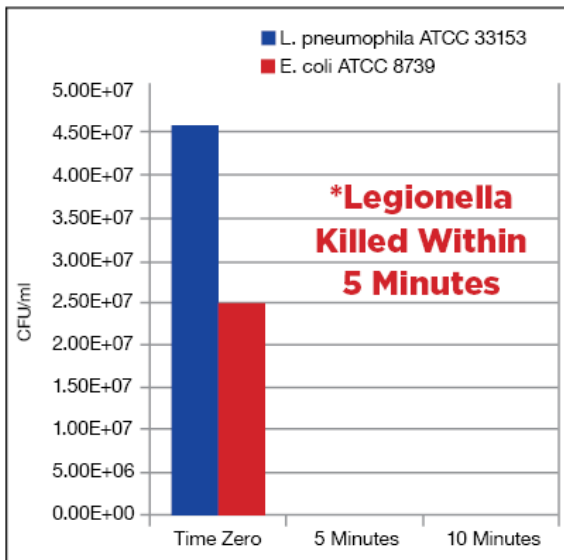


Cleancore's CCS Ice System Helps Prevent Legionnaires' Disease



Ice machines, like other water systems and features found in indoor environments, create ideal conditions for fostering the growth of bacteria – like Legionella – due to the dark, moist, warm environments they create. The ingestion of Legionella bacteria causes symptoms that include fever, headaches, shortness of breath and chest pains, gastrointestinal symptoms, and possible mental changes.

Microchem Laboratory was hired to conduct an independent study to test the ability of CleanCore's Aqueous Ozone to kill Legionella. The testing results showed that 5 minutes after adding the aqueous ozone solution the Legionella bacteria was destroyed.

CLEAN CORE SOLUTIONS CCS1000 ICE SYSTEM

Ice Machines provide an environment that if not cleaned on a regular basis can lead to a buildup of bacteria including Legionella. CleanCore's™ CCS Ice System destroys bacteria by sending .50 ppm of aqueous ozone through the ice machine each time it makes more ice, thus preventing harmful bacteria from contaminating your ice supply. Through this ozonation process, the CCS1000 eliminates the Legionella bacteria.



TESTING PROCEDURES AND RESULTS OF CLEANCORE ON LEGIONELLA

TESTING RESULTS

Microchem Laboratory has performed thousands of the ASTM E2315 tests to assess the changes in the population of microorganisms in an antimicrobial liquid suspension for an array of test substances. This method was developed by ASTM International, an internationally recognized organization that's sole purpose is to develop and publish standards for products and testing.

Microchem Laboratory conducted the independent, 3rd-party study testing CleanCore's Aqueous Ozone's effects on legionella suspended in water. They used the ASTM E2315 test method to analyze the change in the number of microorganisms present before and after adding CleanCore's water to the testing solution. The microorganisms, E. Coil and L. pneumophila, were first incubated in a medium, and then diluted to have a standardize number of microorganisms per test. Then, Microchem Laboratories used the CleanCore Solutions CCS1000 ice System, installed per factory specifications using a cold-water line, and added the aqueous ozone water at the ~0.50 ppm range produced from the ice system. The microorganism levels were recorded at the start of the test, time zero, then at 5 minutes, and 10 minutes.

For comparison, public health reduction of L. pneumophila is achieved at a log 3 or 99.9% kill. This testing shows a log 7 or 99.99999% kill, or complete destruction of L. pneumophila in the ~ 0.50 ppm Aqueous ozone solution.

Microchem Lab Study

| Test Device | Contact Time | Data Description | Test Microorganism | |
|------------------------------|--------------|-----------------------------|---------------------------|-------------------|
| | | | L. pneumophila ATCC 33153 | E. coli ATCC 8739 |
| CleanCore Ozone Water Device | Time Zero | CFU/ml | 4.57E+07 | 2.48E+07 |
| | 5 Minutes | CFU/ml | <1.00E+01 | <1.00E+01 |
| | | Log ₁₀ Reduction | >6.66 | >6.39 |
| | 10 Minutes | CFU/ml | <1.00E+01 | <1.00E+01 |
| | | Log ₁₀ Reduction | >6.66 | >6.39 |

The limit of detection for this assay is 10 CFU/ml. Values observed below this limit are presented as <1.00E+01.

Conclusion

The CleanCore Solutions CCS 1000 unit destroys Legionella pneumophila at its ~0.50 ppm concentration to a log 7 reduction. It is an effective, non-synthetic, sustainable way to kill Legionella pneumophila and keep water systems free of Legionella Disease.