Water & Water Changes

Water is water, right?! Not so….

Tap water is water that is supplied through a piping system and usually provided by a well or municipality. Tap water is purified by various methods depending on the source and often contains chemicals and heavy metals such as chlorine, chloramine, and iron. If you use tap water, it is crucial to use it in conjunction with a water conditioner like Fluval AquaPlus or API Stress Coat. These products remove chlorine, chloramine, and heavy metals as well as reduce fish stress.

Spring water is by definition water from a spring. Spring water can be full of minerals and salts - more or less depending on the source. This type of water is not necessarily bad for fish, nor is it necessarily good. If you do water changes with spring water, the chemistry of the water may change depending on the source. Changes in water chemistry can cause stress to your fish, and a stressed fish is more susceptible to disease.

Distilled water is water that has been boiled and the water vapor collected in a separate chamber. The mineral and salts are left behind as the pure water evaporates, so the end product is mostly pure water without the minerals and salts fish need to ensure good health. We do not recommend this type of water for use in aquariums because it is *too* pure!

De-ionized water is water that has passed through a chamber containing an ion exchange resin. The resin chemically strips the water. Although the process is different, the result is similar to distilled water. De-ionized water does not contain the minerals and salts that fish need. Again, it is *too* pure.

RO (Reverse Osmosis) water is water that has been filtered through a membrane which allows only water molecules to pass through. The reverse osmosis water used and sold at B&B Pet Stop goes through five filter stages. First is the particulate stage that filters out solids. Second is the carbon stage that filters out chemicals. Third is the water softener which removes calcium, magnesium, and other minerals. Fourth is the R/O unit which forces water through a permeable membrane. The fifth and final stage is a de-ionizing chamber where the water comes in contact with a special resin that removes pretty much whatever is left. Our R/O water is really very close to just hydrogen and oxygen (pure water H_2O). We also have R/O Saltwater to which we add aquarium salt to achieve an approximate specific gravity of 1.025 (the average specific gravity of seawater).

If you use distilled, de-ionized, or R/O water for partial water changes in **freshwater**, you should use a product like Continuum's Reconstitute RO to add back minerals, salts, and electrolytes that are essential to fish-keeping. For **saltwater**, these products are not necessary because sea salt mixes contain all the essential elements that saltwater fish and corals need.

Whatever your water choice - remember: **regular, partial water changes are vital in both freshwater and saltwater aquariums!** This does not mean simply replacing water that has evaporated! When water evaporates, the only thing that leaves the tank is water, so many dissolved minerals and salts present in your aquarium remain there and become more concentrated!

The correct procedure is to remove the same amount of water that has evaporated and then replace it all. One short-cut to this procedure is to add back **R/O** water to the tank. Since **R/O** water is stripped, there is no chance you will overload your tank with salts and minerals.

WHY SHOULD I USE R/O WATER?

R/O water is favored not because of what it contains but because of what it does not contain. By stripping the water of all salts and minerals, the process also removes unfavorable chemicals. Tap water can contain phosphates and nitrates in addition to the obvious chlorine and chloramine. This phosphate and nitrate will cause excessive algae growth in both saltwater and freshwater tanks. If you've had a problem with brown algae or green or black hair algae, RO water is for you! Reverse osmosis water is available at B&B Pet Stop with or without added sea salt.

WHY SHOULD I CHANGE THE WATER?

Dilution is the solution to pollution. When fish live in an aquarium they produce waste. As the waste is broken down by bacteria, the pH of the water in that tank has a natural tendency to become more acidic. A lower pH can cause stress to your fish, making them more susceptible to disease outbreak. Partial water changes - replacing old, lower pH water with new, higher pH water - on a regular basis, usually achieves a more balanced neutral pH (7.0). In saltwater, the pH should be 8.2.

We recommend using a gravel washer to do partial water changes to remove fish waste, uneaten food, decayed plant matter, and other organic debris the power filter may have missed. This "detritus", if left in the tank, results in further lowering of the pH, cloudy water - and sometimes - a foul smell.

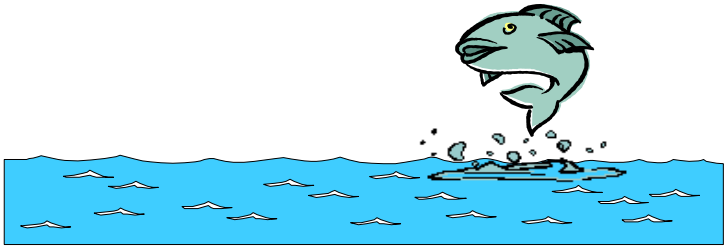
Using a gravel washer has another great benefit – it turns the gravel over and prevents packing. The nitrifying bacteria in your aquarium breathes oxygen. When the gravel becomes packed, oxygen can't get to most of this bacteria, and it will die. When this "good bacteria" is lost, the tank becomes unstable, the ammonia and nitrite will begin to rise, and the fish will be in trouble.

We recommend a partial water change of 20% - 25% every two - four weeks for a freshwater aquarium.

For a saltwater aquarium, a simple nitrate test will determine how much and how often a water change is necessary. However, a *monthly* water change is recommended to ward off any potential problems.

WATER CHANGE EQUIPMENT NEEDED:

- **Gravel Washer** (available in many sizes)
- **Bucket** (Label it "for aquarium use only")
- **Water Conditioner** (such as Fluval AquaPlus or API Stress Coat)
- **pH Test Kit**
- **Thermometer** (When adding water, the temperature of the replacement water should be the same or slightly warmer than that already in the aquarium. NEVER add cooler water! This will stress the fish and can lead to an outbreak of ick!)



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