



Drinking Water and Chlorine Smell

By Linda Golodner



How would you describe the taste and odor of your tap water? “A rich bouquet earthy flavors”? “Sulfurous aroma with a hint of chlorine”? Or “simply divine”? The aesthetic properties of your tap water depend upon your local natural water supply source, how your water is treated, and how it is delivered to you.

In the case of [private well water](#) that undergoes no treatment at all, taste and odor are simply a function of naturally occurring minerals and organic matter in the locally tapped groundwater. Municipal treatment adds another level of “complexity” for the palate.

“Ultra-treated” water is disagreeable. Distilled water for example, which is pure water with no dissolved components, tastes flat, bitter, and astringent. That’s because our mouths are accustomed to the pH and mineral content of our saliva, which are quite different from those of distilled water.

A refreshing glass of drinking water requires certain chemicals be present in combination, such as calcium and bicarbonates. And a safe drink of water from a municipal treatment plant probably made contact with chlorine when it was added to destroy the waterborne germs that are capable of spreading serious diseases, such as typhoid fever and cholera. That’s important for our health, but not usually desirable from a taste and odor perspective.

Smells Like Chlorine

The chlorine odor of tap water can be traced to the chlorine “residual,” a low level of chlorine maintained in water to guard against pathogens, such as bacteria, viruses and parasites in water as it flows from the treatment plant to points of use. In the US, even treatment plants that use non-chlorine disinfection technologies are required to add chlorine to the water before it flows into the distribution system. The chlorine residual acts like a “body guard” for water in transit. As long as there is a residual level of chlorine, water is considered microbially safe.

According to water treatment professionals, if the chlorine residual level is sufficient without being excessive, water will not smell like chlorine. Yet, sensitivity to the smell of chlorine varies among consumers. The [US Environmental Protection Agency](#) requires treatment facilities to maintain a chlorine residual level that is chemically detectable but no greater than 4 mg/l. Four milligrams per liter is the

“Maximum Residual Disinfectant Level” for chlorine and it is the level below which there are no known or expected risks to health.

Most people can sense a chlorine residual around 1 mg/l. If your water smells strongly of chlorine, it is possible that your treatment facility conveys water over a long distance, requiring heavy chlorination to maintain a chlorine residual throughout the system. This can be remedied by systems reducing chlorine added at the treatment plant and installing *booster chlorination systems* in the distribution line.

Consumers bothered by a chlorine smell have the option of installing activated carbon filters at their tap to eliminate residual chlorine in water safely delivered to their homes. Alternatively, chlorine can be made to dissipate by filling a pitcher of water and letting it sit for several hours. Transferring the water rapidly between two pitchers can accelerate chlorine dissipating.

Consumer Confidence Report

Do you have a question about your drinking water quality? If your home is served by a community drinking water system, you should receive a consumer confidence report (CCR) from your water supplier each year by July 1. A CCR provides a general overview of the water quality delivered. This [EPA website](#) contains links to some drinking water systems reports and a [Frequent Questions section](#).

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