

# Research Summary Out-patient Surgery Center

## AiroCide™ Air Quality-Improvement™ Systems Photocatalytic Oxidation in conjunction with Ultraviolet Irradiation

AiroCide a unique airborne pathogen killing technology that uses a patented combination of ultraviolet light and a proprietary titanium based photocatalyst. The AiroCide technology and developing product line is capable of killing a wide range of airborne pathogens including bacteria, viruses and molds, as well as breaking down volatile organic compounds (VOC's) in medical healthcare, residential, food storage, and a variety of other commercial applications.

### **Summary:**

Duplicate tests were performed in an operating room of an out-patient surgery facility to measure the efficacy of the AiroCide system in removing airborne bacterial colony forming units (CFU's). The tests resulted in a 92% reduction in 24 hrs. and a 47% reduction in one (1) hour.

### **Protocol**

Two AiroCide systems (model ACS-100) were installed in a 2,000 ft<sup>3</sup> operating room. In Test #1 and Test #2 air samples were first taken during surgical procedures with no AiroCide systems running. This established baselines for the tests. The AiroCide systems turned on after the baseline air samples were taken.

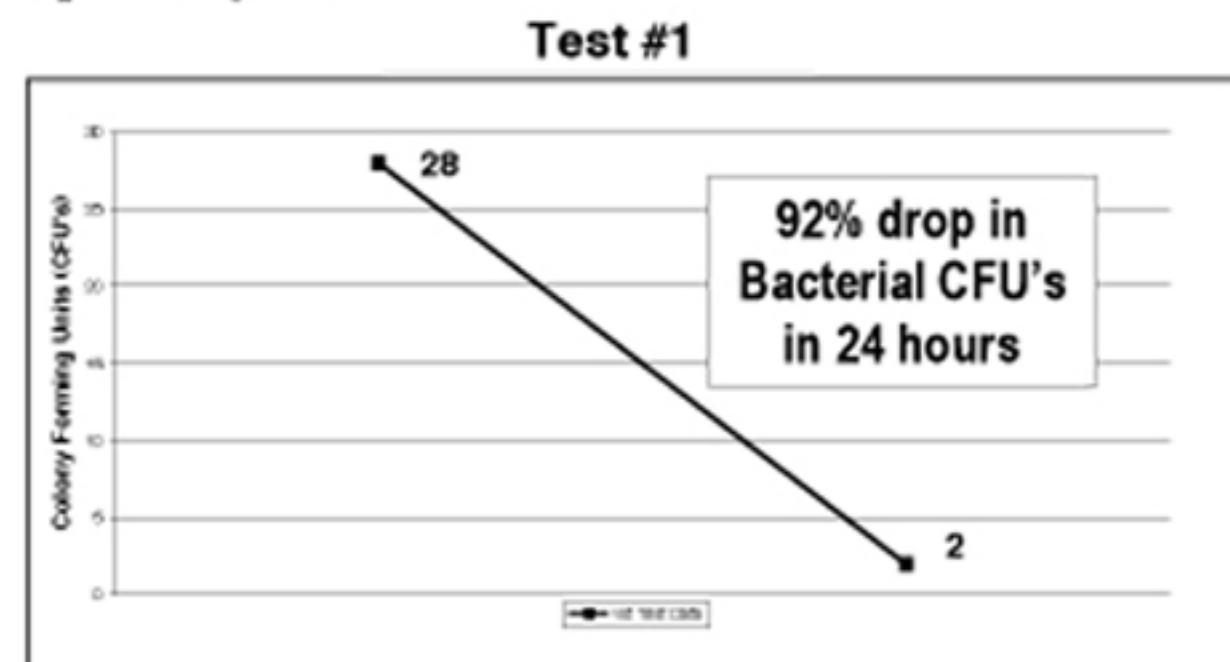
In Test #1 a second set of air samples (the "active" set) was taken after 24 hrs. of continuous AiroCide operation to measure the reduction of airborne bacteria. The 24-hr. air samples were taken during comparable surgical procedures as the baseline samples.

