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Secrets of Water - What's in Your Water and Why You Should Use a Filter

Learn all about water filtration and the containments in water.

A series of questions and answers will teach you many important factors about the water you drink, tests to determine what is in your water, and the best direction you can take to ensure you and your family have safe and healthy water.

Remember, if you don't have a filter, you are the filter.

Most Commonly Asked Water Questions

Q: Is Chlorine harmful?

A: Chlorine was first added to a community water system in 1908 in Chicago and was instrumental in eliminating many types of water-borne disease such as Cholera and Typhoid fever. Prior to chlorination, many major cities had death tolls of 1 in 1000 people from Typhoid alone. Chlorine has been used to disinfect municipal water for over 80 years and has had some positive effects on public health. In the 1970's it was discovered that chlorine, when added to water, forms Trihalomethanes (chlorinated by-products) by combining with certain naturally occurring organic matter such as vegetation and algae.

In 1992 the American Journal of Public Health published a report that showed a 15% to 35% increase in certain types of cancer for people who consume chlorinated water. This report also stated that much of these effects were due to showering in chlorinated water. The National Cancer Institute estimates cancer risks for people who consume chlorinated water to be 93% higher than for people who do not.

The effects of drinking chlorinated water have been debated for decades. However, most experts now agree that there are some significant risks related to consuming chlorine and chlorinated by-products.

Q: Why do some areas test negative for chlorine?

A: Virtually all city water systems contain some level of chlorine. The level will vary based on outdoor temperature, the season, distance from water utility and current usage. While chlorine may sometimes be undetectable on a certain day with a standard OTO test kit, that level can change dramatically day to day. Also some cities use ammonia at certain times as a disinfectant in order to reduce chlorination by products. Without chlorine the dangers of water borne disease would be to significant, an undetectable chlorine level, on a certain day, does not eliminate the need for an effective chlorine removal system.

Q: What do you do if you have water contaminated by radioactive matter?

A: Move! Radioactive water is not very common in this country and is a more serious problem than should be dealt with by a home water treatment system. Many people confuse the contaminant 'Radon' with radioactivity when in fact they are quite different. Radon is produced from decaying Uranium ore and can be effectively removed by carbon filtration.

Q: What are VOC's?

A: Volatile Organic Chemicals are synthetic compounds that turn into vapor at relatively low temperatures. VOC's typically vaporize at a much lower temperature than water. Most synthetic chemicals found in water, such as pesticides and herbicides, are VOC's.

Q: Are there more in depth contaminant tests that can be performed in a customer's home than OTO?

A: Not feasibly, most other tests for organic chemicals or heavy metals require testing by a spectrometer or by atomic absorption. Both methods are very accurate and require very costly equipment. Accurate and specific water analysis can only be performed in a laboratory. The best method of showing a consumer that there are other chemicals in their water is to obtain a copy of the water utilities annual water quality report, by law they have to provide it. The OTO test gives a good visual of the levels of chlorine in the water and the filters ability to remove it.

Q: What is TDS?

A: Total Dissolved Solids, the total measurement by weight of all solids that are dissolved in water. The dissolved solids in water are primarily calcium and magnesium

and would not be a measurement of contamination. Tests which measure the conductivity of water (often used by companies selling reverse osmosis systems) only give a rough estimate of dissolved solids and should not be viewed as an indicator of water quality.

Q: Why do the filtration systems not reduce TDS?

A: 'Filtration' systems are designed to selectively remove contaminants and to leave in the dissolved trace minerals such as calcium and magnesium. These water-borne minerals are healthful and give water a more natural flavor. Systems that remove minerals lower the pH of water and cause it to be more aggressive. Low pH water will seek to balance itself by leaching elements such as copper, lead or aluminum from plumbing fixtures and cooking utensils. Cooking in mineralized water will also draw the minerals from your foods causing a reduced nutritional value.

Water with a balanced mineral content has a much less tendency to take on foreign elements. TDS (total dissolved solids) is primarily made up of dissolved minerals and is not related to harmful contaminants. It is very deceptive for companies to imply that a reduction in TDS means improved water quality, in most cases it does not.

