

FACT SHEET: HYDROGEN SULFIDE IN DRINKING WATER (HOT WATER)



Water containing hydrogen sulfide usually does not pose a health risk, but does give water a nuisance "rotten egg" smell and taste. Water supplies with as little as 1 ppm (part per million) hydrogen sulfide are corrosive and may tarnish copper and silverware. Hydrogen sulfide also can cause yellow or black stains on kitchen and bathroom fixtures.

Sources of Hydrogen Sulfide in drinking water

Hydrogen sulfide gas is formed by sulfur bacteria that may occur naturally in water. These bacteria use the sulfur in decaying plants, rocks, or soil as their food or energy source and as a by-product produce hydrogen sulfide. The sulfur bacteria do not cause disease, but their presence in water can cause an offensive "rotten egg" or "sulfur water" odor and taste. In some cases, the odor may be noticeable only when the water is initially turned on or when the hot water is run.

Odors from Hot Water Only

Water heaters can also be sources of foul odors stemming from hydrogen sulfide. A magnesium rod is often placed in the tank by the manufacturer to prevent water heater corrosion. Sulfur that is dissolved in water can react with the magnesium rod forming hydrogen sulfide. The magnesium rod can be replaced with an aluminum one or removed completely. Removal however, may void the manufacturer's warranty.

Sometimes hot water will have a "sour" smell, similar to the smell of an old damp rag. This happens when, in an effort to save energy or to avoid blending hot and cold water, the thermostat of the water heater is lowered. Odor-causing bacteria live and thrive in warm water and can infest the water heater. This is corrected by returning the thermostat to its recommended temperature, because the odor-causing bacteria are killed at the higher water temperature (at or above 140 degrees).

Caution: Be sure the water heater has an operable pressure relief valve before increasing the water temperature. If you want to keep your water heater temperature at a lower setting because scalding from hot water is a concern, each time the odor returns, increase the water temperature for a few hours to kill the odor-causing bacteria. Then flush the very hot water out of the tank and lower the temperature back to the desired level.