In Test #2 the active air samples were taken one hour after the baseline. The one hour samples were taken during comparable surgical procedures as the baseline samples.

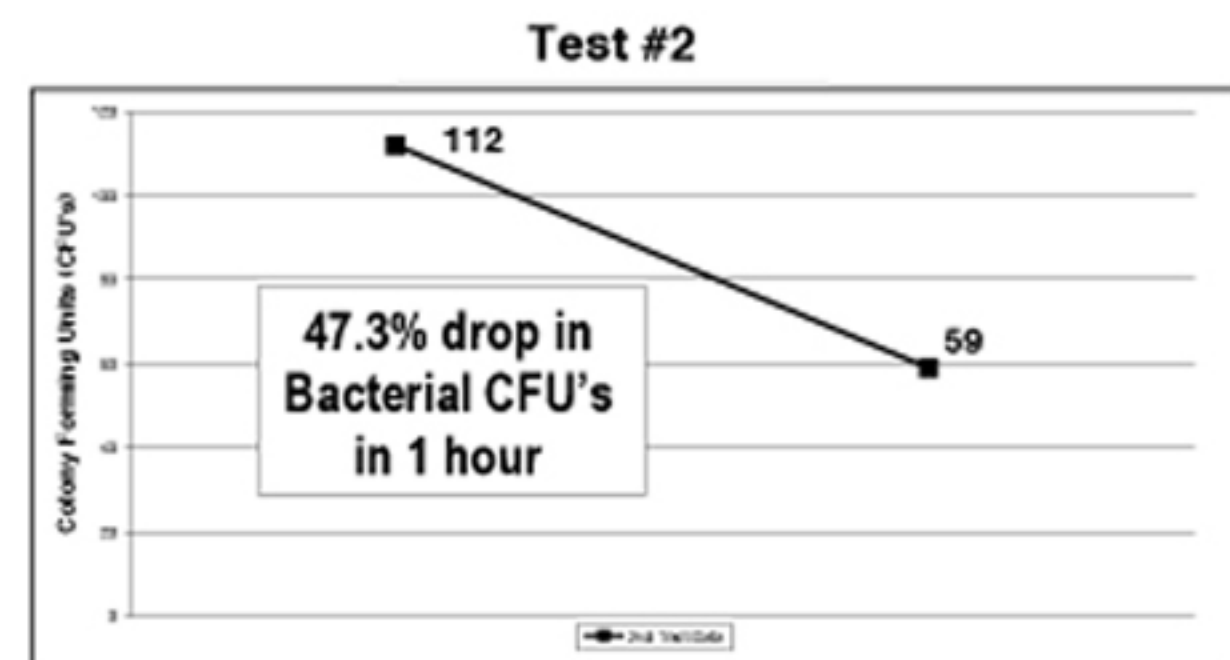
The same number of people were present in the room during all air samples and there were no environmental changes between baseline and active air samples (i.e. room cleaning, HVAC filter changing, etc.)

### **Results:**

Test #1 baseline samples showed 28 CFU's of airborne bacteria. After the AiroCide ran for 24 hrs., there were only 2 CFU's in the room. These numbers represent a 92.8% drop in bacteria in the operating room.



Test #2 baseline samples showed 112 CFU's of airborne bacteria. After the AiroCide ran for one (1) hour, there were 59 CFU's in the room. These numbers represent a 47.3% drop in airborne CFU's in the operating room.



*Copies of tests mentioned in this paper can be obtained by writing KesAir, Research & Development, 3625 Kennesaw N. Ind. Pkwy., Kennesaw, GA 30144.*

*AiroCide, KesAir & KesAir Technologies, and Air Quality-Improvement are trademarks of KesAir Technologies, LLC*

© KesAir Technologies, July, 2003

[www.kesair.com](http://www.kesair.com) 800-627-4913