



# Food & Beverages

Ozone solutions for air and water treatment



Filling lines



Tank CIP



Food industry

## What is Ozone?

Ozone (O<sub>3</sub>) is a very powerful oxidation agent. It is easily soluble in water, and has a fantastic capacity to eliminate micro-organisms that are part of water pollutants. Once the effect has taken place, it dissolves, returning to an oxygen state.

## Uses of ozone

Ozone is, both in water and air a powerful disinfectant, bactericide, virucide, and fungicide. The main applications of ozone are for disinfection, deodorization of the environment and for the treatment and purification of water. With this, the elimination of pathogenic micro-organisms and bad odours is achieved.



# Beverages Industry

## How does it work?

Ozone is the most efficient disinfection agent available and replaces traditional chemicals such as hypochlorite, peracetic acid (PAA) and hydrogen peroxide. Ozone is produced in-situ and on demand only and utilizes oxygen as its only raw material. After use it quickly and naturally decomposes into oxygen, leaving no chemical byproducts. With ozone you can achieve:

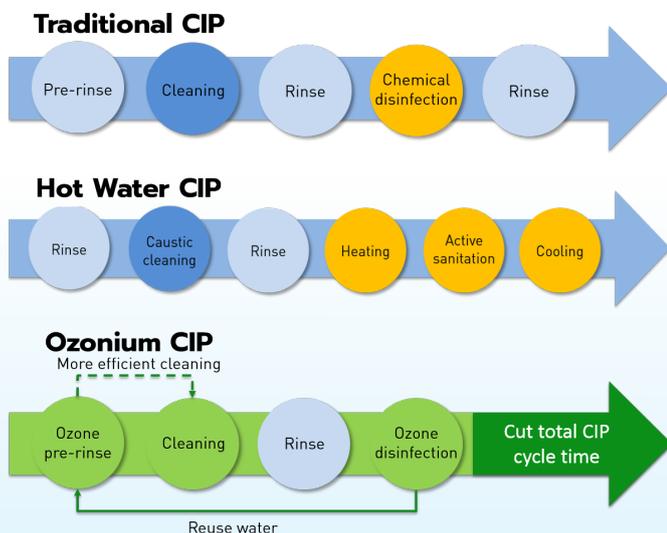
- Reducing energy costs
- Handling, storage and administration of chemicals in cleaning is reduced and in disinfection.
- Prolonging the brewing equipment life time
- Reduce production down-time
- Minimizing water consumption

## What can I use it for?

### TANK DISINFECTION (CIP)

Ozone can be used as the sanitation agent to reduce total CIP time, obtain water and energy savings and reduce chemical handling and consumption. Ozone completely replaces costs and handling of traditional sanitation methods using chemicals or hot water.

Ozone leaves no residual chemicals after use which means final rinse is not required. This enables a 3-stage CIP instead of 5 cycles.



### AROMA COMPOUNDS REMOVAL

For breweries that produce successive batches of various types of beverages - mixed batches of beer, cider or flavoured mineral water - aroma cross contamination may occur. The effective oxidizing characteristics of ozone present a novel way of removing aroma compounds which may otherwise contaminate the finished product.

### FILLING LINE

All components of the filling line can be disinfected with ozone as a part of the CIP cycle. In addition, it can be used for bottle rinsing, especially applicable in mineral water or cider production where bottle rinsing is crucial. Hot water, which is especially common for filling machine sanitation, can be replaced with cold ozone, saving time and energy.

### KEG SANITATION

Ozonated water is also suitable for keg filling machines and its CIP system. Ozone replaces steam and hot water in these applications, making it an economically viable application.

### SUPPLY WATER QUALITY ASSURANCE

Sanitized and clean supply water for industrial use is an issue in food and beverage production in many parts of the world. Ozone is a cost-effective method to sanitize the supply water used for brewing, sanitation of process equipment and plant wide rinsing. Not only does ozone offer the most effective sanitation, it also removes BOD and COD. In addition, it provides ultra-clear water by removing particles and discolourations. Ozone leaves no by-products or taste. It is a perfect alternative to chlorine dioxide sanitation, which is commonly used

### OPEN SURFACE OZONE SANITATION

Ozonated water is an effective surface sanitizer (also known as COP, clean out of place), which means it can be used for conveyor belts (for example in the filling line) and floor areas in the brewery.

# Food Industry

## How does it work?

The food and beverage industry faces a number of challenges in order to advance towards a more sustainable and environmentally friendly production. This comprises, among other, reduction of chemical use, water consumption and energy preservation. Also:

- Prolonging the machinery life time
- Reduce production down-time
- Minimizing water consumption
- Wastewater management

## What can I use it for?

### SANITATION OF EQUIPMENT

Closed process equipment which comes in contact with fresh or processed food and beverage, such as pipes, vessels and evaporators must be kept clean and sanitized in order to maintain proper level of hygiene and work environment. The strongly oxidizing characteristics of ozone makes it a viable complete replacement for traditional chemical disinfectants. Typical heat treatment of components such as heat exchangers and valves can also be avoided.

### FILLING & PACKING

To achieve prolonged shelf-life, ozone technology provides effective sanitation of packages and rinsing of bottles, both for beverages, foods, spices and highly viscous fluids such as sauces, ketchup and mustard.

### WASTEWATER

Since ozone does not leave any harmful by-products, ozonated disinfection water can be reused for other CIP phases, such as pre-rinse. In this respect, ozone disinfection can reduce the water consumption of the whole CIP process. Reduced water consumption means less load on wastewater treatment plants. Some wastewater effluent is inevitable in any food & beverage plant. Our ozone systems break down industrial wastewater COD, TOC and BOD effectively and can be integrated into existing wastewater treatment plants.

### CIP

For closed process equipment in the food and beverage industry, ozone completely eliminates the need for traditional, organic and chlorine based disinfectants. This reduces the consumables cost and handling. It also makes typical CIP cycles more effective.

### RINSING

During handling of fresh produce like tomatoes, potatoes and lettuce it is of utmost importance to avoid cross-contamination of bacteria and other micro-organisms that may arise from growth on open process equipment, for example conveyor belts. Upon utilizing ozone as a sanitizer, the only bi-product is oxygen (which is the natural breakdown compound of ozone). This makes a solution from Ozonium an environmentally friendly alternative to ensuring high standards and freshness in the fresh food handling procedures. Thanks to its non-organic, intrinsically natural characteristics, ozone is an ultimate compound for rinsing vegetables, fresh-cuts and other non-processed products.

### COOLING SYSTEMS

Many food processing facilities are dependent on cooling loops and towers for low temperature storage or temperature control of purified water (PW) used in production. Ice water based cooling systems are prone to microbial growth which clog filters and enhances the risk of legionella outbreaks and general non-hygienic conditions. Ozone technology provides a very efficient way of ridding the system from all potential growth of bacteria and mold. It provides a microbe free environment at with the following benefits:

- Elimination of biofilm
- Very low operational cost (between 0.2-0.5 kW total input power depending on the flow and volume of the cooling system)
- No harmful by-product build-up
- Very gentle on all materials



### Manufacturer Certifications



ISO 9001 and BUREU  
VERITAS



FUNDING MEMBER of  
EUO3TA



CE CERTIFICATION



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## Thank you for your trust

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