

Considerations in Purchasing a POU Device

Effectiveness, efficiency, and cost are considerations in buying a home water treatment unit. Cost considerations should include not just the purchase price but also the cost of maintenance and operation. Another important consideration is the unit's efficiency with regard to how much water it wastes in processing a certain quantity of treated water.

No single treatment process can remove all substances in water. Select a treatment unit designed to handle the substance of concern. If there are several substances you want removed from your water, you may need to combine several treatment processes into one system.

A reliable source of information on treatment units and processes is NSF International, which develops and adopts voluntary standards and testing programs for a wide variety of water treatment units. NSF does not recommend particular brands of home treatment units, but it has literature for consumers and can offer advice on the type of treatment unit needed.

Water *treatment* devices—designed to reduce chemicals from the water—should not be confused with water *purification* devices, which are designed to remove bacteria. Treatment devices will not remove bacteria from the water and may actually increase bacterial content. The Minnesota Department of Health recommends that POU devices be used only on water that is free of harmful bacteria. If your well water contains harmful chemicals or bacteria, your local or state health departments can advise you of steps to take.

Any type of treatment device requires 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.

Continued maintenance is necessary for the life of the device along with regular testing of the water to make sure the device is working properly.

For More Information:

If you have questions or would like more information, contact:

Minnesota Department of Health

Drinking Water Protection Section
625 North Robert Street
P. O. Box 64975
St. Paul, Minnesota 55164-0975
651-201-4700
<http://www.health.state.mn.us/divs/eh/water>

For more information on home water treatment units, contact:

The Water Quality Association

Consumer Affairs Department
P. O. Box 606
Lisle, Illinois 60532
312-369-1600
<http://www.wqa.org/>

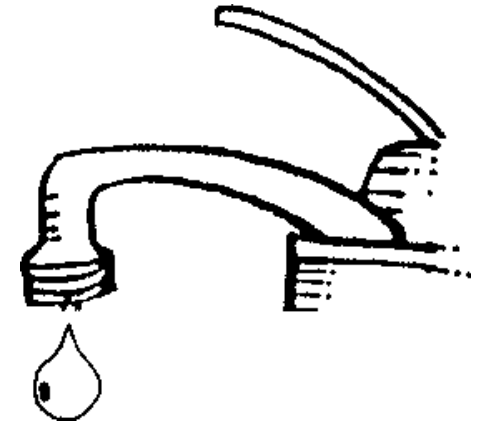
Minnesota Water Quality Association

P. O. Box 48452
Minneapolis, Minnesota 55448
763-754-2123
E-mail: info@mwqa.com
<http://www.mwqa.com>

NSF International

3475 Plymouth Road, P. O. Box 1468
Ann Arbor, Michigan 48106
313-769-8010
<http://www.nsf.org/consumer/dwtuconsumer.html>

Home Water Treatment Units



Point-of-Use Devices



Minnesota Department of Health
Environmental Health Division
Section of Drinking Water Protection



Point-of-Use Water Treatment Devices

Point-of-use (POU) water treatment devices are designed to treat small amounts of drinking water for use in the home. These devices can sit on the counter, attach to the faucet, or be installed under the sink. They differ from point-of-entry (POE) devices, which are installed on the water line as it enters the home and treat all the water in the building.

It is important to distinguish between home treatment for health protection and home treatment for aesthetic reasons. Water treatment units are most appropriately used for the removal of substances that affect the physical or aesthetic quality of water—taste, color, and odor. Before installing a POU device for health-related substances, it is important to evaluate the alternatives. Removing a contamination source or replacing the unsafe water supply with a safe one is more appropriate than treating the water. The use of water treatment units for reduction of health-related substances should be done only under emergency conditions or in situations where other alternatives do not exist. In these cases, the treatment units should be designed to handle the contaminant of concern, be tested periodically to ensure effective performance, and have some duplication or redundancy to provide added protection if one unit fails.

If you receive your water from a public water supply, it should be safe to drink. The United States Environmental Protection Agency sets standards for public water supplies that limit the levels of contaminants. The water is tested regularly to ensure that these standards are met. You may find out the results of tests on a public water supply by contacting your water utility or the Minnesota Department of Health.

Water from a private well should also be free of harmful contaminants if the well is properly constructed and if it is drawing from a safe aquifer. However, the only way to be certain about the quality of the water from a private well is to have it tested. To find out where you can get your water tested, contact your community health service, local health department, or the Minnesota Department of Health.

Types of Point-of-Use Devices

Reverse-Osmosis

Reverse-osmosis devices, usually installed underneath the sink, use a membrane with pores tiny enough to screen out inorganic chemicals such as chloride and sulfate. They can be expensive to purchase and may be difficult to install. In addition, they can waste as much as three gallons of water for every gallon that is treated.



Activated Carbon Filters

Carbon material—such as coal, charcoal, and wood—is used in these devices to reduce organic chemicals, such as those that can cause offensive tastes and odors. They are less expensive to purchase than many other types of treatment units and don't waste water. Some units can enhance bacterial growth, so frequent replacement of the filter cartridge, which adds to the cost of the operation, is necessary.

Distillers

Distillers are effective at reducing the levels of most chemicals except organic chemicals. A distiller boils water and then condenses the steam, removing contaminants in the process. A distiller is less expensive to purchase than a reverse-osmosis system but more expensive to operate since it uses more energy.



Filters

The simplest type of point-of-use devices, filters trap particles in a porous material while allowing water to pass through. They can reduce particles like sand and rust but cannot remove anything dissolved in the water. Filter devices are relatively inexpensive to purchase but do require regular maintenance, which adds to the cost.

Ion Exchange

Ion exchange devices—such as iron removal, softening, and chlorination systems—are normally installed at the point that the water enters the home; however, these type of water treatment devices may also be installed at the point of use.

A common treatment system, ion exchange can take two forms: cation exchange—which replaces positively charged ions, such as calcium, iron, and magnesium, with sodium ions—and is used primarily for water softening; and anion exchange, which reduces negatively charged ions such as sulfate and chloride.

Caution: Extreme care must be exercised when using a treatment unit as a remedy for a health-related problem since there is no foolproof way of knowing when the treatment system may fail. Connection to a safe water supply, well repair or replacement, or use of bottled water is recommended for obtaining drinking water when the water supply is contaminated.