

## Disinfection

Water disinfection is often an essential part of the water treatment in a beverage company. It assures not only microbiological unobjectionable condition of the treated product water, it also safeguards the water after the treatment up to the point of use against infection. There is quite a number of disinfection methods known of which not all can be recommended without any reservations.

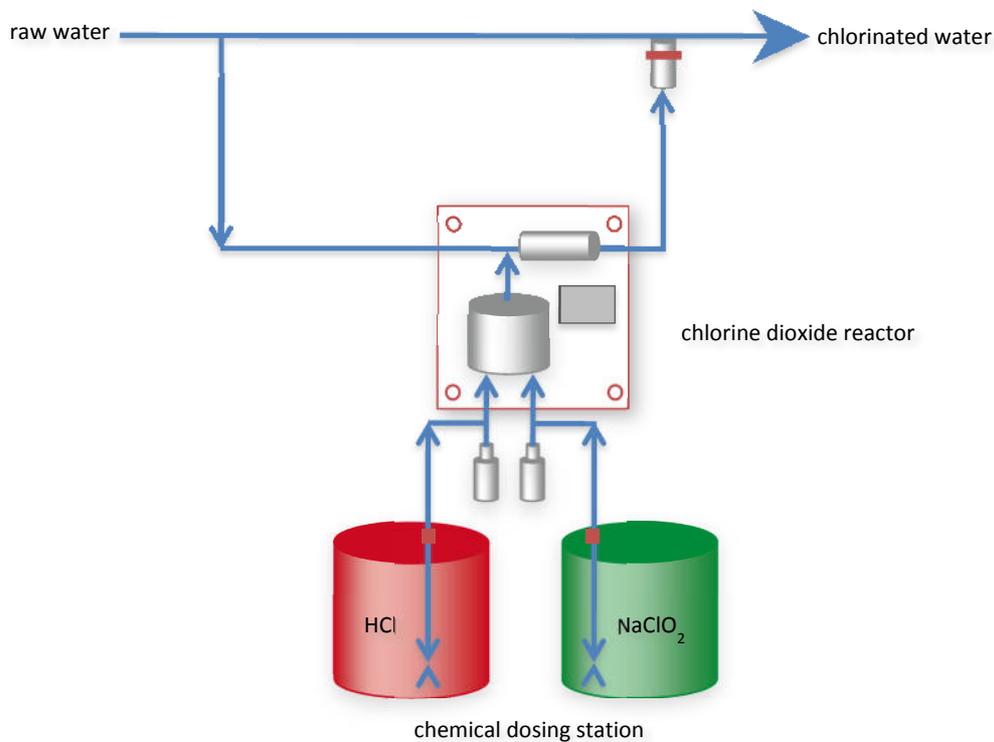
EUWA's preferred disinfection method is by chlorine dioxide, which operates according to the following formula:



The advantages of  $\text{ClO}_2$  system are its simple and safe operation, and the fact that it produces no by-products such as trihalomethanes (THMs). In comparison, sodium hypochlorite and chlorine gas are much more critical as they can create such undesirable by-products.

Ozonation for disinfection is significantly more expensive compared to chlorine dioxide. It is therefore recommended by EUWA only in cases in which oxidation is necessary, for example for iron and manganese in waters with low pH where a preceding correction of the pH is not allowed. Further, ozonation is used in the drinking water production where the effect of residual

# Chlorine dioxide ( $\text{ClO}_2$ ) as disinfectant



ozone protects the treated water on the way into the bottle and provides a sterile environment in the bottle. The residual ozone degrades completely under daylight after sealing the bottle. Ozone, however, can be problematic in bromide-containing waters as there is a risk of a bromate formation.

In contrast to ozone and chlorine dioxide, UV has no residual effect in water which bears the risk of reinfection. Moreover, the water must be treated thoroughly to ensure adequate transmission of UV rays. UV is often used for in-line applications just upstream of the consumer. An interesting new application of UV is the de-chlorination of water.

## THE WORLD OF WATER TREATMENT



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