

## Chlorination

At the turn of the twentieth century, demand on water supplies increased considerably. Wastewater was discharged directly into waterways without prior treatment. As a result, water quality deteriorated and caused the spread of deadly diseases like Cholera and Typhoid. Chlorination, or the addition of chlorine to disinfect water, was introduced to control waterborne pathogens. It turned out to be an effective treatment method that significantly reduced the spread of waterborne diseases.

Chlorination is a powerful water disinfection technology. In fact, it is still used in many water treatment plants throughout the world. It is effective against almost all microorganisms including bacteria, viruses and protozoa. Chlorine is added to water in minute amounts, yet it is enough to prevent recontamination with microorganisms after it leaves the treatment facility. In addition to microbial control, chlorination also removes soluble metals like manganese and iron as well as hydrogen sulfide (the cause of rotten-egg smell).

Despite the many benefits of chlorine, there has been public concern about its health effects. Chlorine can react with organic compounds in the water to form byproducts like trihalomethane (THM), a suspected carcinogen. This condition is more problematic in summer time when organic content of water increases tremendously. However, these concerns are “extremely small” compared to the benefits of chlorine disinfection, according to the World Health Organization.

In addition to the concern regarding disinfection byproducts, chlorine makes water aesthetically unpleasant by creating taste and odour. Nonetheless, most municipal water supplies are chlorinated to ensure complete disinfection prior to distribution.

Chlorine in residential water supply can be removed by using an Activated Charcoal (AC) filter. AC filters adsorb chlorine, organic compounds, as well as trihalomethane, thereby removing taste and odour and removing any risks from disinfection byproducts.

When choosing an AC filtration for residential water, ensure that the filter meets the NSF standards with regard to chlorine and VOCs removal to ensure maximum filtration.



**Water chlorination was instrumental in controlling epidemics like cholera**



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