

Compilation Chart on Different Types of Purification System and Their Advantages & Disadvantages

Types	Filtration	Reverse Osmosis	Distillation	UV Light / UV Radiation	Ionized Water System	Magnetization Water System
Description	Water filtration systems can use a variety of filtration media to achieve a clean water.	This is a process that exposes water under pressure to a semi permeable membrane with a very fine pore structure	Water is heated to boiling point where it vaporizes. The vapor is then condensed and stored after it has been collected.	Water passes through a chamber where it is exposed to UltraViolet radiation	The Ionized Water System, slightly is an electrical appliance connected to your kitchen water supply to perform electrolysis on tap water before you drink it or use it in the kitchen for cooking.	Water is exposed to a strong magnetic field and the properties of water undergo a changes such as : its physical properties like density, viscosity, its chemical properties like pH, and nitrogen iron concentration undergo changes.
Advantages	<ul style="list-style-type: none"> - Reduce disagreeable tastes and odors. cost effectiveness - Retain beneficial minerals - Balance & stabilise pH - Carbon filters are able to remove organic material (humus, algae), concentrated chemicals (chlorine, trihalomethane, fluoride), and microscopic contaminants (herbicides, pesticides). - No electricity cost - Selected quality raw materials for filtration media - Affordable & cost effective. 	<ul style="list-style-type: none"> - Ability to reject nitrates, chlorides and some contaminants - The manual is simple and secure - No regeneration with chemicals - Low energy consumption - Long lifetime of membranes 	<ul style="list-style-type: none"> - It is beneficial since it takes away a wide range of pollutants. 	<ul style="list-style-type: none"> - Removes some organic contaminants - Leaves no smell or taste in the treated water - Requires very little contact time (seconds versus minutes for chemical disinfection) - Improves the taste of water because some organic contaminants and nuisance - microorganisms are destroyed - Many pathogenic microorganisms are killed or rendered inactive. - Does not affect minerals in water -This treatment is effective against many bacterial contaminants, but is not effective in reducing cryptosporidium 	<ul style="list-style-type: none"> - Removes dissolved inorganics effectively - Non-polluting and safe. - No chemical regeneration - No chemical disposal - No resin disposal - Inexpensive to operate 	<ul style="list-style-type: none"> - The small molecule improve the taste of the water and it can be rapidly absorbed by tissues and cells. - The oxygen content of the water is also increased and the dissolution is greatly enhanced. - Improves taste & clarity of water

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<p>Disadvantages</p>	<ul style="list-style-type: none"> - Only those good filtration system is effective in removing many common contaminants such as arsenic, bacteria, copper, lead, nitrates, parasites, sodium & viruses. 	<ul style="list-style-type: none"> - Ineffective in removing synthetic chemicals such as herbicides and pesticides because they are smaller than the water molecule and could pass through the membrane. - Reverse osmosis typically wastes 2 to 3 gallons of water for every gallon it produces and costs 18 to 24 cents per gallon. - R.O. systems require adequate water pressure and extensive maintenance 	<ul style="list-style-type: none"> - There could be other harmful chemicals that vaporize together with the water and that could be ingested assuming that the water is purified. - Uses too much energy - Slow process and it must be repeated several times to ensure significant water purity. Synthetic chemicals common in municipal water such as pesticides, herbicides, and chlorine solutions won't be removed through distillation, because their boiling point is lower than the one of water - It strips water of its natural trace elements, thus turning it acidic as the hydrogen composition becomes greater in proportion 	<ul style="list-style-type: none"> - UV light is not effective against any non-living contaminant, lead, asbestos, many organic chemicals, chlorine, etc. - Tough cryptosporidia cysts are fairly resistant to UV light. - Requires electricity to operate. In an emergency situation when the power is out, it will not work. - UV is typically used as a final purification stage on some filtration systems. If you are concerned about removing contaminants in addition to bacteria and viruses, you would still need to use a quality carbon filter or reverse osmosis system in addition to the UV system. - Decreases resistivity - Will not remove particles, colloids or ions. 	<ul style="list-style-type: none"> - Needs pre-purification 	<ul style="list-style-type: none"> - The unit may cost some money.