

Ozone: The Chemical Free Oxidant for Food and Drink Processes

Ozone has been used for over 100 years as a preservative for foods and food ingredients, as well as purification in the brewing industry, odour control and medical therapy.

Ozone is a highly effective oxidant which is approximately four times more reactive than chlorine.

The application of chlorine is usual practice in several countries. However chlorination can cause the formation of hazardous by-products, such as carcinogenic trihalomethane (THM) in food. Therefore Ozone is deemed as the suitable alternative and has generally regarded as safe (GRAS) status. Likewise, the use of Ozone in disinfecting bottled water leaves no toxic residues. Ozone is capable of destroying all bacteria algae and biofilms with no risk of resistance, build up, or immunity, making Ozone an ideal choice for direct food and drink applications.

SOCOTEC's wide range of Ozone generators and our in-house technical ability means that we can design and manufacture the correct equipment to suit your application, whether for the use on process/CIP water or in-air disinfection/odour control. We offer:

- Stainless Steel cabinetry / vessels / skids
- High efficiency, low energy Ozone generators
- Range of outputs / alarms for your monitoring system
- Remote monitoring and control
- PID control
- Residual monitoring
- PLC driven
- Self diagnosis
- In house design consultation
- Service agreement



USING OZONE IN FOOD AND DRINK PROCESSES

Cleansing Fruit and Vegetables Using Ozone

General practice for cleansing fresh fruits and vegetables consists of washing in ozonated water, and the wash water is recaptured and treated by filtration and ozonation. The treated wash water is free of bacteria, colour and suspended solids and can be recycled to reduce water usage. Unlike conventional Chlorine-based washing systems, wastewater discharged by the ozonation process is free of chemical residuals, a growing concern related to the environment and groundwater pollution.

Sanitising Foods and Preventing Bacteria

Gaseous Ozone is a strong sanitisation and fumigation agent, which can be used to sanitise foods in the storage room and during shipping to prevent bacteria, mould and yeast on the food surface and to control insects. It can eliminate undesirable flavour produced by bacteria and chemically remove ethylene gas to slow down the ripening process, allowing extended distribution.

Disinfecting Bottled Water

For decades it has been known that Ozone is an effective disinfectant of food products, now it is also commonly used in the disinfection of bottled drinking water. Ozone is particularly soluble in water; it is effective in killing microorganisms through oxidation of their cell membranes. Ozone has a unique property

of autodecomposition and will leave no toxic residues. This feature gives bottling plants the opportunity to disinfect the drinking water and extend shelf life without chemically adding to the process water.

Other applications for Ozone include:

CIP (Cleaning in place): Where higher ozone concentrations are used to sanitise pipework rather than pasteurising the system. Ozone is an efficient biofilm remover.

Iron and Manganese removal from process water:

The oxidation of the Iron and Manganese allows filtration to remove the Iron and Manganese with ease, therefore reducing turbidity and increasing palatability.

WANT TO FIND OUT MORE ABOUT OZONE AND DISCUSS YOUR SPECIFIC NEEDS?

SOCOTEC's highly experienced experts offer a flexible approach and individually designed solutions. For more information or advice please call 0845 603 2112 or email salesuk@socotec.com

