

# CHLORINE & DRINKING WATER



## What is free available chlorine?

Free available chlorine is the free chlorine concentration that remains in the water after disinfection.

## Free available chlorine in water

When there is a free available chlorine concentration remaining after a disinfection process, we know that the disinfection was efficient and we know that the water is free of any harmful microorganisms.

If free available chlorine is present in any water source, it is indicative of treated water, since it does not occur in natural waters

## What problems can free available chlorine cause?

- The absence of the free available chlorine after treatment can cause health problems, since it shows that disinfection was not done or that it was insufficient and microbiological infections can still take place.
- If residual chlorine is present in acceptable concentrations, it can prevent secondary contamination of a treated water source, thus rendering water safe.
- If the residual chlorine is too high, it can cause mucous membrane irritation, nausea and vomiting.
- Sensitive groups are children under the age of two or any person with sensitive skin or allergies
- From an aesthetic point of view, too high a concentration of residual chlorine can cause the water to be unpalatable, tasting and smelling of disinfectant.

## Managing free available chlorine in the water.

Where the free available chlorine concentrations are too high, the water can be treated in the following ways:

- Better chlorine process control i.e. monitor dosage of chlorine and adjust chlorine concentration accordingly
- Reducing the free available chlorine concentration by boiling or by storing the water in covered containers
- Using a carbon filter or activated carbon will also remove the chlorine taste from the water (expensive way of removing chlorine).

## Sensitive Consumers

Most individuals are able to taste and smell chlorine in drinking water at concentrations well below 5mg/liter, and some at levels as low as 0.3mg/liter. At a residual free chlorine concentration of between 0.6 and 1.0mg/liter, there is an increasing likelihood that some consumers may object to the taste. The taste threshold for chlorine is below the health based guideline value.

During the water treatment process (coagulation, sedimentation, filtration and disinfection) chlorine is added in a gaseous form. Rand Water purifies the water through a conventional purification process, resulting in adequate chlorine concentrations of <0.2mg/l to 0.6mg/l in your tap water.

Visit [www.reservoir.co.za](http://www.reservoir.co.za) for further information on water quality in your area.

