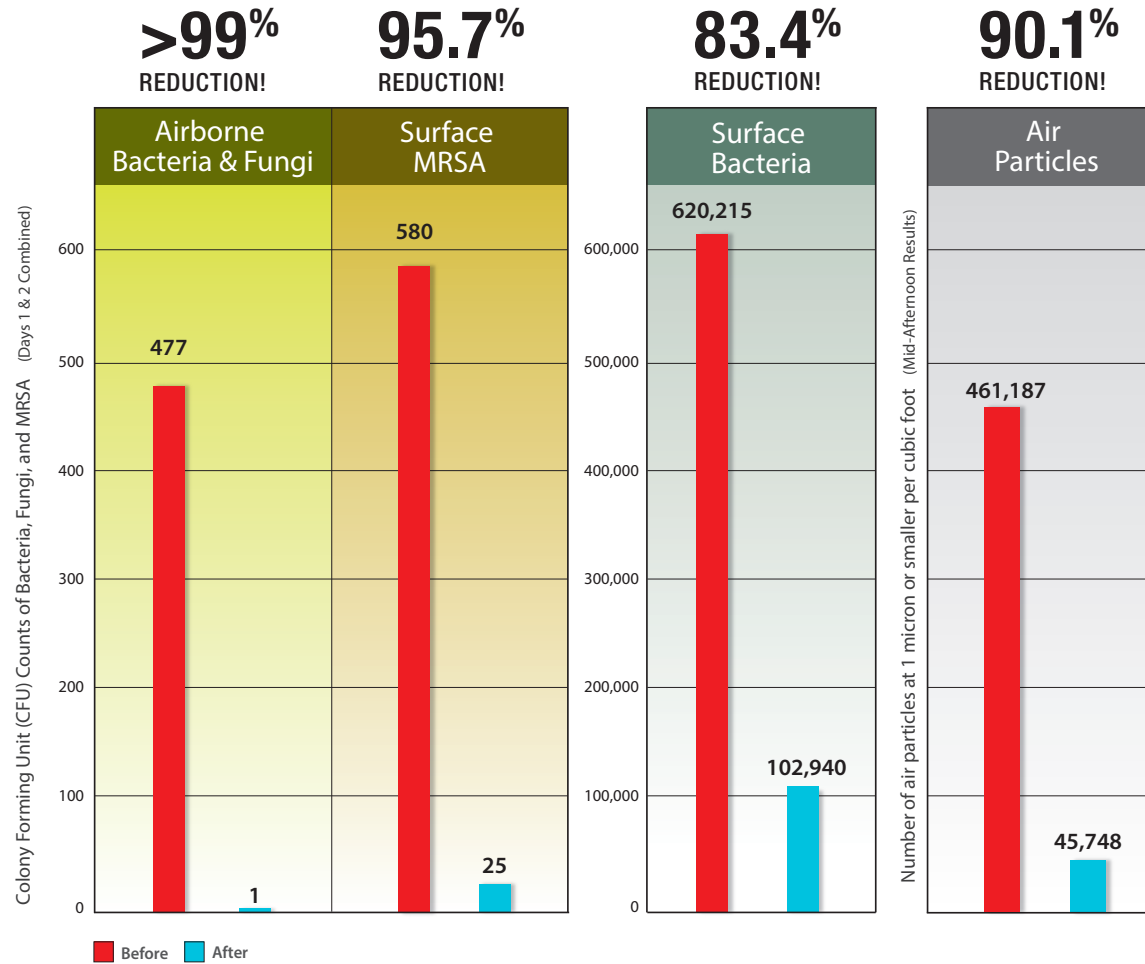


# INSTALLATIONS

- Homes
- Hospitals
- Doctors Offices
- Nursing Homes
- Professional Sports Facilities
- Hotels
- Businesses
- Schools
- Liberty Bell
- Ground Zero Museum







