food&waterwatch

Fact Sheet

Take Back The Tap Guide to Home Tap Water Filtration

The Take Back the Tap campaign encourages consumers to switch from bottled water to the clean, safe and nearly free water that comes from their own taps — for the benefit of their own wallets, their health, their local economies and the environment. The United States has some of the cleanest drinking water in the world. However, many people still prefer to filter their tap water for reasons of flavor or to remove minerals and particulates. That's why we've created this Home Water Filtration Guide — to help you get the most out of your water filter.

How to Use This Guide

The guide includes sections on the types of filters that are available and will give you the scoop on which filter is best for each type of filtering need.

Tips for Choosing a Home Tap Water Filter

- Find out what is in your water so you can determine whether filtering is worthwhile, and what you'll want to remove
- Know the styles, technologies and products on the market so you can pick the one that best fits your budget, lifestyle and filtering needs
- Verify the quality of your filter: check for third-party certification and unbiased ratings and reviews

Once you have the information you need, you'll be able to:

Save Money

Filtered water is much cheaper than bottled water:

- Unfiltered tap water: $0.002/gallon
- Filtered tap water: $0.25/gallon
- Bottled water: $10.66/gallon

Save Landfill Space and Energy

It takes the equivalent of 17.6 million barrels of oil to manufacture the 28.6 billion plastic water bottles each year in the United States. About 86 percent of these bottles – about two million tons – end up in landfills instead of being recycled each year.

Keep National Water Resources In Local Hands

Bottled water companies take water from community water sources and sell it in bottles for a massive profit.

(For more details about why consumers should take back the tap from bottled water companies, check out our "Take Back the Tap" report and our web site at www.foodandwaterwatch.org.)

Find Out What's in Your Water

The most important factor to consider when buying a water filter should be what impurities you want to remove from your water. Are you concerned about health risks, or simply unappetizing tastes and odors? This is important because different filters are designed to remove different types of impurities, and you want to make sure that the filter you buy will do the job.

If your main concern is safety, you will be glad to know that tap water in the United States is well-regulated and safe to drink.[1] Depending on the water quality where you live, you may decide that you don't need to filter your water at all. Regardless, you can find out what is in your water by contacting your local utility or your local public health department.[2]

Local utilities are required by law to provide their customers with a water quality report at least once a year in addition to providing public notification of specific violations. To access this report you can call your local utility and ask for a copy of its Annual Water Quality Report, also called the Consumer Confidence Report.[3] Alternatively, your local health department can test your water or provide a list of certified laboratories that can do the job.[4]

Once you know what is in your water (and what you want to take out), you can educate yourself about what product will best serve your needs. Check out the "Know What's On the Market" section of this guide for more information on existing product designs.

Know What's on the Market: A Water Filtration Glossary

Different water filter products use different technologies. Some use more than one. If you are looking for a home water filter you are likely to come across some of these terms:

Particulate/mechanical filter: Particulate, or mechanical, filters are simple screens that block large particles. They often function as "prefilters" in a multiple-step water filter.

Adsorption/Activated Carbon: Adsorption refers to a physical process where particles in water are removed because they stick to the surface of an "adsorptive" carbon material.[5] These filters are usually made of carbon or granular activated carbon (GAC).[6] They are the most common filters on the market and are generally effective for reducing the most typical worrisome compounds that can be found in municipal water: chlorine, chlorine by-products and dissolved volatile organic chemicals (VOCs) such as pesticides and herbicides.[7] Carbon adsorption filters generally work well for reducing bad odors and tastes.[8]


A common carafe-style filtration device used in many households.

Softeners/ion exchange units: Water softeners use a process called ion exchange to reduce hard metals, including lead, in the water.[9] When water passes through an ion exchange unit, hard metal ions are replaced by softer sodium ions, leaving the water "softer" as a result.[10] This technology is often used in combination with adsorptive or reverse osmosis filters.

Ultraviolet (UV) Treatment: Ultraviolet treatment uses UV light to kill germs that may be present in the water.[11] UV treatment is the only treatment certified by the National Sanitation Foundation International to reduce bacteria.[12]

Reverse Osmosis: Reverse osmosis is a process where water is forced through a membrane which filters out molecules that are physically larger than the water molecules.[13] Although reverse osmosis works well for reducing minerals, it is not effective for chlorine and volatile organic chemicals (VOCs), which are more likely to be concerns in municipal tap water.[14] Reverse osmosis filters are also very inefficient — they waste three gallons of water for every gallon that they filter.[15]

Distillation: Water distillers heat water so that it turns into steam, which is then collected and returned to its water form.[16] This new water is free of all contaminants that were left behind when the water evaporated. Thus, distillation is very effective for removing most minerals and bacteria. Unfortunately, like reverse osmosis, distillation does not work on chlorine or VOCs and is very inefficient — it generally wastes five gallons for every gallon of water produced.[17] Because the process also uses a lot of energy to heat the water, distillation units are not the purification product of choice for most households.

