Preventing scale

Kettles

Using hard water in kettles has two effects:

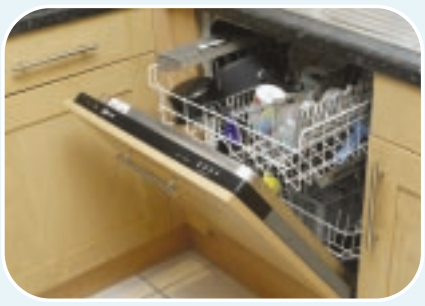
- it produces scale or fur
- in plastic jug kettles it produces a film on top of the water because the scale cannot stick to the inside of the kettle.

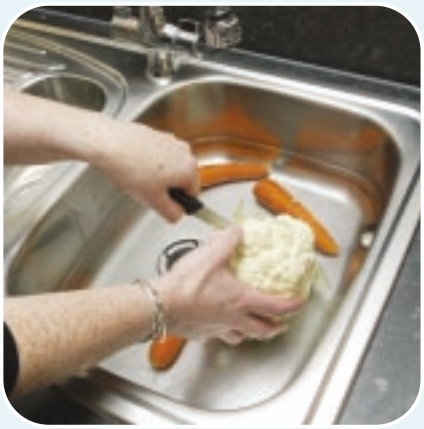
Although scale does not increase the time it takes to boil water or the amount of fuel you need, we recommend you remove it regularly. You can do this by half filling the kettle with water, adding two tablespoons of vinegar to each pint and leaving it for four hours. Then empty the kettle and remove the loosened scale. Rinse and repeat as necessary.

Alternatively, you can buy a scale remover but be sure to follow the instructions exactly. Most scale removers are poisonous and strongly acidic so take care when you use and rinse the kettle properly afterwards.

Water Softeners

Water softeners replace the scale-producing minerals (calcium and magnesium) with sodium, which does not produce scale. The process depends on a resin which becomes ineffective after a certain amount of water has been softened. Therefore, you have to renew it with common salt (sodium chloride).





Softened water will not react with soap to produce scum but it can cause rust on metal pipework.

It is not a good idea to use softened water for cooking. It is not as pure as the mains water supply and it often has levels of sodium which can harm your health. Never use softened water to prepare baby foods. If you have a water softener you must also have a tap at the kitchen sink which provides unsoftened water for drinking.

Softeners are often fitted for industrial reasons but they are not often necessary in the home as long as you have a modern plumbing system and, especially, where indirect heating systems are fitted. As well as the cost of the water softener, there are also charges for fitting and running the device.

Many dishwashers have a built-in water softener to provide rinse water. This will be free from hardness-scaling salts, which otherwise could be left on drained washing-up. These machines also need regular topping up with salt.

Heating systems

There are two basic heating systems – direct and indirect.

- Direct systems are the traditional method of water heating. The water travels from a roof tank into the boiler where it is heated. The water then rises to the cylinder in the airing cupboard and stays there until you use it. With this system, the way to prevent scale is to avoid overheating. We recommend a maximum temperature of 60°C (140°F).

- Indirect systems do not usually produce scale because of the way they are designed. With an indirect system there are two circuits – the primary and the secondary.

The primary circuit contains the boiler, the radiators, a small expansion tank and a heating coil called a calorifier. The heating coil is in the hot water cylinder, which is usually found in the airing cupboard. This is the heat-carrying circuit.

Because the same water goes round the system and is not taken out only a tiny amount of scale is produced.

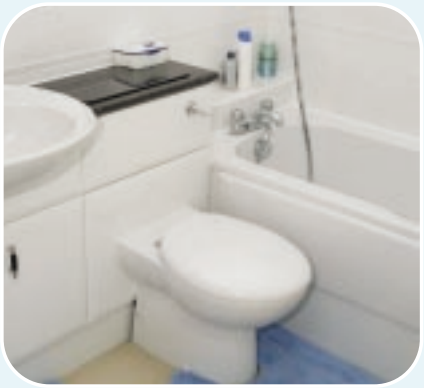
In the secondary circuit, the water is also heated in the hot water cylinder by the heating coil. This prevents overheating and so very little scale is produced.

You can reduce any scaling in heating systems by using a chemical scale inhibitor. There are various types of chemical scale inhibitors and some can be very unpleasant if they get into the drinking water system. We suggest you take advice from a qualified plumber.

Immersion heaters

Scale often builds up on the heating element. Too much scale can stop the water circulating properly. You must, therefore, make sure that the thermostat is working and correctly adjusted. For most homes 60°C (140°F) is adequate - higher temperatures are unnecessary and expensive.

If you use your immersion heater a great deal you can make it last longer by using elements with special metal sheaths. In some cases it may be a good idea to use a chemical scale inhibitor. Again, we suggest you take advice from a qualified plumber.



In the bathroom

In harder water areas natural soaps tend to produce a scum which sticks to sinks, baths and washing. However, synthetic detergents are less affected by hardness and do not produce a scum.

Baths salts may produce a cloudy appearance in hard water but bubble bath will work normally.

It is important to remove bath scum immediately because it tends to harden when it dries. It is best to use a liquid cleaner because abrasive materials will scratch the surface and make scum more difficult to remove in the future.

Scale in toilet pans

You can remove chalky scale from toilet pans by using limescale remover, which you can buy from hardware stores and supermarkets.

If this type of scaling carries on then regularly clean the toilet pan with an acidic-type sanitiser.

Remember – do not mix cleansers and follow the instructions very carefully.

Magnetic and electrical scale inhibitors

There are now many devices on the market which claim to stop scale and fur forming. Many have approval from the Water Regulations Advisory Scheme (Water Research Council) as devices that will be safe to use and will not contaminate water supplies. However, this approval does not guarantee that the device will work.

Your own plumbing design and other local factors may influence how well the equipment works. Before you fit it, get a written guarantee from the manufacturer saying that the device will produce the proper effect for several years, with a money-back clause.