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**Path-Away Anti-Pathogenic Aerosol Solution®
Efficacy Reasons in a confined space.**

Previous articles by the author have established several factors relevant to the control of pathogenic bioaerosols including COVID-19-(SARS-CoV-2).

- a. Product utilized must have high efficacy across a broad spectrum of pathogens.
- b. Product utilized must have inherent low toxicity to humans.
- c. Product utilized must have the proper application methodology to succeed in its goal.

Path-Away Anti-Pathogenic Aerosol Solution® when used in a confined space such as a building interior and dispersed through The M3 System® Distribution Module micro vaporized in the eight (8) micron range is ground breaking pathogen control technology. The M3 System® Distribution Module was conceptualized to take advantage of the fact that virus-laden small (<5µm) aerosolized droplets can remain in the air and travel long distances allowing for the potential aerosol transmission of COVID-19-(SARS-CoV-2).

As previously defined, “Based on the kinetic theory of aerosols, particles as large as 8 microns will stay in the air for 300 seconds traveling a distance of 1 meter. With as little air flow in an HVAC system of 1270 ft/minute those particle sizes can be airborne for as long as 5 minutes which is sufficient time to travel down extremely long lengths of air conditioning duct distribution systems. Since the retention rate is actually logarithmic or exponential, that dwell time in moving air could be as long as 3 to 4 hours. Air change rates in buildings are dependent on numerous factors including type of construction, building conditioned space use, climatic conditions, ambient pathogen concentration levels and fan system efficiency. Needless to say, airborne particles as small as the COVID-19-(SARS-CoV-2) virus have the ability to circulate and recirculate through a closed indoor environment repeatedly while still viable and maintaining a high rate of infectivity.”

The M3 System® Distribution Module has an average dispersion rate of 5 gallons/18.927 liters per 3-week period. The total dispersion is not critically tied to HVAC system total cfm (volume of air) but rather to the fact that the total number of cubic feet of molecular volume can reach 1 billion individual Path-Away Anti-Pathogenic Aerosol Solution® molecules per 1,000 cubic feet of conditioned space circulating per hour. Consider some initial research as noted herein.

“Initial research (not yet peer reviewed) conducted at the University of Nebraska Medical Center indicates that COVID-19-(SARS-CoV-2) might also be transmitted via airborne particles. Thirteen individuals with confirmed COVID-19-(SARS-CoV-2) infection from the Diamond Princess cruise ship were cared for and evaluated in 2 separate isolation centers, the Nebraska Biocontainment Unit and the National Quarantine Center. Surface and air samples were taken from the rooms of these patients and analyzed by RT-PCR for the presence of viral RNA. 75% of all sampled personal items and 63% of in room air samples were determined to be positive for COVID-19-(SARS-CoV-2). Importantly, the detection of viral RNA did not tell whether the virus was viable or transmissible in the environmental samples that were collected, and further research is needed to determine whether COVID-19-(SARS-CoV-2) can

definitively be spread via airborne transmission. Furthermore, the New England Journal of Medicine recently reported that COVID-19-(SARS-CoV-2) remained viable in aerosols for 3 hours in a laboratory setting. We still need to know if this is true in clinical and environmental settings outside of the lab.”

In order for any anti-pathogenic product to attack and neutralize any pathogen, physical contact must be made. Physical contact with Path-Away Anti-Pathogenic Aerosol Solution® by the COVID-19-(SARS CoV2) seems to result in disruption of the viral envelope membrane structure thereby nullifying the pathogenicity of the virus.

The M3 System® Distribution Module provides introduction of Path-Away Anti-Pathogenic Aerosol Solution® in small amounts over a constant period of time (the very essence of toxicity: dose x duration). Since fresh air makeup will introduce additional pathogens there is a constant reintroduction of fresh anti-pathogenic solution to address both those recirculating airborne pathogens and provide continued surface protection on a daily basis. Surface protection is achieved through the addition of a non-chemical binding agent which allows some of the circulating molecules to adhere to surface in the system and on surfaces it comes in contact with.

Summary and conclusion.

Reintroduction over a constant period of time of high efficacy anti-pathogenic solution will form a cumulative barrier against all pathogenic bioaerosols it has proven efficacy against. With the assumed number of constantly circulating anti-pathogenic molecules, the likelihood that any circulating pathogens within the enclosed structure would not at some point come in contact is infinitesimally small. Contact will occur both by physical surface contact as well as by random motion of circulating pathogens and anti-pathogenic solution.

It is the authors conclusion that this material with this methodology provides unparalleled ground breaking, innovative pathogen control.

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Path-Away Anti-Pathogenic Aerosol Solution® was slightly modified by the addition of an FDA GRAS approved “binding agent.” Small micron vaporization of Path-Away Anti-Pathogenic Aerosol Solution® allows direct contact with total HVAC system surfaces thus providing a protective high efficacy layer of pathogen killing product. Small micron vaporization still allows product entrainment with circulating and recirculating air and does it with a minimum amount of product usage.

The unit that was developed is called The M3 System® and it works synergistically with the building’s HVAC system. Frequency and amount of Path-Away Anti-Pathogenic Aerosol Solution® can be regulated based on conditions. Introduction in small amounts over a constant period of time utilizes minimal fluid yet provides unparalleled efficacy. Since fresh air makeup will introduce additional pathogens there is a constant reintroduction of fresh anti-pathogenic solution to address both those airborne pathogens as well as recirculating pathogenic bioaerosols and provide continued surface protection on a daily basis.

The unit is fully automatic, compact, flexible in installation requirements and extremely cost effective. Finally, someone with global expertise solving critical pathogen problems has looked at the issue not just from the pathogen perspective but rather as a “systems” issue. The building environmental system is the “lungs” of the building. Without full understanding of that concept all that has been done is to attack the symptom and not the disease.

For information on both Path-Away Anti-Pathogenic Aerosol Solution® and The M3 System® visit Global Infection Control Consultants LLC at www.giccllc.com.

<https://giccllc.com/path-away.html>

<https://giccllc.com/m3-system.html>

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