Chlorine

The municipal water distribution system, a modern miracle, would not be possible without chlorination or similar disinfectants. Chlorine is thought to destroy or deactivate disease-producing organisms by disrupting microbial DNA and RNA. Another benefit is the improvement of water quality resulting from the reaction of chlorine with ammonia, iron, manganese and organic substances, allowing the filtration and sedimentation processes to work smoothly.

Chlorine can contribute some adverse effects however. Many consumers whose water source is chlorinated, wish to remove the chlorine taste and odors from their water. For many, it's an aesthetic issue and having de-chlorinated or chlorine-reduced water tastes better, or is more pleasant to shower and bathe in.

Some individuals however have sensitive skin and have allergic reactions to the chlorinated water, including reddening of the skin, skin rashes and other irritations. Tastes and odors from phenols and other organic compounds that are in water, can be intensified after chlorination. Potentially carcinogenic chloro-organic compounds such as chloroforms can be formed, and are strictly regulated by USEPA standards.

If ammonia is present in the water to be treated, or is added as a part of the treatment process, compounds of chlorine and ammonia form chloramines, and can have very negative effects on aquatic life, including home aquariums.

Chlorine is removed by activated carbon and certain other catalytic media if desired, although care must be taken so that the device removing the chlorine, and the downstream piping, does not become infected with bacteria.