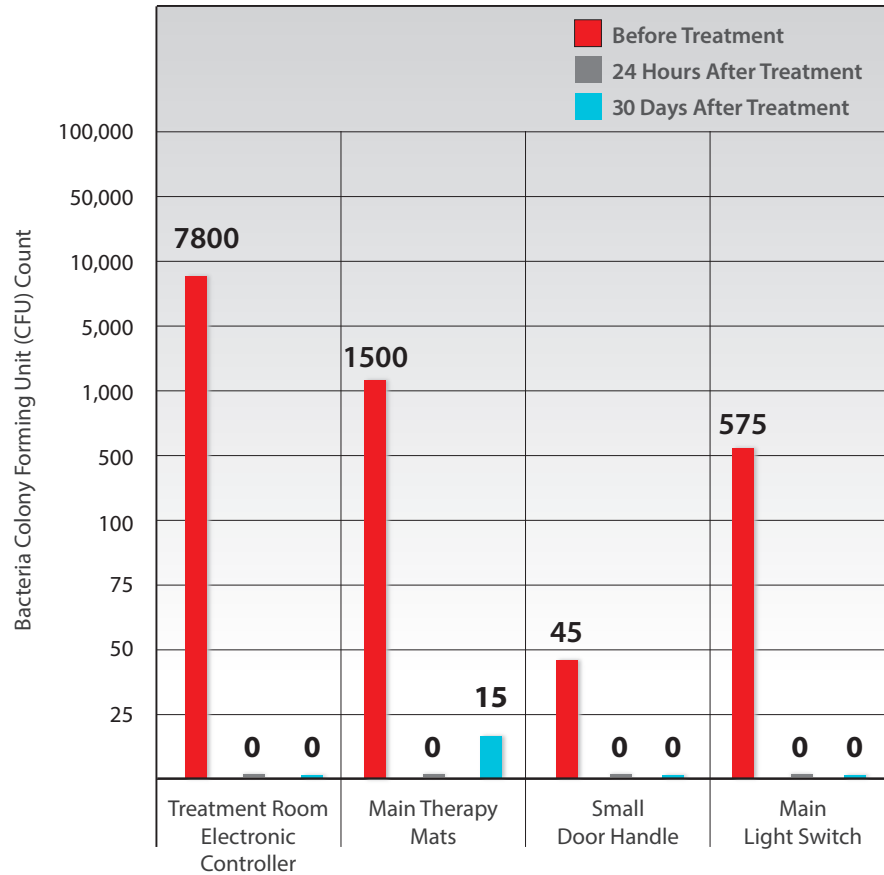
# Hospital Operating Room

Before and After Results Using ActivePure Technology





Bacteria Test Results: Pediatric Therapy Office



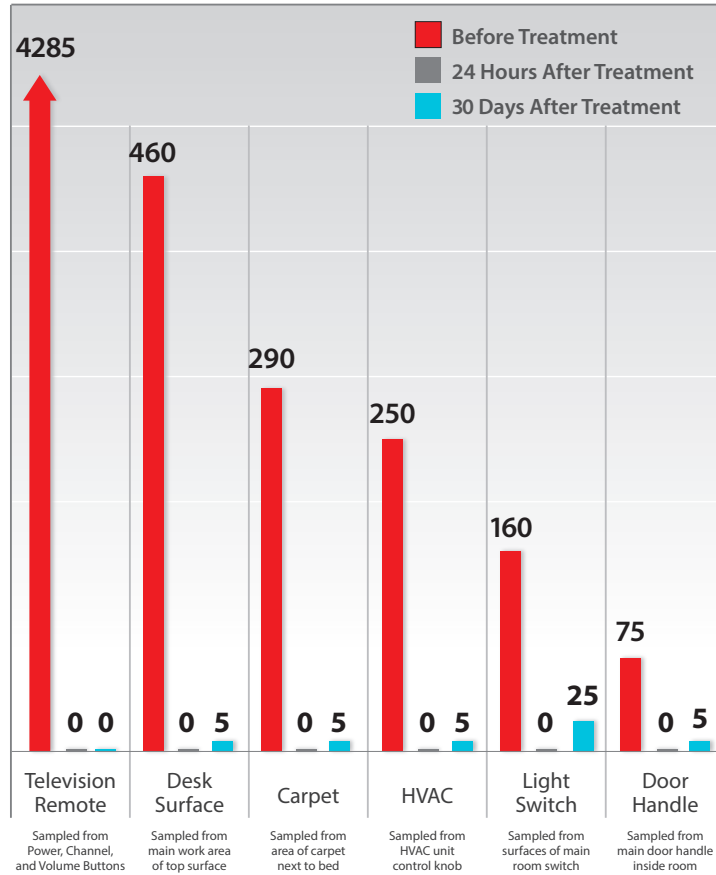
# Medical Facilities

Before and After Results

