

## HOW TO ELIMINATE BAD ODORS COMING FROM THE WATER HEATER?

Some consumers have submitted recurring comments about unpleasant odors similar to rotten eggs<sup>1</sup> that seemed to come especially from the hot water. Concerned by enhancing everyday life, Giant examined this issue and concluded that this was due to a minor formation of Hydrogen Sulfide<sup>2</sup> (H<sub>2</sub>S). This gas, known for its nauseating rotten egg odor, comes from a reaction between Hydrogen and Sulfur.

Firstly, hydrogen is created in small quantities in the water heater by the disintegrating anode. The anode of a water heater is necessary to protect it. By electrolysis, the anode rod slowly consumes, thus protecting the glass-lined tank from corrosion.

On the other hand, Sulfur is more or less present in water, but particularly in underground wells. There are also traces of sulfur in the supply of potable water of some municipalities.

Finally, in some cases, it may arise that a small bacterium called “Anaerobic Bacteria<sup>3</sup>”, which occurs naturally in the human body, particularly in the oral flora<sup>4</sup>, can be found in the potable water, thus accelerating the bonding process between Hydrogen and Sulfur. This micro-organism feeds on Sulfur and creates this gas, at a low content, causing this unwanted smell.

In order to eliminate these odors, some alternatives are available for the consumer:

The magnesium anode, supplied with all water heaters, can be replaced with an aluminum anode that has been developed by Alcan especially for the water heater market for these kinds of situations. In these cases, the aluminum anode will diffuse less Hydrogen and limit the undesired olfactory effect.

Giant has also patented zinc pellets (part # 18G0015) which can be added in the water heater at the same time as the magnesium anode is replaced with an aluminum one. Combined with an aluminum anode, these zinc pellets act directly on the anaerobic bacteria, limiting the reaction between Hydrogen and Sulfur. By using both of these methods, and by performing the bleach cleaning process, we work on sources causing this reaction.



For best results, please refer to the attached cleaning procedure.

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<sup>1</sup> Department of Environment and local Government, New-Brunswick (November 8<sup>th</sup>, 2016). *Fact Sheet: Why does my well water smell like rotten eggs?* Taken from: <http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/Water-Eau/RottenEggs.pdf>

<sup>2</sup> Department of Environment and local Government, Nova-Scotia (2008). *The drop on water: Hydrogen Sulfide*. Taken from: [https://www.novascotia.ca/nse/water/docs/droponwaterFAQ\\_HydrogenSulphide.pdf](https://www.novascotia.ca/nse/water/docs/droponwaterFAQ_HydrogenSulphide.pdf)

<sup>3</sup> L. Dubreuil (2004). *Anaerobic infections and their treatment: Microbiological argument*. Taken from: <http://www.sem infect.be/Dubreuil-19-01-04/Les-infections-a-anerobies-Dubreuil.pdf>

<sup>4</sup> Sédallian A. (1990). *Isolation and identification of strict anaerobic bacteria: Principal germs isolated from pathological products*. *Medicine and Infectious Diseases*, Vol 20, Supplement 3, p83-88. Taken from: <http://bacterioweb.univ-fcomte.fr/bibliotheque/remic/18-Anaro.pdf>; <http://www.sciencedirect.com/science/article/pii/S0399077X05800654#>

## How to do it?

Here are a few simple steps to follow:

- 1) Turn OFF the power to the water heater by shutting the circuit breaker corresponding to the water heater circuit, or remove the fuses;
- 2) Stop the flow of cold water to the water heater by closing the manual shut-off valve in the cold water supply line;
- 3) Open one of the hot water taps inside the house in order to let air into the system;
- 4) To drain the water out of the water heater, connect a garden hose to the water heater drain valve located at the bottom of the water heater and direct the flow of the water outside of the house or to a nearby free-flowing drain. Open the drain valve;
- 5) To make sure that all the sediments have been removed from the water heater, open the cold water manual shut-off valve and run cold water into the water heater for about 10 minutes;
- 6) When clear water runs out of the drain valve, close the manual shut-off valve on the cold supply line as well as the drain valve;
- 7) Disconnect the piping connections to the water heater and remove the top cover, if necessary;
- 8) Remove the anode located on the top of the water heater by using a hex head wrench or a 1 1/16 inch ratchet head tool;
- 9) Pour 4 to 5 liters of Javex (or equivalent) bleach through the opening where the anode is usually installed;
- 10) Fill the water heater with cold water. Be careful not to overfill it, otherwise the water will spill out of the 3/4 inch hole where the anode fits. Turn off the cold-water supply valve. Do not turn on the power supply to your water heater until the cleaning process is complete;
- 11) Leave the bleach in the water heater for a period of 24 hours. Once this period is completed, drain the water heater by following the instructions in step 4);
- 12) Once the water heater is completely empty, close the drain valve and refill the water heater while making sure that water does not spill from the anode hole;
- 13) Insert two (2) zinc pellets through the opening where the anode goes and install a new aluminum hex head anode of the required length according to the size of the anode or the capacity of your water heater;
- 14) Re-open the cold water supply valve and open a few hot water faucets in the house. Let the water run from the faucets for 20 to 30 minutes or until the bleach smell disappears;
- 15) Once the bleach smell is gone, close all of the hot water faucets in the house;
- 16) Before reconnecting the power to the water heater, make sure that the tank is completely filled with water.

**NB: The above procedure does not guarantee that the odors will immediately disappear. In severe circumstances, this procedure may have to be repeated a few times before the problem is solved. A specialized filtration system may also be required in some extreme cases.**

**For more information, do not hesitate to call our Customer Service Department at 1 (800) 363-9354 and select option 1.**

*In accordance with our company policy of on-going product improvement, Giant Factories Inc. reserves the right to make changes without prior notice.*