Common Water Quality Issues & Remedies

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Maintaining water quality is fundamental to aquarium fish health. Aquarium hobbyists are faced with the unique challenge of maintaining an aquatic environment capable of sustaining life. Poor water quality creates stressful and toxic conditions that weaken even robust fish. Improper growth, lack of coloration, susceptibility to disease, and other fish health issues may result without stable, healthy water conditions. Aquarium additives and conditioners are a convenient way to achieve proper water parameters and maintain fish health.

WHY WORRY ABOUT WATER?

An aquarium is an artificial environment requiring intervention from the hobbyist. Without hobbyist involvement, especially during the initial setup period, it is difficult to ensure water quality. Since water used for your aquarium may contain chemicals harmful to aquarium inhabitants, attention to water quality begins at the source. In addition to toxic chlorine and chloramine, your source water may also contain nitrate, phosphate, iron, calcium, silicate, and other chemicals in varying quantity. While your water may be suitable for drinking, it may not be ideal for aquarium use.

What is TDS?

A: TDS is the acronym for Total Dissolved Solids. It is a water parameter that takes into account the total amount of organic or inorganic compounds found in water, other than pure water.

KNOW WHAT'S IN YOUR WATER

Water potability or clarity is not a true indicator of water quality. Testing your source water is the only accurate way to determine what is in your water. Depending on your test results, you will need water conditioners or pH adjusters/buffers to achieve proper water conditions. While most aquarium fish are able to adjust to less than ideal water conditions, more sensitive species require precise conditions to thrive. Know what is in your source water so you can take the appropriate course of action.

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CHEMICAL: PHOSPHATE OR NITRATE

EFFECTS ON AQUARIUM: These chemicals are major plant nutrients. Buildup of these chemicals not only lowers water quality but can also affect aquarium health. Also, the presence of these chemicals in high concentrations often suggests high levels of decaying organic material. Excess waste materials not only pollute aquarium water but also acidify the water and affect aquarium pH. Aquarium inhabitants such as corals and invertebrates are sensitive to even low concentrations of nitrate. In marine aquariums, high concentrations of phosphate may precipitate dissolved calcium and magnesium ions. The precipitation of calcium and magnesium ions can inhibit coral growth and also lower buffering capacity and ultimately affect aquarium pH.

REMEDY: Phosphate removers such as our PhosPure® or PhosBan rapidly reduce phosphate levels in aquariums. Phosphate-removing filter media is another option in controlling phosphate levels. Liquid AmQuel+ is a versatile, multipurpose water conditioner that detoxifies nitrate. It also detoxifies ammonia, nitrite, chlorine and chloramine in your water, making it an extremely useful water conditioner to have on hand.

CHEMICAL: DISSOLVED SOLIDS (MINERALS)

EFFECTS ON AQUARIUM: The concentration of particular minerals dissolved in water can have various effects on water quality. Calcium, for example, influences water hardness and plays an important role in maintaining stable pH. If you are keeping freshwater fish that prefer acidic conditions, dissolved calcium can make it difficult for you to achieve desired pH levels. High concentrations of iron in your source water can stain the water and give it a cloudy, reddish coloration. This condition is more pronounced in aquariums with high oxygen content. Dissolved iron not only mars the aesthetics of your aquarium but can also lower water quality. To determine the purity of your water, use a total dissolved solids (TDS) tester such as the Hanna Instruments DiST 5 or use test kits to measure specific dissolved solids such as calcium or silicate.

REMEDY: pH conditioners such as Neutral Regulator condition hard water by precipitating calcium and magnesium in source water. However, for the most effective means of removing dissolved solids from tap water, it is best to rely on a water purification system like a reverse osmosis unit. The reverse osmosis unit forces water through a semi-permeable membrane to remove 90-99% of tap water impurities. The result is water that is free of minerals and other contaminants.

Recommended Products

pH Conditioners

RO Units

Phosphate Control

Test Kits

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