# Bacteria

## Bacteria Colony Forming Unit (CFU) Count

Combined Results From Three Rooms



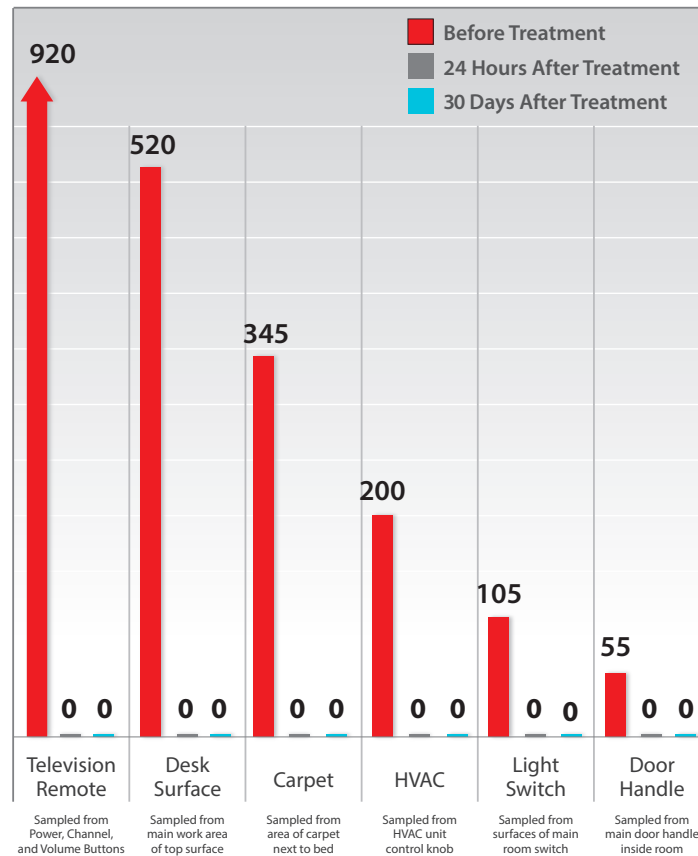
# Hotel

Typical Before and After Benefits



### Fungi Colony Forming Unit (CFU) Count

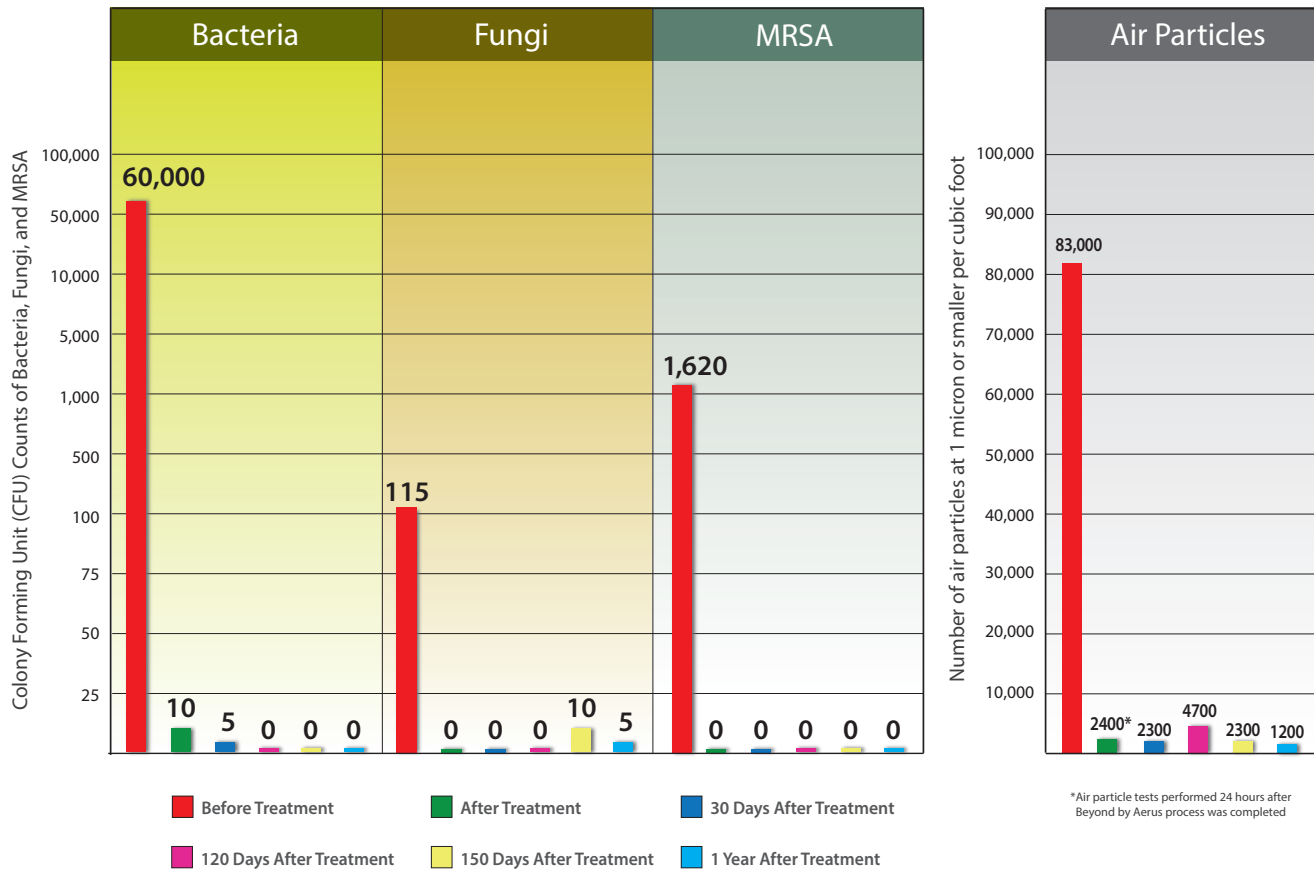
Combined Results From Three Rooms



## Hotel

Typical Before and After Benefits

