



guardians of drinking water quality
DRINKING WATER INSPECTORATE

Water filters and other home treatment units

What are they?

A range of water filters are advertised and sold for use within the home. These include jug filters which are stand alone and not connected to the water supply as well as filters and other devices plumbed in directly to the water supply. Manufacturers' claims for these products sometimes cause consumers to become concerned about the quality of their tap water. It is not uncommon for marketing literature and promotional websites to suggest that purchase of a water treatment unit will remove contaminants from tap water.

Common claims include:

- removal of pesticides (activated carbon filters)
- removal of minerals (reverse osmosis)
- removal of taste or odour (activated carbon filters)
- removal of particulate matter or colour (1 micron rated filters)
- removal of hardness (water softeners and reverse osmosis)
- removal of nitrates (ion exchange)

Are they necessary?

By law your local water company has to supply wholesome water that is suitable for all domestic purposes, including drinking, cooking and washing. All public water supplies are regularly tested in England and Wales and the results which are published and available to every consumer on request show that tap water is safe to drink and there is no need to install additional treatment within the home as a health protection measure.

Pesticides

Although some raw water sources in England and Wales are at risk of contamination with traces of common pesticides, in these situations, water companies treat the water to remove pesticides to below the strict European standards in the drinking water regulations. Home water treatment is not required.



Colour or particulate matter

Some water supplies may experience localised problems resulting in particulate matter or colour in tap water (see discolouration leaflet here). If the problem is due to a fault with pipes and fittings for which the building owner is responsible then use of a suitable filter may improve the water quality as a temporary measure. Before making a purchase you should contact your water company for advice. It maybe that maintenance on the water mains is planned to remedy a problem in the local supply network. If the fault relates to your own pipes and fittings it is always best to employ a plumber to identify and remedy the root cause of the problem.

Taste and Activated Carbon Filters

Some consumers dislike the taste of tap water. This is especially so when living somewhere different from where you grew up as a child. Removing objectionable tastes and odours is the most common reason for purchasing a water filter. When choosing a filter for this purpose ensure it contains activated carbon and change the filter cartridge regularly or it will cease to be effective. If you see small black particles in your water after treatment through an activated carbon filter these particles will not have come from your tap water, instead they will be particles of activated carbon from the filter itself.

Before decided to purchase a carbon filter be aware that a more cost-effective solution is to store a covered jug of drinking water in the refrigerator. Studies have shown that most consumers are unable to distinguish chilled tap water from bottled mineral water.

Reverse osmosis systems

Reverse osmosis (RO) filtration systems remove most dissolved solids and soften the water producing a waste stream equivalent to 20-30% of the incoming flow. There is also a substantial reduction in pressure through the RO unit. Treatment by RO should be considered only for specialist domestic purposes like photographic processing or hydroponic culture. You should be aware that RO treatment changes the natural properties of tap water that give rise to its normal pleasant taste, therefore, RO water is not generally considered suitable for drinking and cooking.

When RO treated water is to used for drinking purposes it is recommended by the World Health Organisation that minerals should be added back (see [WHO/SDE/WSH/07/ Desalination for Safe Water Supply : Guidance for the Health and Environmental Aspects Applicable to Desalination](#)). RO treatment is expensive and generally not a feasible option for domestic supply purposes for most homeowners.

Consumers should be aware that installation of RO treatment on a metered water supply will increase water bills by up to one third because of the waste stream. Also by law consumers must give notice to their water company of their intention to install a RO system.



Ion exchange softening

The most common home water treatment system is a water softener. Softeners involve an ion exchange process that replaces calcium and magnesium (hardness) with sodium. The benefits include reduced formation of scale in hot water systems and improved lather production and efficiency of appliances for clothes and dish washing. However, when installing a softener, it is advised that consumers retain an unsoftened water supply to the kitchen tap for drinking and cooking purposes. This is because the Department of Health has advised that due to its higher sodium content softened water consumption may increase the risk of cardiovascular disease.

If you are buying a water treatment unit

Before purchasing a water treatment unit, contact your water company to obtain a free copy of the drinking water quality report setting out the results of tests on your home water supply. This report will show the legal standards and the maximum and minimum levels present in your tap water. This should reassure you that treatment is not required to remove contaminants such as nitrates and pesticides to make your tap water safe to drink. If you still wish to purchase a water treatment unit to improve the taste and hardness properties of your home water supply then ensure that you buy only from a reputable supplier. Do not purchase any device from a door to door salesman, particularly those offering to test your water to demonstrate it is contaminated. Scams of this type are not uncommon and should always be reported immediately to your local trading standards officer. To install a device always use a qualified plumber and check in advance with your water company that the device meets the water fittings regulations. Always follow the manufacturer's advice about cleaning and maintenance and the frequency of changing cartridges; failure to do so will cause a build-up of deposits and create a breeding ground for bacteria. For some units like water softeners it can be very important to backwash them regularly and replenish salt. If your property is unoccupied for a period then the devices will need maintenance on your return. It is sensible to consider a taking out a regular service agreement when purchasing a water treatment unit.

For further information and advice on water treatment units contact [British Water](#).

Last updated: January 2010