Q: Why would the filtered water from the unit appear cloudy sometimes?

A: Occasionally, filtered water may appear milky or cloudy. The siphon action in closing the faucet can create air pockets in the filter. These air pockets will produce tiny air bubbles in the filtered water which cause the appearance of cloudiness. This air will disappear if the glass of water sits for a minute. If cloudiness is noticed in the filtered water, turn the filter upside down and allow water to run for two to three minutes. This will allow the air pockets to purge out of the filter cartridges.

Q: Can filters be used on hot water?

A: It is not recommended to use drinking water filters on hot water due to the potential for leakage. The soft rubber tubing on most Counter-Top systems and the o-ring seals can soften and create leaks when exposed to hot water. Most countertop systems are rated for water temperatures up to 90 degrees. Shower filters can be used with water up to 115 degrees, 100 to 104 is normal shower temperature.

Q: Do people on private wells need to use shower filters?

A: There are many health and cosmetic benefits to removing chemicals and compounds from shower water, even on non-chlorinated private wells. Virtually all ground water contains traces of some chemical or chemicals that can be absorbed through the skin or inhaled. Also shower filters helps balance the waters pH, which is also a cosmetic benefit.

Q: How does a water softener differ from filtration products?

A: Water softeners are not designed to improve the healthfulness of water, but rather to decrease dissolved minerals and reduce scaling of pipes and appliances. These systems typically use a sodium charged exchange media that releases sodium ions and removes minerals such as calcium, magnesium, or potassium. From a health standpoint, the minerals would be preferred over the sodium. Filtration systems are designed to specifically remove harmful contaminants and leave in the natural minerals.

Q: Are filtration products considered purifiers?

A: Technically, a purifier would be a system that provides 'pure' water-hydrogen and oxygen with no other components.Pure water of this sort does not exist except in the controlled environment of a laboratory. Most references to 'pure water' are in relation to the bacteria content and not the chemical contaminant concentrations. The EPA defines 'pure' as water free from all types of bacteria and viruses.

Each of these definitions would describe a system significantly different from a drinking water filter. Many filtration systems are designed to eliminate chlorine resistant parasites like cryptosporidium and giardia but should not be sold as a means of treating water of unsafe bacteriological quality.

Q: Are water products EPA approved?

A: No, the EPA does not approve anyone's product. Only products which contain regulated contaminants, like silver in silver impregnated carbon filters, are required to have an EPA 'registration' number. An EPA registration number simply means that the product contains something that the EPA has determined to be harmful.

Q: Do water treatment products require FDA approval?

A: No, however the certifications which apply certified products require proof that all component materials meet FDA requirements for food grade materials. The perfor-

mance claims of a filtration system should be validated and certified by the California Department of Health Services to ensure compliance.

Q: How do filters compare to reverse osmosis or distillation systems?

A: Reverse osmosis and distillation are non-selective de-mineralizing processes. The water produced by these systems has been stripped of all mineral content which causes water to be acidic and aggressive. The healthiest water is water that is free from contamination but still contains a natural mineral balance. Filtration systems are designed to selectively remove contaminants and allow the natural minerals to pass through.

Q: Are whole house systems (P.O.E. - point-of-entry) better than counter-top filters (P.O.U. - point-of-use)?

A: P.O.U. systems are by far the best way to ensure the highest quality water since many water-borne contaminants come from the plumbing in your house, especially lead and vinyl chloride from the piping. By filtering water at the point-of-use you remove contaminants just prior to consumption, eliminating the chance of recontamination. Point-of-entry systems are very beneficial in that they provide filtered water to all baths and showers as well as other water appliances. By filtering all the water going into your home you improve not only the healthfulness of the water, but you greatly improve the indoor air quality by removing chlorine and other chemicals that vaporize and get into the indoor air.

Q: How do you know if there are contaminants in your water?