# 100% ELIMINATION IN MOST CASES!



## Major League Baseball

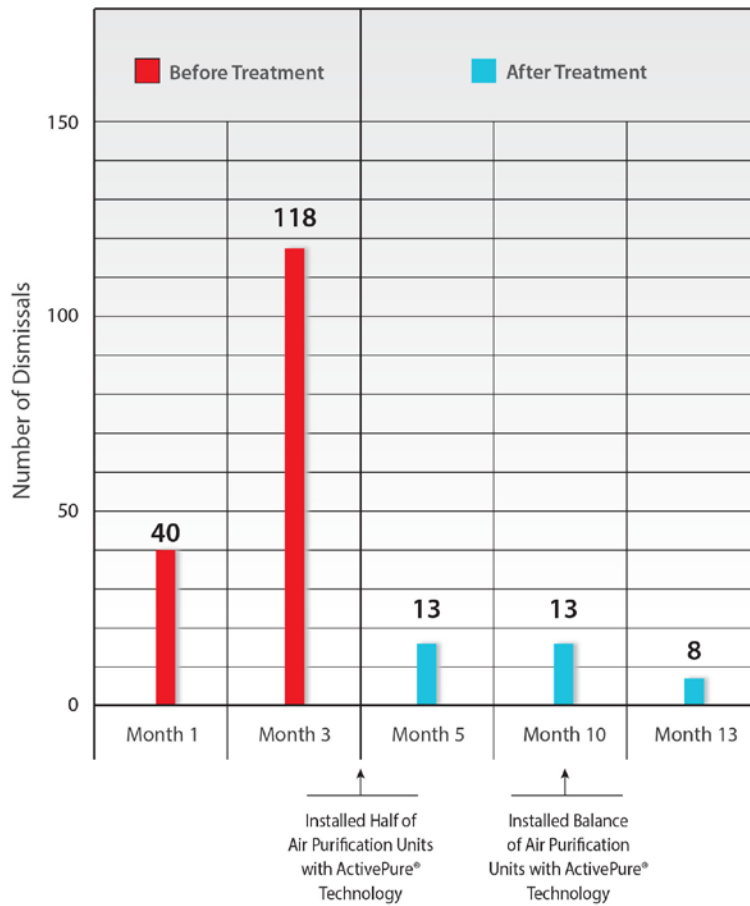
Before and After Results Using ActivePure Technology





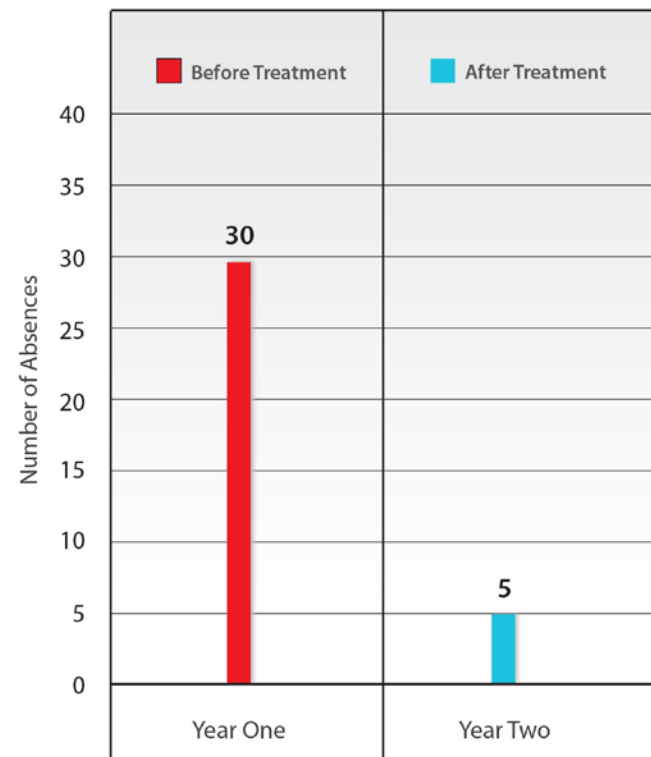
### >80% Reduction in Flu Related Dismissals

(ActivePure Technology installed in Indiana school)



