



## Drinking Water Taste and Odor

If you are on a municipal or other public water system, you can be sure that your water is routinely monitored for most health hazards according to State and Federal laws. Although taste and odor problems can be associated with serious health risks, they are more commonly just a minor nuisance caused by one of the sources described below.

### Testing for Taste and Odor

Although laboratory tests exist for taste and odor, they are of little value to the average consumer. You can often identify and reduce taste and odor problems by performing a simple glass test at home. Persistent issues should be referred to a water treatment professional.

#### Glass Test

First, perform the "glass test" using the following steps:

1. Turn on the water and let it run for thirty seconds;
2. Rinse a glass twice and fill it with water;
3. Turn off the water and take the glass to another room;
4. Smell the water in the glass and describe the odor.

If the water in the glass does not have a noticeable odor, the original odor is probably due to bacteria living in the sink trap (the "U" shaped pipe) under your drain. Foul odors often come from the drains or garbage disposals. In bathroom drains, toothpaste, hair and skin flakes provide food for bacteria. In kitchen drains, food waste does the same thing. Since the odor caused by this rotting organic matter and bacteria is forced from the drain when you turn on the water, you'll probably notice the odor most when running the water or doing such things as brushing your teeth over the sink. To get rid of these odors, fill the sink with hot water, add an ounce of household bleach and allow the water to slowly drain.

If the water in the glass still has noticeable odor, it may be due to one of the following causes:

#### Change of Water Source

During peak demand periods, your water company may employ a new water source that may change the taste or smell of your water. The difference could disappear as soon as demand allows the additional source to be shut off.

#### Swampy, Fishy, or Musty Odors

A constant swampy, fishy, or musty odor, particularly during hot weather months, may be the result of an algae bloom in the water supply. Microscopic plants thrive at different times of the year in the rivers and reservoirs. Although this algae is removed during the treatment process, some "plant juice" may be left behind. This may impart an odor to the water, but it is not harmful. If you chill the water in the refrigerator the smell or taste may be less noticeable. A charcoal filter will also help remove offensive taste and odor.

#### Medicinal or Chlorine Odor

Medicinal or chlorine odors usually result from the chlorine used to disinfect the water. Although chlorine levels in your drinking water are a fraction of what is found in pools and spas, you may occasionally detect the smell of chlorine in your water. This odor may be particularly strong in the shower since chlorine is released into the air more rapidly when mixed with hot water. If the smell of chlorine bothers you, allow some water to sit in an open container. The chlorine will dissipate. Cap the container and store it in the refrigerator for later use. A charcoal filter will also help remove chlorine taste and odor.

## **Sulfur or Rotten Egg Odor**

A rotten egg smell is caused by hydrogen sulfide. The human nose can detect as little as a few *parts per billion* hydrogen sulfide, so it doesn't take much to create an offensive odor.

This problem could be in your water heater. Your water heater may be contaminated with sulfur reducing bacteria (SRBs), particularly if your water heater was recently turned back on after a period of disuse. SRBs break down sulfur compounds, producing hydrogen sulfide gas in the process. A water heater provides a good environment for SRBs because it contains a sacrificial anode. The anode is a magnesium rod that helps protect the water heater by corroding instead of allowing the tank lining to corrode. SRBs are nourished by electrons released from the anode as it corrodes. The anode itself can also create an odor by converting naturally occurring sulfate in your water into hydrogen sulfide. These problems can be more prevalent in new water heaters.

Removing the anode may eliminate the problem, but it can also shorten the water heater lifespan significantly and may void the warranty. Replacing the magnesium rod with one made of zinc or aluminum may retain some corrosion protection while reducing odors. Consult with a professional plumber before attempting to modify your water heater.

SRBs in the tank can be killed by setting the water heater on its highest setting for at least 8 hours. *This should only be done if the water tank has a pressure relief valve, and everyone in the house is warned to prevent burns.* After 8 hours or more, the tank should be drained and the temperature setting returned to normal.

## **Other Odors**

Other odors may be caused by home water treatment systems. If applicable, check the filters or resin beds to see if they need to be serviced or changed.

## **Reducing Taste and Odor**

Taste and odor problems can be reduced at home by adding a drop or two of lemon to a glass or pitcher of water and/or chilling the water before drinking. If aesthetics continue to be a problem, you should consider a home filter system. Consult with a water treatment professional for information on home filter systems.

## **Regulatory Standards**

Secondary Drinking Water Standards exist for color and odor, but not for taste. Secondary Standards are only guidelines for good quality water. If a secondary standard is exceeded, it is expected that there will be complaints, but there is not an enforceable health risk involved.

The lab test for odor measures "Threshold Odor Number" (TON). The TON is the dilution ratio at which taste or odor is just detectable. The secondary standard for odor is a TON of less than 3.

Secondary standard for color is less than 15 CUs.