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# The Myth about Distilled Water

Blowing The Lid Off Distilled Water Myths

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Controversy always seems to shroud distilled water through the years. The same old myths and fallacies that were once heard ten to fifteen years ago still continue today. All the misconceptions about distillation and distilled water are grossly misrepresented.

All the myths listed below have no basis in fact. The purpose of this article is to set the record straight and lay these false perceptions to rest. Helping clear up these misconceptions about distilled water will greatly benefit both the dealer and the general public.

## MYTH # 1: Distillation takes out all the beneficial minerals

This is a statement used countless times, usually from literature from some filter companies trying to tell you in effect, that their filters take out all the bad contaminants, but leave in the good, beneficial minerals. Fortunately, there are many reputable companies who would never think of making this kind of claim in its ads.

Distillation will kill and remove bacteria, viruses, cysts, as well as, heavy metals, radionuclides, organics, inorganics, and particulates. And yes, it will remove minerals, which fall under inorganic contaminants. Whether the minerals in water are beneficial or useless has been an ongoing debate.

All of our minerals are derived from our food: fresh fruits, vegetables, meat, poultry, grains, nuts, and dairy products. The minerals in water are so scant that in Boston, MA for example, one would have to drink 676 8-ounce glasses of tap water to obtain the Recommended Daily Allowance ( RDA) of calcium. That person would have to drink 1,848 8-ounce glasses to get RDA of magnesium, 848 8-ounce glasses to get RDA of iron, and 168,960 8-ounce glasses to obtain the RDA of phosphorus. It seems insane to even think about drinking that much water. Most people can't even drink the recommended 8 glasses of water a day that is widely touted by health experts.

When you think of pure water what definition comes to your mind? It should be just H<sub>2</sub>O, and that's it. It's not H<sub>2</sub>O with minerals and fluoride, because that doesn't fit the description of pure water. For all intent and purposes, distilled water comes the closest to the definition of pure drinking water. The process of distillation removes the broadest range of contaminants over any other point of use (POU) system.

## MYTH # 2: Distilled Water leaches minerals from your body.

What the proponents of this myth want you to believe is that because distilled water is so pure, drinking it will leach minerals from your body, thereby robbing you of good health and nutrition. There is no basis of fact to document this claim.

The national best-selling health and diet book, : "Fit for Life II: Living Health" by Harvey & Marilyn Diamond, answers this question. The following is an excerpt:

"Distilled water has an inherent quality. Acting almost like a magnet, it picks up rejected, discarded, and unusable minerals and, assisted by the blood and the lymph, carries them to the lungs and kidneys for elimination from the body. The statement that distilled water leaches minerals from the body has no basis in fact. It doesn't leach out minerals that have become part of the cell structure. It can't and won't. It collects only minerals that have already been rejected or excreted by the cells...To suggest that distilled water takes up minerals from foods so that the body derives no benefit from them is absurd."

## MYTH # 3: Long continued drinking of distilled water could cause deterioration of the teeth

I saw this statement in product literature from a national filter company. Shame on them for bad mouthing distillation just to sell a few more filters. This is a truly inventive falsification. The negative message this filter company wants to convey is that drinking distilled water (which has removed all traces of fluoride) for long periods, will supposedly wreak havoc on your teeth by deteriorating them. Where is the proof?

## MYTH # 4: Distilled water tastes bland or has a ' flat taste '

This is probably the most popular myth surrounding distilled water. I've often read this statement from various articles written on water treatment systems. When the articles refer to distillation, they will usually say it removes the minerals that will leave a 'flat taste'. I'd be willing to bet that the authors of this type of articles never tasted freshly made distilled water from a home water distiller.

These types of false remarks misinform consumers so they have preconceived notions about distilled water before they even try it. The mistruth about distilled water having a 'flat taste' can be explained in several ways.

First, in years past, the original distillers did not incorporate any pre or post carbon filtration. If you've tasted straight distilled water made without the use of any pre or post carbon filtration, it might have a steamy taste or off taste. The use of carbon filtration with distillation is as follows: tap or well water is first sent through a pre filter to help take out chlorine,

odors, sediment, and other organic contaminants before it reaches the boiling tank of the distiller. After the steam is condensed into distilled water it is finally passed through a carbon post filter to remove any potential gases or volatile organic contaminants (VOC'S) that might have escaped during the boiling process. Not using a post filter in the past with distillation might have produced an off taste in distilled water, due to these VOC'S. The carbon post filter is most important because it acts as a polishing filter to clean up any volatile gases, which can produce an off-taste, that may have escaped during the boiling process.

Second, another reason for distilled water having this label for 'flat taste' is someone accustomed to drinking chlorinated or well water high in iron content for a long time. When they are suddenly introduced to distilled water for the first time, it is a shock, noticeable to their taste buds. People raised on high iron in their well water for instance, would be used to its 'sweet' taste, but when given distilled water might say it tastes 'flat' since it is iron free.

Taste is the number one reason that consumers buy bottled water. It is a \$4 billion market. Many consumers are led to believe that you need minerals in water to give it its taste. It is actually oxygen that gives water its taste. Water shouldn't have a taste or a metallic after bite. Try either a cold or room temperature glass of freshly made distilled water and taste the difference for yourself... It's delicious.