### >80% Reduction in Preschool Sick Days

(ActivePure Technology installed in Pennsylvania preschool)

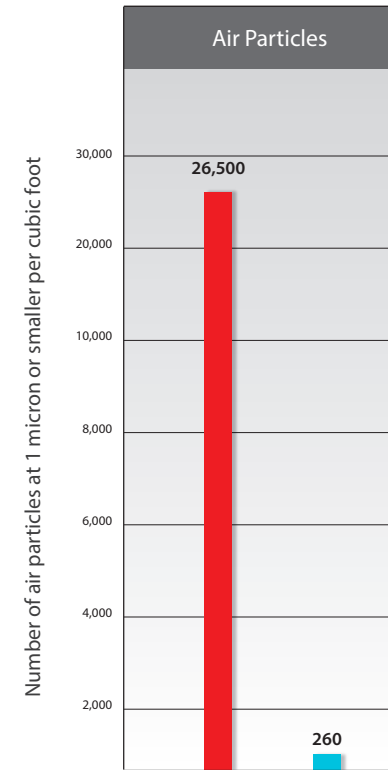
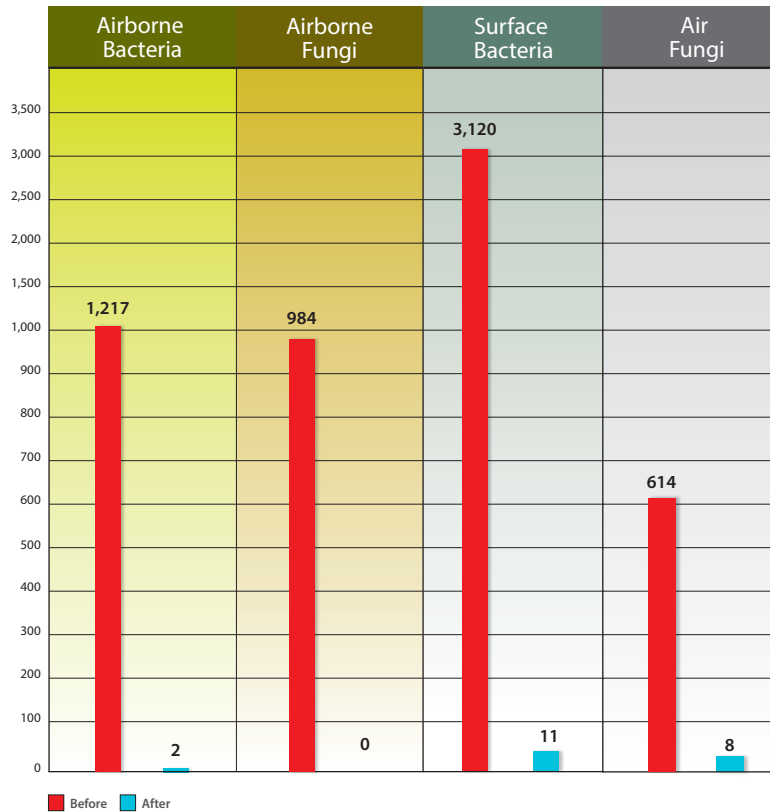


