

Considerations in Purchasing a POU Device

Purchase price is not the only consideration that should be made when buying a home water treatment unit. Cost of operation and effectiveness should be also taken into account in addition to the unit's efficiency with regard to how much water it wastes in processing a certain quantity of treated water.

Two reliable sources of information on treatment units are NSF International and the Water Quality Association (WQA). NSF International develops and adopts voluntary, consensus standards and testing programs for a wide variety of water treatment units. WQA represents firms and individuals engaged in the design, manufacture, production, distribution, and sale of equipment, products, supplies, and services for providing quality water.

Neither NSF nor WQA recommends particular brands of home treatment units, but both have literature for consumers and can offer advice on the type of treatment unit needed.

Note: Water treatment devices—which are designed to reduce chemical contaminants, including lead, 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.

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

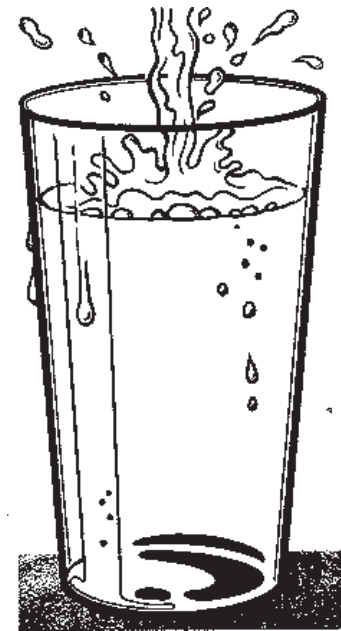
<http://www.health.state.mn.us/divs/eh/water>
For more information on home water treatment units, contact:

The Water Quality Association
Consumer Affairs Department
4151 Naperville Rd.
Lisle, Illinois 60532-3696
630-505-0160
<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
789 N. Dixboro Rd., P. O. Box 130140
Ann Arbor, Michigan 48113-0140
800-673-6275
<http://www.nsf.org/consumer/filters>

Point-of-Use Water Treatment Units for Lead Reduction



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

141-0717
August 2010



Point-of-Use Water Treatment Units

Point-of-use (POU) water treatment units 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 devices, which are installed on the water line as it enters the home and treats all the water in the building.

Many home water treatment units have beneficial uses and in some instances are necessary. However, it is important to distinguish between home treatment for health protection and home treatment for aesthetic reasons. Water treatment units

are used most often for the reduction of substances that affect the physical or aesthetic quality of water—that is, its taste, color, and odor. 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 limits the levels of contaminants. The water is tested regularly to ensure that these standards are met. 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 clean aquifer.

Lead In Water

But even if the source water is safe, a home may still have a problem with lead. Lead differs from other contaminants in that it rarely occurs naturally in the raw water supply. Lead is more likely to become a problem after the water has left the treatment plant.

Lead enters water primarily as a result of the corrosion of materials containing lead in the water distribution system and household plumbing. These materials can include lead pipes, lead solder, and brass faucets.

Exposure to lead over a long period of time can cause adverse health effects, particularly in young children and pregnant women. Some simple methods—such as flushing the faucets before using the water and never using water from the hot-water tap for drinking or cooking—can significantly reduce exposure to lead. If high lead levels still exist, however, a home treatment unit may be needed.

Note: 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 may, in some cases, make the water quality worse.

Types of Point-of-Use Devices for Lead Reduction

Reverse-Osmosis

Reverse-osmosis devices, usually installed underneath the sink, use a membrane with pores tiny enough to screen out contaminants. They are effective in reducing inorganic materials, including lead. However, these units are expensive and may be difficult to install. In addition, reverse-osmosis units waste water by shunting at least three gallons of water directly down the drain for every gallon that is treated. Despite their cost and other drawbacks, reverse-osmosis devices may be considered for situations in which maximum lead reduction is necessary.

Distillers

Distillers are another effective means of reducing lead in water. A distiller uses electricity to boil water. After water from the tap is poured into the distiller, the unit condenses the steam, reducing contaminants in the process, and allows clean water to drip into a collection jug. The purchase price is much lower than that of a reverse-osmosis unit but the operating cost is higher because of the electricity needed to run the distiller. A distiller can sit on top of a counter. The only installation involved is plugging it into an electrical outlet.

Filters

Filters, the simplest type of point-of-use devices, trap particles in a porous material while allowing water to pass through. There are many brands and types of filters which vary in their effectiveness at reducing lead. Product literature should be checked to determine the filter's capabilities.

Undersink Filters

Undersink filters send water through prefilters to remove sediment and organic chemicals, then through a lead-reducing filter. Attached to the cold-water line beneath the sink, these filters are less expensive and much easier to install than reverse-osmosis devices although a hole may have to be drilled through the counter to allow passage for the treatment unit's spigot.

Faucet Filter

This is similar to a countertop unit, but, instead of being connected to the faucet with a hose, this filter sits atop the faucet. When the diverter valve is activated, water flows through the filter and out an opening in the unit.

With any type of filter, regular maintenance is critical. As filters remove particles from the water, they become clogged and have to be replaced or cleaned. Failure to do so may result in an increase in the bacteriological content in the water.

Countertop Filter

These types of filters typically have a hose that attaches to the faucet. At this connection is a diverter with a valve inside. When water is needed for non-consumptive purposes, it can be drawn through the tap as usual. When it is needed for drinking or cooking, the valve in the diverter can be activated to shunt the water through the filter, where it is treated, and then out a spigot in the unit.