

Food & Beverages

Industry Specific Applications for UV Technology

With Food & Beverage UV system designs unparalleled in performance, Aquafine is committed to provide superior quality and the latest advancements in UV technology.



APPLICATIONS | TOC Reduction, Chlorine Reduction, Ozone Destruction, Disinfection

UV SERIES | TrojanUVLogic, Optima HX, SCD H, ChloRid

UV TECHNOLOGY FOR FOOD & BEVERAGE

The Food & Beverage market includes diverse industries, such as bottled water, food packaging, crop irrigation, carbonated & non-carbonated beverages, dairy plants and meat and poultry processors. Ultraviolet (UV) technology has been successfully used in these related industries for control of pathogen microorganisms. While the most common application for UV light in water treatment is disinfection, the technology can also be utilized in TOC (total organic carbon) reduction, chlorine/chloramines reduction and ozone destruction.

Aquafine UV systems are also used to disinfect any product water used as an ingredient in food or beverage products. Bottled water and product water for concentrates, soft drinks, tea and beer are commonly disinfected with Aquafine 254nm UV systems.

Heat treatment-pasteurization techniques are efficient in handling low UV transmittance (UVT) and some degree of suspended solids (SS) and total dissolved solids (TDS) and are preferred by many product producers, however pasteurization is expensive and thus UV can be more green and efficient as the pasteurization and energy costs continue to rise. UV is a non-chemical process and doesn't change any physical characteristic of the fluid and concerns of chemical handling and cost of removal of chlorine from the water stream are eliminated. Most importantly, UV treatment does not promote the generation of disinfection by-products, such as Trihalomethanes (THM), which regulatory agencies have classified as carcinogenic at certain levels in drinking water.

Aquafine UV systems can also be used to replace carbon beds, or be used in conjunction with carbon beds to minimize or eliminate chlorine and chloramines while providing 3 log or better reduction of organisms. UV offers a cost effective means to not only disinfect, but eliminate chlorine and chloramines in the pretreatment phase.

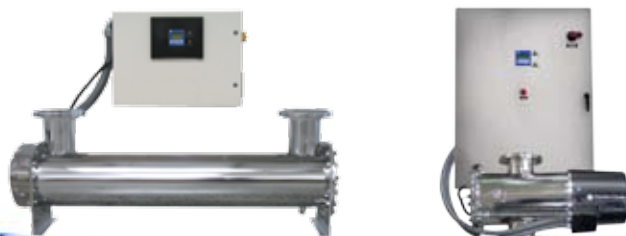
Aquafine offers validated systems, including lamp, sensor material certification and final assembly testing, carrying the marks of cULus, UL, CE and ANSI/NSF.

UV TECHNOLOGY

Aquafine UV systems are engineered to focus the power of concentrated UV light utilizing one or several specially designed Aquafine Colorguard UV lamps, recognized in the industry for unsurpassed performance and reliability.

Aside from being environmentally responsible, UV technology for water treatment produces no harmful by-products, imparts no taste or color and yet disinfects water to meet the highest standards in a variety of applications.

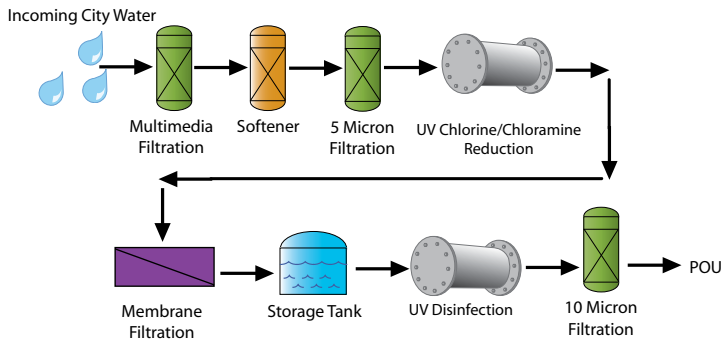
For questions regarding your application needs, please contact your local Authorized Distributor or Aquafine Corporation for more information.



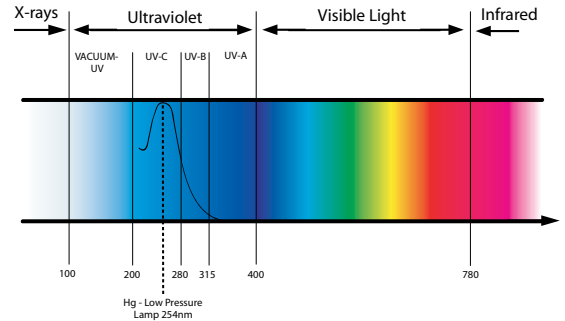
Aquafine[®]

60 Years of Pure Quality

FOOD & BEVERAGE WATER TREATMENT SYSTEM



Ultraviolet light is invisible to the human eye, but a highly effective, chemical-free way of inactivating microorganisms and reducing chemical compounds present in the water.



UV Applications for Food & Beverage

DISINFECTION

This is the most common application of UV light in water treatment. A properly sized UV system is designed to meet a minimum of 3 Log reduction a minimum of 30,000 micro-watt seconds (or $30\text{mJ}/\text{cm}^2$) at one year, the end-of-lamp life (EOL). Some typical locations of installation would be: points-of-fill, points-of-rinse, brine solutions, post-carbon filter, pre-membrane filtration or RO (reverse osmosis), post-water and pre-syrup storage tanks. A UV system can significantly reduce the microbial counts by destroying at least 99.9% of the bacteria present in the influent stream, when installed at the appropriate locations in the treatment process loop such as downstream of the carbon bed and/or directly upstream of the membrane filtration or RO.

TOC REDUCTION

In ultrapure water systems, UV treatment is used for the effective reduction of organics, commonly referred to as TOC. Reduction of TOC is accomplished by incorporating a 185nm UV system appropriately designed and sized as well as strategically placed.

OZONE DESTRUCTION

Ozone is commonly used in the pretreatment area of a water system as well as for sanitizing process and recalcifying systems. Prior to the point-of-use, the residual ozone needs to be destroyed to ensure the product is not contaminated. Because of non-chemical and fast mechanism, UV technology is the preferred method for this application. After taking into the appropriate variables, a properly sized UV unit can be guaranteed to destroy the ozone to non-detectable limits, insuring the integrity of the process and the product.

CHLORINE/CHLORAMINES DESTRUCTION

While the addition of chlorine and chloramines to city water may control bacteria levels, they have undesirable effects on the degradation of membrane filtration or RO. But popular methods of removal, such as carbon beds or chemical injection, have proven to be problematic. Sodium metabisulfite involves removing one chemical with another and creates food for organisms, while carbon beds can be inefficient, vulnerable to channeling and provide breeding grounds for micro-organisms. Aquafine Corporation pioneered the technology of chlorine and chloramines destruction utilizing UV light in the pre-membrane filtration or RO make-up water stream.



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Aquafine equipment performance is guaranteed with the use of genuine OEM replacement parts.