# Over 80% Reduction In Flu & Sick Days!

Before and After Results Using ActivePure Technology



# GREATER THAN 99% ELIMINATION

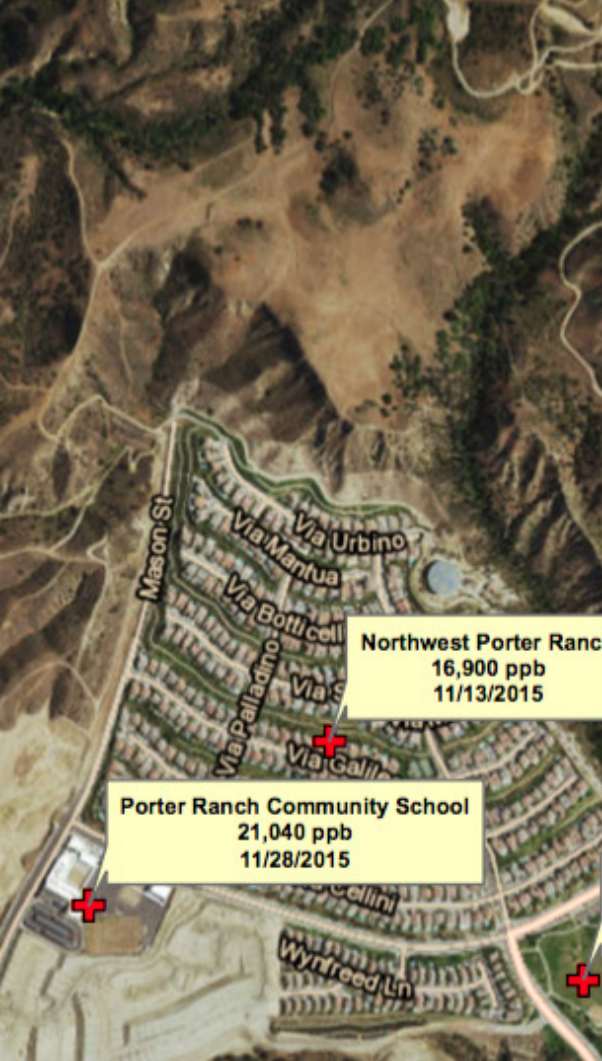


\*Air particle tests performed 24 hours after Beyond by Aerus process was completed

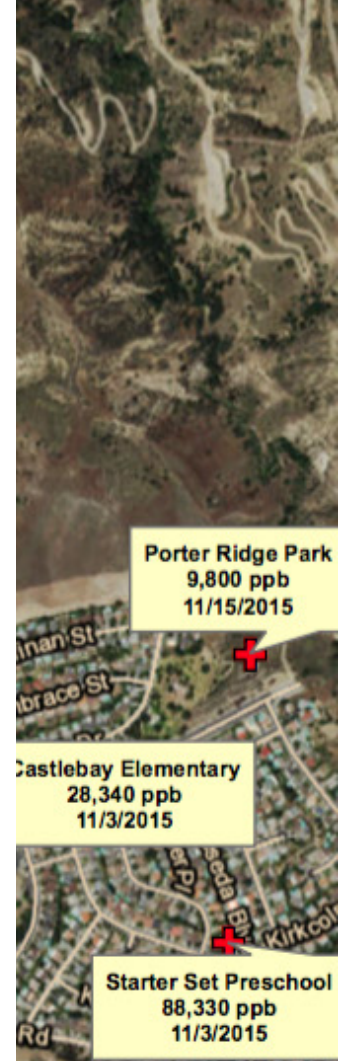
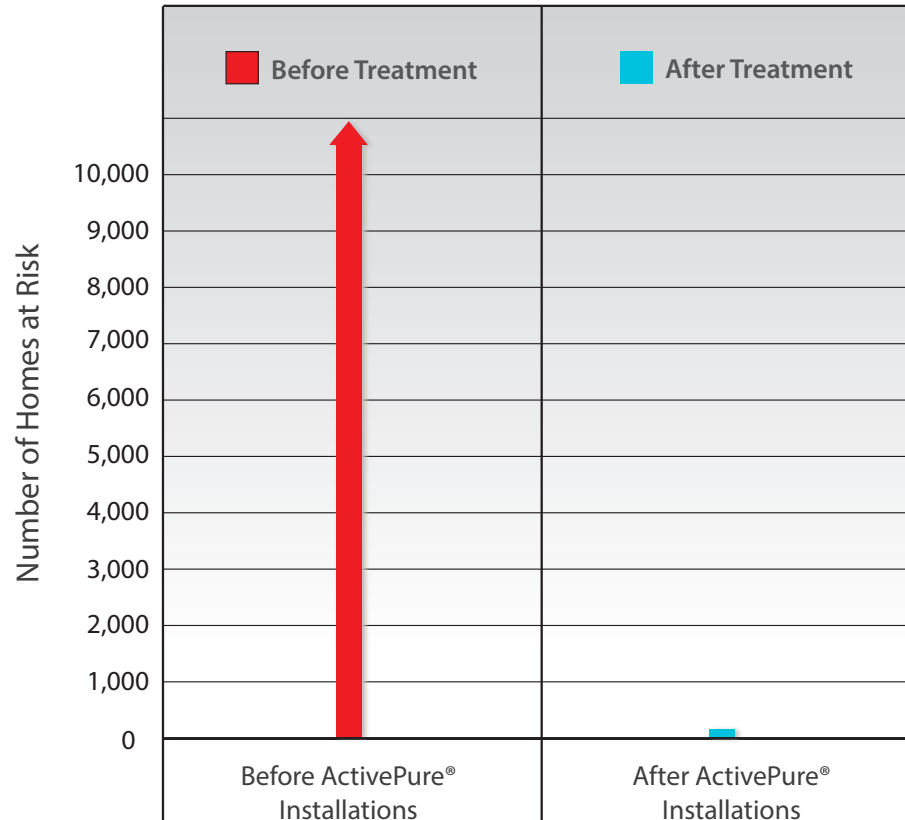
## Residential