Types of Water Filters

Water filters come in many shapes and sizes. Depending on your filtration needs, lifestyle preferences and budget, you may want to consider the following options, whose descriptions were adapted from a May 2007 *Consumer Reports* (CRO) article:

Carafe (pour-through): The simplest water filter to use is the carafe, or pour-through filter, which is a pitcher that you can keep in your refrigerator. Carafes are inexpensive and easy to use. However, the filters have a short lifetime and can only filter a limited amount of water at a time. Source: CRO May 2007

Faucet-mounted: A faucet-mounted filter is exactly what it sounds like — a filter that is screwed directly onto your faucet. These filters require minimal installation, but they slow the flow of water and can't be used on all faucets. Source: CRO May 2007

Countertop: Countertop filters are best for filtering large quantities of water without modifying plumbing. They're less likely to clog than carafe or faucet-mounted filters, but can clutter countertops and can't be used with all types of faucets. Source: CRO, May 2007

Plumbed-in (under-sink): Plumbed-in filters are installed directly into an existing water pipe. Often, they are installed under the sink (as in "under-sink" filters). They can be plumbed-in to the existing sink faucet, which may require drilling a hole in the countertop, or can dispense water through a separate tap.[18] These filters are best for filtering lots of water without modifying the existing faucet or cluttering the counter. However, they take up cabinet space and require plumbing modifications. Source: CRO, May 2007

Point-of-entry (whole-house): Point-of-entry, or "whole-house" filters are installed directly in the water main and filter all the water in a house, including water for the kitchen, laundry room and bathrooms.[19] These filters have a long lifetime and are an inexpensive way to remove sediment, rust and, for some, chlorine from household water. But most aren't designed to — and won't — remove most other contaminants. They also require professional installation. Source: CRO, May 2007

Consider Each Product Individually

When you are considering technologies or styles, keep in mind that each individual product on the market has its own pros and cons.

Individual products may utilize multiple technologies, and are often marketed as two (or more) stage filters. Carafe, faucet-mounted, and countertop filters typically use a combination of adsorption and ion exchange resins, while plumbed-in systems may use those technologies in addition to reverse osmosis.

Filters also come in a wide range of prices. Most carafes and faucet-mounted filters cost between $20 and $50, while countertop, under-sink and whole-house filters can range from $50 to $900.

When considering the price of a water filter, remember that the total cost includes your initial purchase as well as any installation, maintenance or replacement fees. Filter parts need to be changed periodically in order to prevent clogging. So, make sure you consider how much replacement parts cost. Also, make sure to check the manufacturer's estimated life span for the product.

Also consider the amount of water you use. Some filter types have larger water capacities than others. Carafes, for example, can filter a few cups or gallons at a time, while faucet-mounted or under-sink filters work directly through a tap.

Most importantly, make sure that the individual product reduces the specific contaminants that you want to remove from your water. Generally, advertisements of filter products will include claims as to which contaminants they reduce and the percentage reduction rate.

An example of a plumbed-in filtration device.

Verify the Quality of Your Filter: Check for Third-Party Certification and Unbiased Ratings and Reviews

Make sure that your filter is certified by an independent certifying agency. There are many water filters on the market. Some of them live up to industry standards, and some don't. Make sure that the product you are buying does: The packaging should display certification from an independent certifying agency such as the National Sanitation Foundation International, Water Quality Association or Underwriters Laboratories Inc.[20] For more information about products and product certification guidelines, you can contact these organizations at:

National Sanitation Foundation International: www.nsf.org, 1-877-867-3435

Water Quality Association: www.wqa.org, 630-505-0160

Underwriters Laboratories Inc.: www.ul.com, 1-877-UL-HELPS (854-3577)

Avoid biased filter review sites and hyped up marketing claims. If you search the Internet for water filter reviews, you often are directed to sites where every single "best" option is from the same company, and includes a link to a site where you can buy that brand of filter.

The best sources of reviews and ratings come from organizations that do not sell the products, such as Consumer Reports. *Consumer Reports* is published by Consumers Union, a nonprofit organization that provides consumers with unbiased product tests and ratings.

Endnotes

1 "Take Back the Tap." Food & Water Watch, Washington DC, June 2007.
2 "Take Back the Tap," 2007, op. cit.
3 "Take Back the Tap," 2007, op. cit.
4 "Take Back the Tap," 2007, op. cit.
5 "Home Water Treatment Devices." National Sanitation Foundation, Available at www.nsf.org/consumer/drinking_water/dw_treatment.asp?program=WaterTre#technologies Accessed on Jan 29, 2008.
6 "Take Back the Tap," 2007, op. cit.
7 "Water Treatment Alternatives — How do they Compare?" All About Water, Available at http://www.allaboutwater.org/compare.html, Accessed on Jan 29, 2008.
8 "NSF Consumer Information: Contaminant Guide." National Sanitation Foundation, Available at www.nsf.org/consumer/drinking_water/dw_contaminant_guide.asp?program=WaterTre, accessed on 2/8/08
9 Hairston, James. "Ion Exchange Units: Cation Exchange (Softeners) and Anion Exchange." Alabama Cooperative Extension System, updated 09/12/01.
10 "Home Water Treatment Devices." National Sanitation Foundation, Available at www.nsf.org/consumer/drinking_water/dw_treatment.asp?program=WaterTre#technologies Accessed on Jan 29, 2008.
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13 "Home Water Treatment Devices." National Sanitation Foundation, Available at www.nsf.org/consumer/drinking_water/dw_treatment.asp?program=WaterTre#technologies Accessed on Jan 29, 2008.
14 "Water Treatment Alternatives — How do they Compare?" All About Water, Available at www.allaboutwater.org/compare.html, Accessed on Jan 29, 2008.
15 "Water Treatment Alternatives — How do they Compare?" All About Water, Available at www.allaboutwater.org/compare.html, Accessed on Jan 29, 2008.
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18 "Home Water Treatment Devices." National Sanitation Foundation, Available at www.nsf.org/consumer/drinking_water/dw_treatment.asp?program=WaterTre#technologies Accessed on Jan 29, 2008.
19 "Home Water Treatment Devices." National Sanitation Foundation, Available at www.nsf.org/consumer/drinking_water/dw_treatment.asp?program=WaterTre#technologies Accessed on Jan 29, 2008.
20 "Take Back the Tap," 2007, op. cit.

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