A third reason for the 'flat taste' theory is buying distilled water in the store. Distilled water, as virtually all bottled water, is stored in cheap plastic containers. Some have been known to leach methyl chloride, a carcinogen, into the water and also give off plastic tastes and odors. Water has been called the universal solvent, whatever it touches it will pick up. Distilled water being virtually 100% contaminant free might leach plastic tastes into the water from the inferior bottle its being stored in. Besides glass, consider buying bottles made from Lexan that won't give off any plastic tastes or odors.

#### MYTH # 5: Distilled water isn't effective against organic chemicals

VOC'S are organic chemicals that have lower boiling points than tap water, for e.g., benzene. When water is being boiled to 212 degrees Fahrenheit in the boiling tank, if VOC'S are present they will vaporize and rise up with the steam as a gas. Many distillers today utilize a volatile gas vent, which is a pin hole in the top of the condensing coils to vent off any unwanted gases. If the VOC's do happen to escape this vent, then the carbon post filter will trap them. Carbon pre treatment before distillation will remove a majority of chlorine and VOC'S, whereas the post filter is mainly used as a polishing filter. In cases of manual distillers, only post carbon filtration is used and is sufficient in removing VOC'S and unwanted gases.

I see this statement made all too often in advertising literature from different segments of the water industry. When they compare their system with distillation, they will say that theirs will remove nearly all the organic contaminants and distillation is weak on VOC removal. Why? Because they are telling you half the truth. Distillation without carbon filtration is not as effective in removing VOC'S by itself. Combining carbon filtration with distillation will boost removal rates to greater than 99% under normal conditions. In an actual highly spiked test, VOC'S were tested on a Durastill distiller system with carbon filtration. The results are shown below:

Volatile Organic Contaminants	PARAMETER	Quantity Spiked	mg/l*	EPA limit	mg/l	Times EPA Limit	Spiked	% of Removal			
Benzene	0.500	0.005	10097.0	Trichloroethylene	1.00	0.005	20095.7	Trihalomethanes	66.70	1066	799.85

\* EPA- Environmental Protection Agency

As you can see, these test results were spiked tremendously beyond the EPA limits to show how the distiller with carbon filtration can remove an extreme amount of contaminants.

Today, carbon filtration is standard with all home distillation systems on the market, making it a complete system by removing a wider range of contaminants, including VOC'S.

#### MYTH # 6: Distillers are expensive to run

Home distillers take about 3 kilowatts to make 1 gallon of distilled water. On the basis of the Unites States average of 7.8 cents per kilowatt hour, that's around 24 cents to make 1 gallon. Is 25 cents a gallon too much to pay for pure distilled water made fresh in your home? Compared to buying bottled distilled water from the store that can cost you anywhere from 89 cents up to \$1.29 per gallon. Making your own distilled water is very cost effective. Why buy the milk when you can have the cow at home. Taking an example of buying 5 gallons of distilled water a week at a \$1.00 per gallon average, you're spending \$260 per year. If you made your own distilled water at 25 cents per gallon, that would amount to \$65 per year for electrical costs. That is a savings of 75% on the cost of buying bottled distilled water. Amortization of the initial purchase of the distiller can be made in a short time.

Maintenance of a distiller is changing pre and/or post carbon filters about every 6 - 12 months and periodically draining out the residue left over from the boiling process. If there is a heavy scale build-up accumulating in the boiling tank, there are cleaning agents available. The two most popular cleaners; citric acid and sulfamic acid, a stronger agent, are recommended to soften and loosen up the scale.

#### Conclusion

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It's time to set the record straight about distilled water myths. There is a definite need for the home distiller market in the industry and consumers have a right to know the correct facts concerning distilled water. Here are some points to remember:

\* Distillation, when combined with carbon filtration, will kill and remove virtually 100% of bacteria, viruses, cysts, and will remove heavy metals, inorganics; including minerals, radionuclides, particulates, and organics; including VOC'S. \* Over 95% of our minerals come from our food and less than 5% from drinking water. You would practically have to drown yourself by drinking it to get the RDA of any beneficial minerals.

\* Pure water refers to water that is H<sub>2</sub>O, and that's it! It's not H<sub>2</sub>O with calcium, iron, fluoride, etc... Distilled water comes the closest to this definition.

\* Distilled water will not leach minerals from your body. There has never been any documented evidence to prove this claim true. It is perfectly safe to drink.

\* Long term drinking of distilled water is not deleterious to your teeth.

\* Distilled water does not taste bland or flat. Would hundreds of thousands of people worldwide be drinking it everyday if it didn't taste good?

\* Distillers do not use up much electricity. Distillers will make 1 gallon for roughly 25 cents. Compared to bottled distilled water at around \$1.00 or more per gallon, the savings are tremendous year after year.

Hopefully, the facts I've presented to expel the myths about distilled water will help the industry present distillation in its true light. There is an absolute need for various POU water treatment systems for the home market based on the needs of the consumer. Distillation is definitely one of them.

References:

Fit For Life II, Living Health: The Complete Program by Harvey & Marilyn Diamond, pg. 101.

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