Deionized Water

Deionized water is a type of purified water with mineral ions (salts) removed. These mineral ions include sodium, calcium, iron, copper, chloride, and bromide. Deionized water is created by taking conventional water and exposing it to electrically charged resins that attract and bind to the salts, removing them from the water. Because most of the impurities in water are mineral salts, deionized water is mostly pure, but it does still contain numerous bacteria and viruses, which have no charge and therefore are not attracted to the electrified resins.

In recent years, many deionization systems have been marketed for home use, often with claims that deionized water is an antioxidant that can slow aging and prevent disease. This is quack medicine, and contradicts basic aspects of physiology and chemistry. Some scientists who have studied the health effects of deionized water have even called it "snake oil on tap." There are many reasons why deionized water should not be expected to give positive health effects, but one is that the mineral salts that one would avoid by drinking this water are merely regained by eating any other food with even trace amounts of moisture. So the level of mineral salts in the body is essentially the same either way. Many of the mineral salts are essential nutrients, and some scientists even say that drinking unpurified water provides us with significant portions of our daily values of these nutrients.

Despite its uselessness for improving health, deionized water has many applications, most of them scientific or industrial. Deionized water is used extensively in microbiology experiments as a medium. This deionized water is also cooked in an autoclave prior to use, which kills off all bacteria or viruses therein. It is used to top up lead acid batteries used in cars and trucks, as mineral ions found in tap water drastically reduce their lifespan. It is used for steam irons used on clothing, ensuring well-ironed clothes without any chance of mineral residue. Deionized water is also used as a medium or additive in many pharmaceutical or cosmetic products, desired for its low chemical reactivity.