Before and After Results Using ActivePure Technology





## 100% Reduction in VOC's (Methane Gas Additive) (ActivePure Technology Installed in homes at Porter Ranch)



# 100% Reduction In VOC's (Methane Gas Additive)!

Before and After Results With ActivePure® Technology Installations





# What Can ActivePure Do For You?



- 
- **Destroys illness**-causing bacteria and viruses such as **MRSA**, **E. coli**, and **C. Diff**
  - **Destroys** mold and fungi
  - **Reduction** in **sick days** and the number of common **cold** and **flu** outbreaks
  - **Removes** Volatile Organic Compounds (**VOC's**)



## *AIR & SURFACE TECHNOLOGIES*

# Aerus CLEAN & PURE

Protects up to 3,000 Square Feet -- No Filter Replacement Required  
No Ozone -- Safe for People and Pets 24/7 Peace of Mind Protection

## Benefits

- Our patented ActivePure® Technology safely destroys over 99% of all surface and airborne contaminants including viruses, bacteria, mold, voc's and allergens
- Reduces airborne contaminants and allergens that can trigger asthma and allergy symptoms
- Freshens air and removes odors in otherwise stale-prone environments
- Removes dirt and dust from the air to make cleaning easier
- Portable, no installation required
- Destroys VOCs, smoke and odors

## How it works

- Our proprietary ActivePure® Technology uses light waves and a catalytic process to produce super oxide ions and hydro peroxides that destroy contaminants in the air and on surfaces
- Features a high intensity UVC light that makes use of the same oxidation and ionizing properties of light as naturally occurring sunlight
- Certified Space Technology continuously protects and purifies the environment
- Proven effective in independent studies against bacteria, viruses, mold and fungi in the air and on surfaces
- Nature's abundant negative ions

## Unique Features

- Patent-pending ActivePure® Cell design
- Digital display with blue back-lighting
- Area size setting
- Cleaning reminder
- 5 fan speeds
- Multi-point Bi-polar Ionization – cycle time between positive and negative ions is 20 seconds
- Pre-filter
- HEPA Filter
- Ozone Free



## Specifications

Electrical	43 Watts Max; Positive & Negative Ion Generation
Input Voltage	100 ~ 240 VAC; 50/60 Hz external power supply
Nominal Airflow Rate	40-60 CFM Fan, Washable electrostatic lint screen
Dimensions	11.75" H x 9.5" W x 10" D
Weight	7.6 lbs
Operating Temperature	34°F – 100°F
Recommended Treatment Space	500 sq. ft. to 3,000 sq. ft.
Warranty	3 year limited

Meets California ozone emissions limit. CARB Certified.

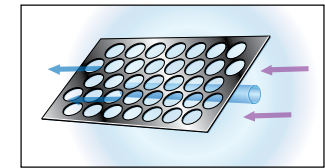
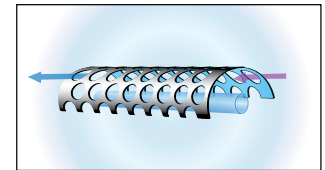
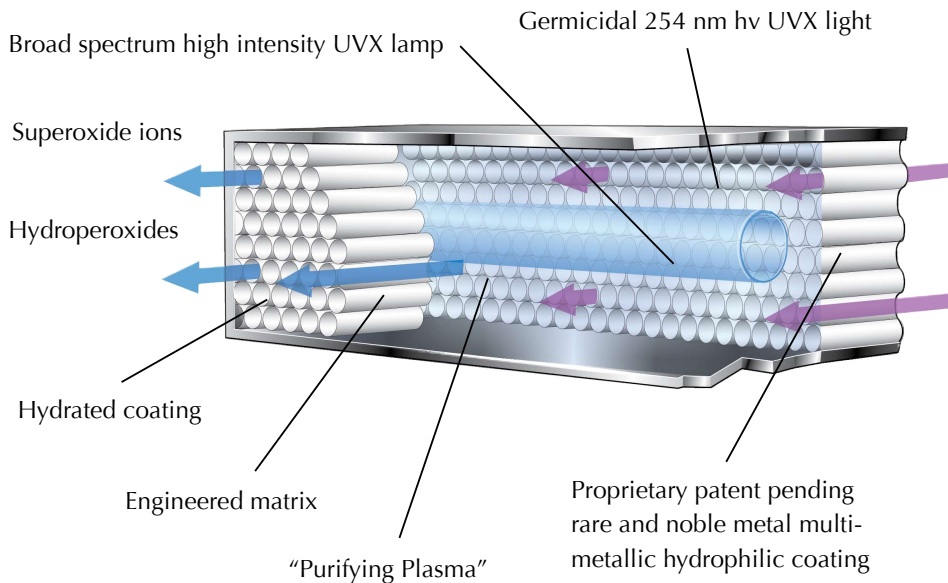


2017 Space Technology Hall of Fame Inductee

Proudly Designed, Developed & Engineered in the USA



Combining high intensity UVX light with a specially developed rare metal hydrophilic coating on an engineered matrix, the ActivePure RCI Cell (Radiant Catalytic Ionization) reduces airborne and surface contaminants and odors while creating superoxide ions and hydroperoxides. These products of our Advanced Oxidation Process continue working to reduce more odors and VOC's, and to attack microorganisms.