A: All public water systems contain some level of one or more unhealthful chemicals. Regulations only require periodic testing of about 86 chemicals. There are now more than 75,000 chemicals used in our society with over 1000 new ones being developed each year. Contaminant levels fluctuate throughout the year making it impossible to know the actual level of contamination in a central water system. So far over 2100 toxic chemicals have been detected in America's water systems. The risk is high and the cost for a sure solution is low.

Q: What are some good web sites to find documentation on water problems?

A: NRDC.org (Natural Resources Defense Council), EWG.org (Environmental Working Group), EDF.org (Environmental Defense Fund), and CDC.gov (Center for Disease Con-

trol) are all good informational sites with numerous documented studies on water problems.

Q: Do filter systems remove Radon?

A: Radon is a gas produced by decaying Uranium and is more often a problem when airborne, however some areas may have Radon in the water which can be effectively removed by most carbon filters.

Q: Does the AQ-4000 system use silver to prevent bacteria from growing inside the filter?

A: No, silver is used in some systems to reduce bacteria growth, however, silver is a toxic metal that can leach into the filtered water. The type of bacteria (heterotrophic) that can colonize on carbon media is a very slow growing bacteria and is typically only a problem with filters that are used for 12 months or longer without cartridge replacement.

Q: If my municipal water company's Annual Water Quality Report shows that it meets all EPA guidelines, does that mean it's safe?

A:On October 1st 1999 a new federal law went into effect that requires water utilities to send each customer a detailed report showing what is in their water, appropriately called 'The Right To Know Amendment'. The most important thing to remember is that no matter how insistent these reports are that 'contaminants in your water do not necessarily pose a health risk ', any level of contamination in our drinking water does in fact represent a danger to our health. Of the over 75,000 toxic chemicals used in our society, the EPA has only set standards (MCLs) for 86, and those 86 Maximum Contaminant Levels are not necessarily set on "health effects."

The EPA considers limited health studies based on consumption of one certain chemical by a 175 lb. adult when setting these standards.No consideration is given to the effects on small children or the combined effects of two or more contaminants, which some studies show are magnified by as much as 1000 times. Water utilities are only required to test for the 86 contaminants that the EPA has set standards for. Nobody knows how many toxic chemicals may actually be in tap water.

According to the Ralph Nader Research Group, after reviewing thousands of pages of

EPA documents acquired through the Freedom of Information Act, more than 2100 toxic chemicals have already been detected in U.S. water supplies. Virtually all public water systems have some level of contamination. The water utilities are usually quick to point out that the chemicals found in their water are 'below EPA's Maximum Levels', and in most cases they are.

The fact is that even the smallest trace of a toxic chemical causes damage and science is just now starting to realize to what extent. In a recent report from the National Cancer Institute to the Surgeon General it was stated that "No level of exposure to a chemical carcinogen should be considered toxicologically insignificant to humans," and we are learning the hard way the truth of this statement.

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During a warm shower your pores in the skin open and allow a higher rate of absorption of chlorine and other chemicals. We also inhale steam while showering which can contain up to 20 times the level of chlorine and other synthetic chemicals than tap water because these chemicals vaporize at a lower temperature and at a much faster rate than water. This means Inhalation of chlorine and chemical vapors is known to be a strong irritant to our lung tissues and are a suspected cause of asthma and bronchitis. When chemicals such as these are inhaled into our lungs they directly enter into our bloodstream. They can have greater magnified effects versus ingested chemicals which are partially filtered by our liver and kidneys.

Their are also cosmetic benefits to showering with a filtration system. Anyone who has ever gone swimming in a chlorinated pool can relate to the harsh drying effect that chlorine has on your skin and hair. Your skin and hair retain moisture more effectively for a younger healthier look and feel without the effects of chlorine and other chemicals found in tap water.

You will want to learn about the Aquasana shower filter and its unique patent. It has a two stage system that removes chlorine and other chemicals for a healthier and more enjoyable shower experience. Also, this high capacity filter is easy to install. It is also very attractive and a beneficial addition to any shower. Some say, it's like showering in natural spring water. Once you experience it you'll never go back.

Also from Aquasana-Deluxe Drinking Water Filtration System: Restores water to a refreshingly healthy state for only 9 cents a gallon.

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