

FISH ARRIVAL GUIDE - Part 2

AQUARIUM PARAMETERS

AMMONIA

How can I control Ammonia in my fish tank?

Unlike some other parameters, any level of ammonia higher than zero is unsafe for fish. Ammonia is primarily caused by fish excretions, any dead matter (fish or plants) and excessive, uneaten food. Decaying matter releases nitrogen, which is converted into ammonia by bacteria.

Ammonia can also be caused by adding untreated tap water to your tank. A water conditioner must be added each water change to help combat any dangers from tap or bottled water.

Ammonia can cause many problems for fish, including:



NH₃

- Lethargy or floating at the bottom of the tank
- Gaspings at the water surface or inflamed gills
- Lethargy
- Loss of appetite
- Red streaks
- Inflamed eyes

If ammonia is allowed to rise above 0.050 ppm, fish will typically only survive a few days. For young fish or eggs, even levels below 0.050 ppm are potentially lethal, and can cause serious problems to immune system or health of adult fish.

To help keep control of ammonia levels in your tank, a 15-25% water change (based on a 20L tank size) should be carried out each week. You can mark the side of your tank at the level of the water change to make it easier for subsequent water changes. While tap water is typically safe to use, a water conditioner must be added for each and every water change.

NITRITE

How can I control Nitrite in my fish tank?

Nitrite is slightly more forgiving than ammonia, but can still pose a lethal risk to your fish.

Levels of nitrite as low as 0.5mg/l can cause long term damage if left untreated. Nitrite binds the oxygen carrying hemoglobin in blood, causing fish to suffocate regardless of oxygen levels within the tank. The gills of your fish can become damaged, causing great deals of stress and damage to their immune systems.



Symptoms of nitrite problems include:



NO₂

- Gaspings for breath at the water surface
- Listless behavior
- Brown gills or rapid gill movement

Additionally, high nitrite can leave your fish more susceptible to secondary diseases such as fin rot or ich.

To help combat nitrite levels in your tank, you can perform a large water change, add chlorine salt, increase aeration and reduce feeding. To prevent nitrite levels rising, change your water regularly, don't overfeed your fish and remove excess, uneaten food after each feeding.



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NITRATE

How can I control Nitrate in my fish tank?



Nitrate is less toxic than both ammonia and nitrite, but can still cause health problems for your fish. It is the by-product of Nitrospira (nitrifying bacteria) in a filter consuming ammonia. While toxic levels of nitrate vary greatly depending on the size and species of your fish, most hobbyists agree on an average maximum of 50 mg/l in a typical fish tank.

In young fish, nitrate levels as low as 20 mg/l can inhibit growth, cause immune system impairment and damage internal organs. In older fish, high levels of nitrate can impair the immune system, resulting in behavioral changes, blindness and can even be fatal.

Nitrate levels in your tank can often be maintained by simply doing a weekly water change, and using an appropriate water conditioner. Aquatic plants also consume nitrate, with fast growing plants being the most efficient. To add to the challenge of nitrate control, many fish will not show any visible symptoms until high levels of nitrate are already present. Once nitrates are too high for your fish, they may become lethargic and have open sores or blotches on their skin.

Unfortunately, fish may also die suddenly. An algae bloom in your tank can indicate high nitrate levels, although this isn't foolproof as especially new tanks can also experience a bloom with low levels of nitrate.



pH

How can I control pH in my fish tank?



pH, the 'weight of hydrogen', is the amount of hydrogen and hydroxyl ions dissolved in your tank water. A pH of '7' is a neutral pH - the ions are equally balanced. A pH lower than 7 is acidic and pH higher than 7 is basic. Ideal pH requirements depend on the type of fish you want to keep and for some species, whether or not you plan to breed your fish. A natural pH level which is the pH level the fish is accustomed to in its natural environment is usually required for successful breeding. Most fish can tolerate varying levels of pH if they are introduced to different levels gradually. A change greater than 0.4, over several hours, can cause pH shock in your fish, which can be fatal.

pH shock can cause your fish to become lethargic, stop eating and become relatively motionless. Some fish may even have excessive slime on their bodies, giving them an off-white appearance. If left to suffer pH shock for too many days, the fish will likely die. To maintain steady levels of pH in your tank, it's important to avoid large water changes unless absolutely necessary. Small, regular water changes are recommended. Chemicals which can greatly alter pH levels are inadvisable. For new fish, they should not be transported in a plastic bag for longer than 3 hours without adding a measure of water conditioner prior to transport. A reputable fish supplier such as PetWave will ensure that your fish has water conditioner added to a securely sealed breathable fish bag prior to shipping.

Typically, freshwater aquariums have a pH range of 6.5 to 8.0, and marine aquariums range between 7.9 to 8.5. You can monitor your pH with a test kit or pH meter.

Once your tank has successfully cycled and you have an understanding of the key elements, you can bring your fish home! Find out more about bringing fish home and quarantine in our next brochure: **Fish Arrival Guide - Part 3.**



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AQUARIUM GUIDES

Our Aquarium Guides are here to guide you and give you the inside scoop on taking care of your fish and maintaining your aquarium! Check out the rest of the series below:

Part 1: [Fish Arrival Guide](#)

Part 2: [Aquarium Parameters](#)

Part 3: [Fish Introductions](#) and [Fish Quarantine](#)

Part 4: [Tank Maintenance](#) and [Common Fish Illnesses](#)



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