The ActivePure (RCI) matrix is specifically engineered and tested to work effectively in each purifier model.

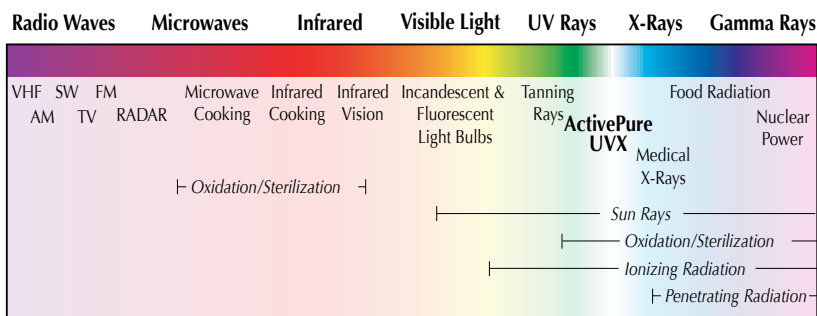
## UVX Light and the Sun

By engineering the proper light wavelengths into the ActivePure (RCI) Cell, activTek offers a highly effective system designed to utilize 254 nm hv germicidal UV light. Falling between visible UV light and invisible X-Rays in the light spectrum, UVX makes use of the same oxidation and ionizing properties of light as naturally occurring sunlight.

The ActivePure process takes advantage of these germicidal and ionizing properties, and combines them with the photocatalytic reactions of specific rare and noble metals to create Radiant Catalytic Ionization.

## Advantages of ActivePure (RCI):

- Germicidal UV for microbe inactivation.
- Germicidal UV for Catalytic Advanced Oxidation Process (AOP) reactions.
- Combination of UVX wavelengths to produce AOP reactions in the air.
- AOP reactions inactivate microbes as well as destroy odors.
- AOP reactants remain effective after leaving the ActivePure equipped unit as a "purifying plasma."



## USEFUL FORMULAS

Area – Is the calculation of the size of a room or building for determining the correct unit to place based on area.

- Area = length times (X) width of a room or building
- Area is almost always given in
  - square feet (ft<sup>2</sup>)
  - square meters (m<sup>2</sup>)
- Since length and width are in feet, therefore ft x ft = square feet (ft<sup>2</sup>)
- Example 1:
  - You are given an application for a reception area in a nursing home with moderate odors. The area measures 50 by 60 feet.
  - The area equals: 50 ft x 60 ft = 3000 ft<sup>2</sup>.
  - Therefore a Fresh Air SE which is rated up to 3000 ft<sup>2</sup> could be used in this application.

Volume – Is the calculation of the size of a room or building in volume for the purpose of determining the correct unit to place based on volume – for example the EcoAir 4000 is generally for coolers or freezers, volumes of up to 4000 cubic feet (ft<sup>3</sup>).

- Volume = length times (X) width times (X) height of a room, cooler, freezer, or building
- Volume is almost always given in
  - cubic feet (ft<sup>3</sup>)
  - cubic meters (m<sup>3</sup>)
- Since length, width, and height are in feet, therefore ft x ft x ft = cubic feet (ft<sup>3</sup>)
- Example 2:
  - A fruit cooler needs an air purifier
  - You are told that the width is 10 feet and the length is 30 feet
  - The area is 10 feet wide x 30 feet long = 300 ft<sup>2</sup> total area
  - You measure the floor to ceiling height and discover it's 8 feet
  - Now, 10 feet x 30 feet x 8 feet = 2400 cubic feet (ft<sup>3</sup>)
  - Therefore the cooler can be serviced by an EcoAir 4000

Converting “Tons” and “CFM” – Some of our Commercial equipment is recommended for a range of air flows usually given in CFM.

- Since: One (1) ton = 550 CFM/ton
- 18,000 CFM/550 CFM/ton = up to approximately (~) 32 tons capacity
- Given: A 20 ton unit services this building
  - 20 tons X 550 CFM/ton = 11,000 CFM
  - This means that (1) activTek INDUCT 5000 will work

1 These examples do not take any special circumstances into consideration – such as mold, previous flooding, and etc. These calculations merely serve as an example.  
2 Although different authorities use different equivalents ranging from 400 to 600 CFM/ton, activTek Environmental chooses to use the most widely accepted standard of 550 CFM/ton.