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It's that important

Get the Facts & Commonly Asked Questions

PlasmaAir

Plasma Air's Needlepoint Bipolar Ionization is a Naturally Occurring, Safe and Effective Air Purification Technology

WellAir's mission is to make the indoor world cleaner and safer. Our Plasma Air needlepoint bipolar ionization technology has been deployed since 2007, with solutions distributed in carefully monitored, highly trafficked and sensitive environments such as K-12 schools, universities, medical and long-term care facilities, banks, office buildings and homes. Today these bipolar ionization solutions clean the air in over 400 million square feet of indoor environments worldwide.

Plasma Air's bipolar ionization solutions safely purify the air in over 400 million square feet of indoor environments worldwide.

At WellAir we take a transparent, science-based approach to product development and strive to create products that keep our indoor world safer for the people who inhabit it. Our teams are comprised of research scientists and engineers who are singularly focused on the hygiene of indoor spaces. With an over ten-year track record of strong efficacy and independent validation, our methods are the model of scientific integrity.

These solutions are designed to complement HVAC air filtration systems to neutralize pathogens and reduce harmful particulate matter without introducing ozone, carbon dioxide, volatile organic compounds (VOCs) or other dangerous chemicals or byproducts.

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Get the Facts

Do Plasma Air bipolar ionization solutions create volatile organic compounds (VOCs) or harmful airborne chemicals when in use?

FACT: Plasma Air's bipolar ionization solutions do not create VOCs nor does it breakdown VOCs into smaller harmful airborne chemicals.

In independent third-party testing Plasma Air's bipolar ionization solutions DID NOT create volatile organic compounds and did not break down VOCs into smaller harmful chemicals.

METHOD SUMMARY

Testing was performed by Intertek, a Nationally Recognized third-party laboratory following international VOC test standards (ISO16000-3 and ISO16000-6).

PRODUCTS TESTED - All Plasma Air's needlepoint bipolar ionization solutions:

600 Series	PlasmaPURE 600	AutoClean 1500 / 1560
7000 Series	PlasmaPURE 7000	Plasma Bar

- Tests were performed using walk-in test chamber with calibrated equipment following nationally recognized Good Lab Practices
- Chamber was challenged with VOCs for four hours
- VOC samples were collected at 5, 10, 15, 20, 25, 30, 45, 60, 90, 120, 180, and 240 minutes after device activation — samples collected and analyzed for EVERY POSSIBLE VOC THAT COULD HAVE BEEN CREATED FROM THE CHALLENGE COMPOUNDS
- The VOC samples were analyzed for chemical makeup using state of the art thermal desorption gas chromatography/mass-spectroscopy, TD-GC/MS, referencing ISO 16000-6
- Tests were performed with and without bipolar ionization to create a baseline control

RESULTS

Individual conclusions for each Plasma Air product were compared to the results of the baseline natural decay:

- None of the Plasma Air products generated organic byproducts (byproducts defined as compounds which can be analyzed by ISO 16000-3 or ISO 16000-6).
- There were no new VOCs and no new chemicals were created (that were not present in the control environment).

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Have the Plasma Air bipolar ionization solutions been tested and proven effective at reducing pathogens, like viruses and bacteria? What is the testing environment?

FACT: Plasma Air's solutions have been tested in large bioaerosol chambers and proven to reduce airborne pathogens and pollutants, including MS2 Bacteriophage (a surrogate for SARS-CoV-2, H1N1 Flu Virus and Norovirus).

Plasma Air's bipolar ionization solutions reduced MS2 bacteriophage (surrogate virus for SARS-CoV-2) by 99.39%

METHOD SUMMARY

For this study conducted by independent laboratory, Aerosol and Engineering Research (ARE), the Plasma Air (600 Series) was challenged using aerosolized MS2 bacteriophage, which has been historically used as a surrogate for influenza and is now considered a surrogate for coronaviruses such as SARS-CoV-2 due to the size similarity to influenza and RNA genome.

A large, sealed aerosol test chamber was used to replicate a potentially contaminated room environment and to contain any potential release of aerosols into the surrounding environment. An HVAC air duct was installed on top of the chamber for testing of the Plasma Air 600 Series.

