

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:**

Tests were performed in multiple locations inside the offices of a dental practice to measure the efficacy of the AiroCide system in removing airborne bacterial and mold/fungal colony forming units (CFU's). The tests resulted in an average 45.3% reduction in airborne bacteria in 24 hrs. and an average 80% reduction in airborne mold/fungi in the same 24 hours period.

**Protocol**

Two AiroCide systems (model ACS-100) were installed in the offices of a 26,800 ft<sup>3</sup> dental practice.

Air samples were taken using an Anderson type Aerotech 6 vacuum air pump sampler and agar petri dishes. These samples serve as the data for the following recommendations and conclusions in this report. All agar plates were exposed to 28.3 l/m of air for 3 minutes.

Initial "Baseline" air samples were taken on 9/16/2004, outside, in the common lobby area. One (1) AiroCide ACS-100 (total of two (2)) were installed at each end of a common hallway that permits access to the individual offices and one (1) AiroCide ACS-50 was installed in the patient waiting room. All AiroCide's were turned on after the baseline samples had been obtained.

"Active On " air samples were taken after the three (3) AiroCide systems processed the entire office air for 21 hours. Care was taken to ensure there were no environmental changes between samples (i.e. room cleaning, HVAC filter changing, etc.) The

number of patients and staff only varied by three (3) individuals from day 1 baseline testing vs. day 2 "Active On" testing. There were three (3) more people in the offices on the second day "Active On" testing then there were on the previous day 1 baseline testing. A variance of plus or minus three (3) individuals in this large dental office is not significant enough to adversely effect the results.

**Results:**

The tests resulted in an average 45.3% reduction in airborne bacteria in 24 hrs. and an average 80% reduction in airborne mold/fungi in the same 24 hours period.

**Bacteria**

Air Sampling Sites	Day 1 Baseline CFU/m <sup>3</sup>	Day 2 Active On 24 hr. CFU/m <sup>3</sup>	Percent Change	Average % Change
Common Lobby <b>Outside</b> Dental Office	530	712	+ 34%	36% + 49% +51% / 3
End Of Hall Near Dr. Offices In Common Hallway	48	31	- 36%	<b>- 45.3%</b>
End Of Hall Opposite Dr. Offices In Common Hallway	95	48	- 49%	
Patient Waiting Room	154	75	- 51%	

**Fungi/Mold**

Air Sampling Sites	Day 1 Baseline CFU/m <sup>3</sup>	Day 2 Active On 24 hr. CFU/m <sup>3</sup>	Percent Change	Average % Change
Common Lobby <b>Outside</b> Dental Office	106	47	- 56%	74%+66%+100% / 3
End Of Hall Near Dr. Offices In Common Hallway	47	12	- 74%	<b>- 80%</b>
End Of Hall Opposite Dr. Offices In Common Hallway	35	12	- 66%	
Patient Waiting Room	36	<12 = 0	- 100%	

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

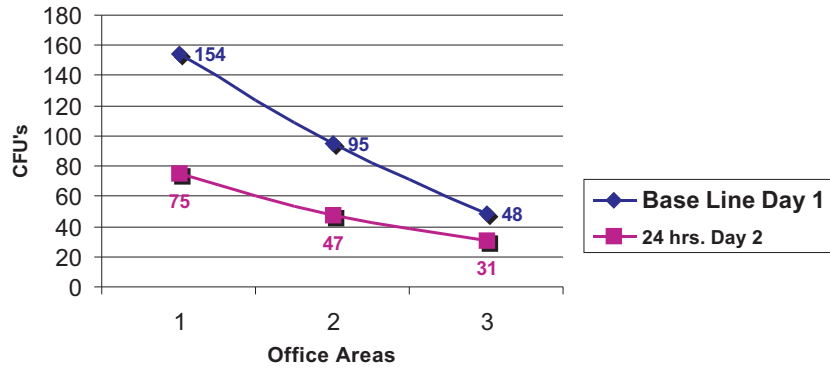
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www.kesair.com 800-627-4913

## Notchview Dental Airborne Bacteria Testing

Day 1 AiroCide T turned ON After Base Line Air Samples  
Day 2 Air Samples Taken After AiroCide Operated For 24 hrs.



## Notchview Dental Airborne Mold Testing

Day 1 AiroCide T turned ON After Base Line Air Samples  
Day 2 Air Samples Taken After AiroCide Operated For 24 hrs.

