

## Home Water Treatment Units: Things to Consider Before Purchasing

Most people do not need to do anything to the water in their home to make it safe to drink. However, a home water treatment unit may improve the taste, odor or quality of drinking water or provide a factor of safety for sensitive populations such as infants, pregnant mothers or immuno-suppressed individuals. When deciding whether to purchase a home water treatment unit, there are several factors to be considered.

First, it is important to determine which contaminants (if any) are present in your drinking water, at what levels they are found and whether there are health concerns associated with any of them. This can help you better determine whether a home treatment unit is necessary and, if so, whether it is needed to improve the taste, odor or color of the water or to provide additional health protection. No home treatment unit addresses all contaminants, so determining which contaminants you are concerned about will allow you to select the best home treatment unit for your individual concerns. Public water system customers can obtain information about their drinking water by contacting their public water system or Ohio EPA's Division of Drinking and Ground Waters. Information is also available on U.S. EPA's website at: [www.epa.gov/safewater/dwinfo/index.html](http://www.epa.gov/safewater/dwinfo/index.html). Community water system customers can also find a report on the drinking water provided by their public water system in the Consumer Confidence Report their system sends to them each year (usually in May or June). Those who get their drinking water from private wells are responsible for their own testing and should contact their local health department for information on how to do so. Information about how to contact local health departments in Ohio can be found at: [www.odh.ohio.gov/Directory/LHD/LHD\\_LIST.HTM](http://www.odh.ohio.gov/Directory/LHD/LHD_LIST.HTM).

Lead and copper contamination presents special considerations because lead and copper from your household plumbing can leach into your drinking water. Because this occurs within your home or business, testing done by your water system at their facility may not be accurate about the amounts of lead and copper in your drinking water. Likewise, testing done on water taken directly from a private well will not account for the lead and copper that leaches from pipes and faucets inside a building served by that well. Information about home testing for lead and copper can be obtained from your local water supplier or from U.S. EPA: [www.epa.gov/safewater/lead/index.html](http://www.epa.gov/safewater/lead/index.html).

Home water treatment units employ various contaminant removal technologies, including filtration, ion exchange, reverse osmosis, distillation or some combination thereof. All are generally available from retailers or by mail order. The type or combination of contaminant removal technologies appropriate for your home will depend on the unit's purpose, particularly the types of contaminants you want to address. Note that these devices alone cannot provide adequate protection from harmful bacteria and viruses, so they should not be used if the water is not microbiologically safe. Additionally, water softeners may cause more lead and copper to be leached from household plumbing into your drinking water. A basic overview of the uses and limitations of the most common contaminant removal technologies is found in the table below.

## Home Treatment Units: Types of Contaminant Removal Technologies

Technology	What it does to water	Limitations
Activated Carbon Filter  (includes mixed media that remove heavy metals)	Adsorbs organic contaminants that cause taste and odor problems.  Some units also remove chlorine, chlorination byproducts and/or cleaning solvents and pesticides.	Does not remove nitrate, bacteria or dissolved minerals.  Carbon canisters must be replaced periodically. Failure to do so enhances bacterial growth which can affect water quality.
Ion Exchange Unit	Removes minerals, particularly calcium and magnesium that make water "hard."  Some designs also remove radium, barium, fluoride and/or arsenate.	If water has oxidized iron or iron bacteria, the ion-exchange resin will become coated or clogged and lose its softening ability.  The unit must be regenerated periodically with salt.
Reverse Osmosis Unit	Removes foul tastes, smells, colors, nitrates, sodium and other dissolved inorganics and organic compounds.  May also reduce the level of some pesticides, dioxins, chloroform and petrochemicals.	Does not remove all inorganic and organic contaminants.  Often expensive to purchase and difficult to install.  Units can waste as much as three gallons of water for every gallon treated.
Distillation Unit	Removes nitrates, bacteria, sodium, hardness, dissolved solids, most organic compounds, heavy metals and radionuclides.	Does not remove some volatile organic contaminants and pesticides.  Bacteria may recolonize on the cooling coils during inactive periods.

When choosing a home treatment unit it is important to consider the cost of installation and maintenance as well as the purchase price. All treatment devices require regular maintenance. This could involve changing clogged filters, cleaning scale buildup, or disinfecting the unit. Failure to properly maintain a unit will reduce its effectiveness and, in some cases, may make the water quality worse. You may also want to find out whether the unit has an alarm or indicator light to remind you to clean or replace parts.

It is also strongly recommended that you choose a unit that is certified by one of the following organizations to ensure the effectiveness and safety of the unit: NSF International, Underwriters Laboratory or the Water Quality Association. Note that certification by one of these organizations also verifies the manufacturer's claims about the unit's ability to reduce certain contaminants. Contaminant reduction claims are listed under a unit's certification. NSF International is also a reliable source of information about treatment units and processes. NSF does not recommend particular brands, but has literature for consumers and can offer advice on the type of treatment unit you need. Further information can be found at: [www.nsf.org/consumer/drinking\\_water/](http://www.nsf.org/consumer/drinking_water/)

When choosing your home water treatment unit there are two basic options in terms of

where the unit can be installed: point-of-use or point-of-entry. Point-of-use treatment devices are designed to treat small amounts of drinking water at a particular tap. They can sit on the counter, be attached to the faucet, or be installed under the sink. Alternatively, point-of-entry devices are installed where the water line enters the house and treat all water entering the house. In general, point-of-use treatment devices are appropriate where ingestion of drinking water is the only concern, whereas point-of-entry devices are used when hand-washing and bathing must also be considered.

Regardless of the type of treatment technology you choose or where you install it in your home, make sure that it is properly certified, installed and maintained. Failure to do so may make your water worse rather than better!