



Odour Control in Hot Water Heaters

An offensive rotten egg odour can sometimes develop in hot water systems. This odour is caused by hydrogen-sulphide gas, which can be dissolved in the water or caused by bacterial action. It may be unnoticeable in the cold water, when the bacterial metabolism is at a low level. But when heated, the bacteria flourish on the tank walls and soon make their presences known with the offensive odour.

In most cases, hydrogen-sulphide gas problems in hot water tanks can be easily controlled or eliminated by either disinfection or minor changes to the tank. Yet many people have spent thousands of dollars on treatment equipment to correct a \$10 problem. Two possible solutions are chlorine disinfection and magnesium removal, both are briefly described below:

1. Chlorine Disinfection

A prolonged exposure using chlorine has been successful in treating hot water heaters to remove the odour. This treatment can be done with a bleaching compound that clearly states on the package or bottle "Active Ingredients – Sodium Hyperchlorite" or "Active Ingredient – Chlorine"; an example would be Javex.

The addition of 1 pint of household bleach into a 40 imp gal (180L) water heater, or 5 fl oz (140mL) per 10 imp gal (45L) of storage capacity left to stand overnight is sufficient to kill the bacteria. This is not a permanent solution, as bacterial action may occur again and further treatment will be necessary.

The following method of introducing the chlorine or sodium hyperchlorite solution into the water is simple and effective. Also, this procedure does not require disconnection of the hot water line:

1. Make sure water in the water heater is at least 66°C.
2. Turn off the water heater elements.
3. Shut off the cold water supply to the water heater.
4. Attach a short length of drain hose to the nearest hot water tap. If the tap is the type that is not threaded on the end, a special fit-all clamp or adapter may have to be attached.
5. Mix 1 pint (1/2 L) of bleach with 2 gal (9L) of cold water in a pail or other container.
6. Insert the drain hose from the tap into the pail making sure it reaches the bottom.
7. Open the hot water tap that has the short length of drain hose attached.
8. Open the drain valve at the bottom of the water heater. This will drain some of the water from the water heater, creating a vacuum and causing the solution to be siphoned up the pail and into the water heater.
9. When all of the solution has been siphoned into the water heater, close the water heater drain valve.
10. Allow the solution to remain in the water heater for 8 hours.
11. Drain and flush the water heater with clean water.
12. Turn water heater elements on and make sure all shut-off valves to the water heater are open.

The treatment may be repeated if the first application does not control the odour.

NOTE: All occupants of the house should be cautioned not to use any hot water taps while the treatment is in progress.

2. Magnesium Anode Removal

If the above procedure does not eliminate the hydrogen-sulphide odour, the problem may be caused by the magnesium anode in the hot water heater. The anode is installed in the water heater so that the corrosive water will attack it instead of the lining in the hot water heater. It may react directly with sulphate in the water to produce hydrogen sulphide. The anode is usually located immediately below the hot water line, or offset to the side.

If replacement of the rod does not eliminate the odour, then the rod should be permanently removed. This will void the warranty on the water heater, but it should improve the water quality. The rod should only be removed after other remedies have failed.