

Basic Information on **Water and Water Changes**

Water is water, right?! Not so – read on to clear up any confusion you might have.

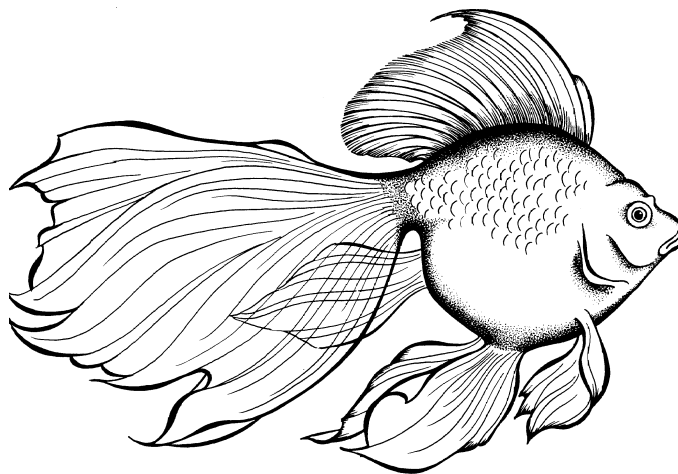
TYPES OF WATER

Spring water is by definition water from an underground 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. Most pet stores, including B&B Pet Stop, use city tap water in their tanks. Our fish are acclimated to this type of water chemistry, not the chemistry of spring water. After a period of acclimation, fish may become accustomed to spring water, providing the level of metal and minerals is acceptable. If you do water changes with spring water remember the chemistry of the water may change depending on the source. This can cause stress to your fish! A stressed fish is more susceptible to disease.

Distilled water is water that by definition has been boiled and the water vapor collected in a different chamber. All of the minerals and salts are left behind as the pure water evaporates. The end product is mostly pure water without the any of the necessary minerals and salts fish need to ensure good health. 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-mineralized water does not contain the minerals and salts that fish need. Again, it is too pure. (A device called a "Tapwater Purifier" made by Aquarium Pharmaceuticals is an example of this technology)

R O water (*reverse osmosis*) is water that has been



filtered though a membrane which allows only water molecules to pass. Again, the process is different but the results are similar.

The reverse osmosis water we have at B&B Pet Stop is first filtered through a sediment filter, then a carbon filter, then the membrane and finally through a chamber containing an ion exchange resin. This ensures the purest water available to our customers.

If you use any of the above mentioned filtered water for partial water changes in **freshwater**, you will need to add back minerals, salts, and electrolytes essential to fish-keeping. We carry a product to accomplish this task; R/O Right by Kent Marine. R/O Right is a mixture of electrolytes, salts, minor and trace minerals. For saltwater tanks these products are not necessary. Sea Salt mixes contain all the essential elements saltwater fish and corals need.

Whatever your water choices 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. As in distilling, many dissolved minerals, salts, etc., present in your aquarium remain and could 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**(everse)/**O**(smosis) 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 CHANGE THE WATER?

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 stress fish, causing a disease outbreak. Partial water changes on a regular basis - replacing old, low pH water with new higher pH water - usually achieves a more balanced neutral pH reading (7.0). In Saltwater the pH should be 8.2. (The salt that is mixed into the freshwater contains buffers that will raise the pH.)

We recommend using a gravel washer when doing partial water changes to remove fish waste, uneaten food, decayed plant matter, and other organic debris the power filter missed. This "grunge," 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. When you first set your aquarium up we talked about nitrifying bacteria. This type of bacteria breathes oxygen. When the gravel becomes packed, oxygen can't get to most of the 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% at least every other week 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.

WHY SHOULD I USE R/O WATER?

R. O. water is favored not because of what it contains, but 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 can cause excessive algae growth in both saltwater and freshwater tanks. If you've had a prob-

lem 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 sea-salt added.



Equipment Needed:

- **GRAVEL WASHER**
(available in many sizes)
- **BUCKET**
(Label it "for aquarium use only"!!!)
- **CHLORINE REMOVER**
(Aqua plus, Stress Coat, Novaqua, Chlor Out, and Mar Chlor, Bio-Coat, Bio-Safe)
- **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!)

PLEASE NOTE: This handout is meant to provide basic information only. For more information please consult our sales team.

