PLANET FRIENDLY®
Est. 1994

Controlling Bacteria and Mold in High Purity Environments

By: Larry Couture

Bacteria and mold spotting on circuit boards is at a minimum a seasonal risk item and a process nightmare for companies manufacturing in a high purity environment.

"Since 1996, specific success in the control of coliform bacteria and fusaria mold has occurred using oxygenation and residual copper only ionization at purity ranges from 6 Meg Ohm to 100 TDS."

Results were marginal at 3 Meg Ohm on a 24/7 data log generated over a six month operating period, so 6 Meg Ohm is the recommended maximum purity for those with programmable controllers. It is believed ECOsmarte is the only company worldwide to ionize water.

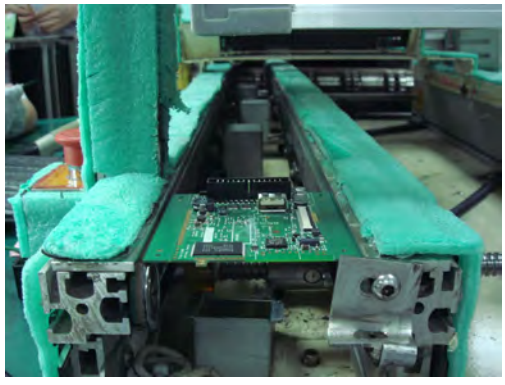
Initial installations have occurred with Wheelhorse 500,000 GPM per day RO (10-50 TDS) and deionization exchange tanks (3 Meg Ohm to 1 TDS) provided by Smith Engineering of Minneapolis, MN. Both applications required high wattage UV prior to install of the ECOsmarte ionization/oxygenation chambers and operated at 40-60 GPM.

Effective control in the 6 Meg Ohm to 1 TDS site, Multek Systems, required the addition of a recirculation tank where residuals can accumulate and be treated. Five copper/oxygen cells driven by an ECOsmarte Turbo G Programmable System have handled these 150,000 to 200,000 sq. ft. facilities.

"Ionization residuals have been continuously confirmed from 6 Meg Ohm conductivity to the full 1 TDS change out of the deionization exchange tanks."

At Multek Systems the exchange tanks lasted from 60 to 72 hours and arrived producing 3 Meg Ohm water for about 2 hours. This short window of time with ultrapure water allowed Multek to avoid forming the molds even though they had no protection for two hours every third day.

Increasing copper ppm has been effective at clearing fusaria microbe (pink mold) from production lines without shutting down.



1600 East 78th St. Richfield, MN 55423
(612)866-1200 (800)466-7946 US, Canada, Mexico
www.ecosmarte.com
www.glasspackfilter.com

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TECHNICAL SPECIFICATIONS

MECHANICAL & PLUMBING

Operating Press. Max. 150 PSIG
Operation Temp. Max. 120˚ F
Tank listing and structural integrity requirements only.

OXYGEN ELECTRODES
Proprietary composite material

IONIZATION ELECTRODES
100% Pure Copper

ELECTRICAL

Input Voltage: 110 to 267 Volts, Specify
Output Voltage: 100 VA Class UL CSA Compliance Power Supply
GPM: Each Unit 800 GPM to 6000 GPM

Commercial Systems May Require More Than One Electronics Package.

Headered Glass Pack® filters allow reuse of the wastewater, 90 GPM.

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