Bioaerosol test chamber

This study evaluated the efficacy of the device against aerosolized MS2 bacteriophage in an air duct system installed on the **stainless steel bioaerosol chamber**. The study consisted of a total of three (3) live bioaerosol trials, and a single (1) bioaerosol control run.

- MS2 bacteriophage was aerosolized into a sealed environmental bioaerosol chamber equipped with an air duct system containing the Plasma Air device.
- AGI Impinger samples were taken from the chamber in order to quantify the reduction speed and capabilities of the Plasma Air device.
- AGI impingers were used to sample chamber bioaerosol concentrations, all impinger samples were serially diluted, plated and enumerated in triplicate to yield viable bioaerosol concentration at each sampling point and time.
- The chamber control trial data was subtracted from the Plasma Air trial data to yield net LOG reduction in the chamber for the bioaerosol challenges.

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RESULTS

When tested against the MS2 bacteriophage, the Plasma Air device showed a consistent net LOG reduction throughout the testing. The average net LOG reduction went from 0.63 at the 120-minute time point down to 2.24 at the 240-minute time point to end the trial.

A net LOG reduction of 2.24 is equivalent to a 99.39% reduction in viable MS2 bacteriophage.

NOTE: Included in ASHRAE's recent newsletter

Bipolar ionization of the air has been used in cleanroom applications to help reduce airborne particle counts and create the clean indoor environments for critical pharmaceutical, healthcare, semiconductor, food processing and manufacturing processes.[1] Studies[2] have demonstrated that air ionization is effective at removing aerosols and particles from the environment, providing significant reductions in particulate concentrations. Bipolar ionization has also been studied and **shown to be effective at both increasing the filtering rate of aerosolized pathogens as well as effectively increasing the decay of certain viruses and pathogens in testing.**[3,4,5,6]

Do Plasma Air bipolar ionization solutions create ozone?

FACT: Plasma Air's entire portfolio of needlepoint bipolar ionization solutions have been UL 2998 certified for zero ozone production.

This certification meets the UL qualification standard for ozone-free emissions and is compliant with ASHRAE standards. In addition, the CDC recommends that if you are considering the acquisition of bipolar ionization equipment, you will want to be sure that the equipment meets UL 2998 standard certification (Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners) which is intended to validate that no harmful levels of ozone are produced.

NOTE: ASHRAE Standard 62.1-2019, Ventilation for Acceptable Indoor Air Quality, details these restrictions with stringent requirements stating that air cleaning devices shall be labeled and listed in accordance with UL 2998 for zero ozone production.[7]

CARB Certified

Plasma Air's entire portfolio of bipolar ionization solutions have also been certified by the California Air Resources Board (CARB) to be compliant with their standards. In 2008, CARB enacted an air cleaner regulation to limit the ozone emissions from indoor air cleaning devices.

PUTTING HEALTH IN EVERY BREATH

A clean environment contributes to a community's well-being. WellAir and Plasma Air are wholly committed to putting health in every breath, ensuring the air we inhale and the indoor environments we live within are free from the pathogens and pollutants that threaten us. It's that important.

REFERENCES

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3 Hyuna, J., S.-G. Leea, J. Hwang. 2017. ". Application of corona discharge-generated air ions for filtration of aerosolized virus and inactivation of filter virus. " Journal of Aerosol Science 107:31-40.

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5 Essien, D., K. Coombs, D. Levin, Q. Zhang. 2017. "Effectiveness of Negative Air Ionization for Removing Viral Bioaerosols in an Enclosed Space." CSBE-SCGAB 2017 Technical Conference, Session IC.

6 Alonso, C., P. Raynor, P. Davies, R. Morrison, M. Torremorell. 2016. "Evaluation of an electrostatic particle ionization technology for decreasing airborne pathogens in pigs." Aerobiologia 32(3):405-419

7 ANSI/ASHRAE Standard 62.1-2019, Ventilation for Acceptable Indoor Air Quality, Section 5.7.1.