eSpring™ WATER TREATMENT TECHNOLOGY COMPARISON

AVAILABLE TECHNOLOGIES

A comprehensive list of current water filtration technologies, along with the pros and cons of each.

PRESSED CARBON BLOCK/UV LIGHT

Water is forced under pressure through pressed activated carbon filter material. Water is then exposed to ultraviolet light.

PROS:
Effectively removes more than 140 contaminants, including pesticides, industrial chemicals, organic and inorganic compounds, and particulates in sizes down to 0.2 microns
Ultraviolet (UV) light effectively destroys more than 99.99% of bacteria and viruses
Carbon/UV filter lasts up to 1 year or 5,000 litres (1,320 gallons) whichever comes first (average filter life depends on water quality and usage)
Supplies treated water on demand directly from your tap

CONS:
More expensive initially than many alternatives
Does not filter inorganic contaminants such as Arsenic, Chromium VI, and Nitrates/Nitrite

REVERSE OSMOSIS

Pressurized water is forced through a semipermeable membrane. Water is typically collected in a storage tank and dispensed with a separate faucet.

PROS:
Reduces inorganic compounds
May reduce some high Molecular Weights organic compounds
Reduces protozoan parasites

CONS:
Requires high water pressure (> 40 psi)
Removes beneficial minerals
May not effectively remove bacteria and viruses
Wastes water (typically 80%)
May not remove some low Molecular Weights organic compounds

DISTILLATION

Heating of water until it turns to steam. Vapor is cooled and condenses back to liquid water.

PROS:

PROS:
Reduces Chlorine
Reduces inorganic contaminants
Reduces bacteria and viruses
Reduces high Molecular Weight Organics

CONS:
Reduces beneficial minerals
Requires a lot of energy
May give water a flat taste
May be slow, inconvenient, and expensive
Does not remove low boiling point organics

DISINFECTION - CHLORINE

Water is treated with chlorine chemicals, a process commonly used by municipal treatment centers.

PROS:
Simple and effective against bacteria and viruses
Low Cost

CONS:
Not effective on protozoan cysts
Requires contact time (minutes)
Forms disinfection by-products and other by-products
Hazardous to transport

DISINFECTION - OZONE

Ozone gas (O3) is generated by corona discharge or Ultraviolet (UV light) and bubbled through water.

PROS:
Effectively kills bacteria and viruses
Oxidizes and precipitates iron, sulfur, and manganese
Will destroy many organic compounds

CONS:
Can create undesirable by-products (e.g. bromate and formaldehyde)
Requires electricity
Does not reduce inorganic compounds

ANION EXCHANGE

Used to trap and replace negatively charged ions, such as nitrates, perchlorate, fluoride, radium, ammonia and arsenic.

PROS:
Is contaminant specific to address homeowner issues
Uses industry standard cartridge sizes and housings
Eliminates need for larger or more costly systems

CONS:
Flow rate limited (some are less than 0.5 gpm)
Capacity limited for some ions
Selectivity can be a problem (Competition)
Dumping of contaminant or resin can be a problem if resin is "Spent"
Requires a strong chemical to recharge (Sodium Hydroxide)

PH ADJUSTMENT

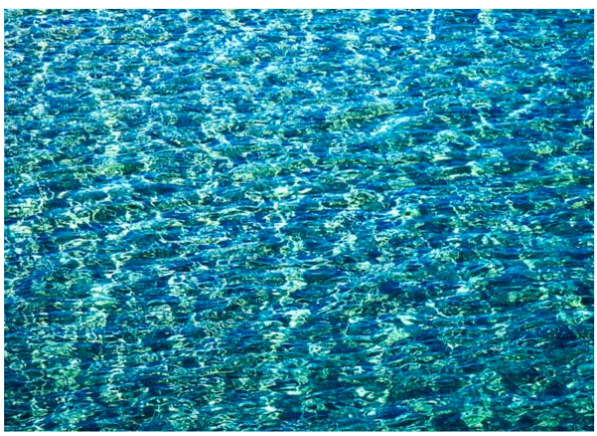
Tap water passes through chambers with electrodes to split water molecules into ions. End users are able to select the pH desired.

PROS:
Allows users to adjust the pH or dispensed water
Makes water "feel" different to users

CONS:
No scientific data to support claims of pH water better for skin or digestive health
Has a waste stream
Cannot effectively reduce chlorine, organic, or inorganic contaminants from drinking water
Complex with electronics

BOTTLED WATER

Water is purchased in plastic or glass bottles from a store or water vendor.

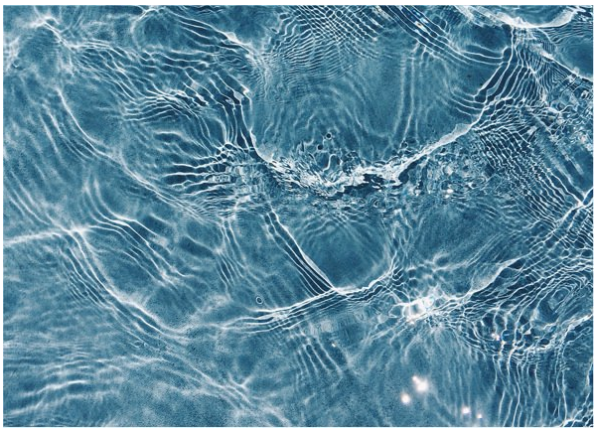


PROS:
Perceived to be higher quality in terms of taste, odor, clarity and lack of microbiological and chemical contamination

CONS:
Varying quality
Most bottled waters are treated to improve taste and appearance only – and may still contain bacteria, organic and inorganic compounds
Expensive, inconvenient and wasteful (plastic that's harmful to the environment).

BOILING

Water is boiled for 20 minutes, then cooled to drinking temperatures.



PROS:
Reduces bacteria, viruses and cysts – if water is boiled for 20 minutes

CONS:
Does not reduce particulates, or many inorganic or organic compounds
Will not improve water taste color or odor
Is very inconvenient and time-consuming