

Controlling Odors in Hot Water Heaters

CAUTION: Flushing your water heater will produce extremely hot water. Please use caution to prevent scalding.

Sometimes, an offensive odor can develop in the water stored in your hot water heater. You may describe it as “rotten eggs” and usually you will only notice it in your hot water, not the cold.

This is usually the result of hydrogen sulphide gas that has been dissolved in the water. When heated in your hot water heater, the water can no longer hold the gas in suspension and it will be released through your tap.

Hydrogen sulphide gas is a by-product of harmless mineral reducing bacteria. This bacteria cannot grow in the presence of atmospheric oxygen, which is why it is not noticed in cold water. Mineral reducing bacteria is more common in softened water where sodium replaces calcium and magnesium. When this organic material is heated, the rate of decomposition is increased and odors can be produced as a result.

Your water heater also contains a magnesium anode. This anode is installed to neutralize the corrosion of the water and serves a very important role in protecting the glass lining of your hot water heater. In some cases, the water will react with the magnesium anode to cause the “rotten-egg” smell. If this is the case, this anode can be easily replaced and most manufacturers offer replacement options. However, simply removing the anode will often void your hot water heater warranty, so contact your manufacturer prior to taking this step.

Chlorination of your water heater is the best place to start when correcting a hydrogen sulphide odor problem.

How to Chlorinate Your Hot Water Heater:

You will need a common household bleach which clearly states on the package “Active Ingredient: Sodium Hypochlorite.” The ratios are:

1 Gallon of Bleach

to

30 Gallons of Water Heater Tank Capacity

1. Turn off gas or electric supply to the hot water heater. If electric, you may also want to switch the circuit breaker for the hot water heater to OFF.
2. Shut off the cold water supply valve to the heater.
3. Open a nearby hot water faucet and the temperature and pressure valve on the hot water heater to relieve tank pressure.
4. Attach a length of garden hose to the drain valve and route water into a drain on the floor or outside.
5. Drain enough water to allow the bleach to be added and close the drain valve.
6. Remove the anode rod (other options are to remove the relief valve or disconnect the hot water outlet pipe from the heater)
7. Using a funnel placed in the anode rod opening (or relief valve or outlet pipe), pour

- in the pre-measured amount of bleach.
8. Inspect the anode rod and if there are signs of deterioration, replace with new rod.
 9. Return the anode rod (relief valve or outlet pipe) to its position.
 10. Close the temperature and pressure valve.
 11. Open the cold water inlet valve and fill the tank with water.
 12. When you have a steady stream of water from the open faucet in the house, turn the faucet off.
 13. Close the cold water inlet valve when the tank is full.
 14. Draw the chlorine solution into the hot water pipes in the house by opening each hot water faucet and running the water until the bleach mixture is smelled. Don't forget the dishwasher and clothes washing machine) This will allow the chlorinated water mixture to clean all the hot-water lines.
 15. Leave the bleach mixture in the hot water system for at least one hour.
 16. Drain the remaining mixture from the tank through the drain valve.
 17. Close the drain valve and open the cold water inlet valve.
 18. Completely fill the tank with fresh water and leave the water in the tank for 15 minutes.
 19. Close the cold water inlet valve and open the temperature and pressure valve.
 20. Flush the chlorine mixture from the tank and hot water pipes by opening all the hot water faucets in the house and running water until no bleach smell is detected. Also run dishwasher and clothes washer empty for one cycle.
 21. Drain remaining water from the tank through the drain valve.
 22. Close drain valve and remove hose.
 23. Close the temperature and pressure valve.
 24. Open a nearby hot water faucet.
 25. Open the cold water inlet valve and allow the tank to fill with water.
 26. When you have a steady stream of water from the open faucet in the house, turn the faucet off.
 27. Check for leaks at the fittings you used and tighten/repair if needed.
 28. Ensure tank is full of water before starting up hot water heater.
 29. Follow the recommended star-up procedure posted on your hot water heater or in the service manual provided with you heater.

If you have a vacation home, you may want to plan on disinfecting/chlorinating your tank when you return after a significant absence.

Although the above procedure is an effective way to control odor in your hot water, it is not permanent. A long-term solution is to install a continuous chlorine feeder on your tank.

If periodic chlorination does not resolve the odor problem, replacement of the magnesium anode may need to be considered. Contact your hot water heater manufacturer for more information.