

## Air Steril, Rhinovirus and MRSA

Air Steril units will kill harmful airborne and surface viruses including Rhinovirus (Common Cold), Norovirus (Gastroenteritis) and Influenza. Even antibiotic resistant surface pathogens such as MRSA or C difficile are killed in all indoor areas.



Porton Down Labs



MRSA Bacteria



Microbiologists

Viruses, Bacteria and Moulds are easily eliminated from exterior air and surfaces by nature, Air Steril units re-create these natural processes in an interior environment destroying the same pathogens.

All laboratory tests were conducted at the Health Protection Agency (HPA) 'Centre for Emergency Preparedness and Response' in the bio-safety laboratories.

Airborne testing at the HPA demonstrated 98.11% bacteria reduction and 92.17% reduction in the standard viral surrogate\* after only 5 minutes. Many products in the field of airborne pathogen control have been tested over an hour but this produces unrealistic results with a standard size test chamber.

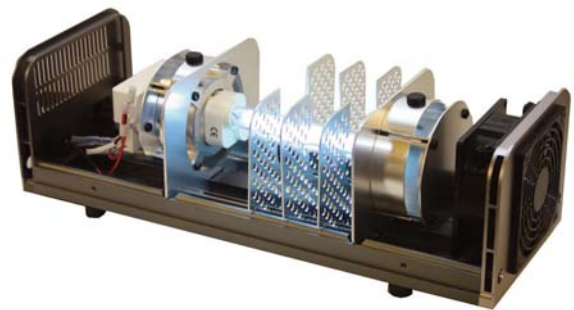
Surface testing at the HPA demonstrated 59.47% contamination reduction after an hour. Products attempting to treat surface pathogens have been tested over a 24 hour period, but it was calculated within an hour the cleaning air produced by the unit has reached the same levels as in a normal operating environment.

All testing was carried out with the lowest powered fan unit (MP20). The MP20 is designed to operate 24 hours a day in smaller occupied areas, meaning results can be easily compared to real world situations, rather than using a higher output unit which would produce unrealistic results.

The HPA results on both air and surface contaminants clearly show the value of this technology as part of the infection control process in any medical environment. In addition to the extensive laboratory testing and validations the Air Steril units have been successfully installed, studied and tested in a variety of real world environments (customer reports and testimonials are available on request).



Air Steril MP 20 Test Unit

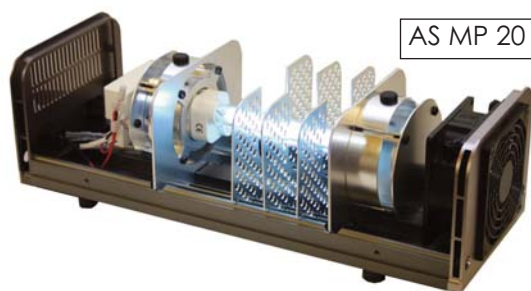


Air Steril MP20 with cover removed

\* 'MS-2 Coliphage' is accepted as a surrogate as although slightly tougher, is similar both chemically and physically to human pathogenic viruses but is easier and safer to work with, it can be quickly produced unlike viruses which will only re-produce on live tissue.

## INTRODUCTION

- 1) Airborne and Surface Micro-organisms can cause health risks in many different environments particularly in healthcare, washrooms, offices and gymnasiums, in fact any indoor environment where a volume of people are present.
- 2) Airscience Technology International Ltd has developed an air and surface purification device, designed to control bacteria, viruses, mould and fungi in the air and on exposed surfaces.
- 3) Utilizing Titanium Dioxide Nano Technology (UV/TiO<sub>2</sub>), air is drawn into a purification chamber at the rate of 300 litres per minute where internal mechanisms, triatomic oxygen, super oxide ions, hydroxyl radicals and heterogeneous catalysis, remove contaminants from the air.
- 4) The purified air with added Ions and triatomic oxygen is propelled back into the room again at 300 litres per minute and continues to purify the air and exposed surfaces.
- 5) The units are designed for continual operation as a control device, air is circulated through each unit manytimes every 24 hours in a cumulative purification process continually controlling air and surface contamination.



The device tested was an Airsteril MP20 unit, suitable for continuously occupied areas of approximately 20 sqmtrs (approximately 44 cub mtrs.)

## PROTOCOL

The tests were designed to test the unit's ability to control airborne and surface bacteria and viruses

### Airborne tests

Staphylococcus epidermidis NCIMB 12721 (a gram positive, cocci)

MS2 coliphage NCIMB 10108 (an enveloped single stranded RNA coliphage)

### Surface tests

Methicillin Resistant Staphylococcus aureus MRSA NCIMB 13162 (gram positive, cocci)

MS2 coliphage NCIMB 10108 (an enveloped single stranded RNA coliphage)

### Airborne Test Result

Micro-organism	Percentage Efficiency
MS-2 coliphage	<b>92.17%</b>
Staph. epidermis	<b>98.11%</b>

### Surface Test Result

Micro-organism	Percentage Efficiency
MS-2 coliphage	<b>59.47%</b>
MRSA	<b>51.81%</b>

## CONCLUSION

The tests were carried out for a "one hour" period and it is concluded that 92.17% to 98.11% for airborne contamination and 51.81% to 59.47% for surface contamination, demonstrates the effectiveness of the technology. Please refer to paragraph 5 in the introduction.