

How to Cycle Your Aquarium

Cycling an aquarium through the nitrogen cycle is not an optional process.

To cycle a tank you need lots of patience as this process takes an average of 6 to 8 weeks, and you will need the following list of ingredients:

[Dr Tim's ammonia](#)

A liquid test kit, either [NT Labs fresh water](#) (recommended) or [API master kit](#).

A water conditioner – we only recommend Seachem Prime in [100ml](#) or [500ml](#) bottles, as axolotls are allergic to aloe vera and iodine which is contained in many others.

What is Cycling?

Cycling an aquarium through the nitrogen cycle consists of growing different colonies of beneficial bacteria inside your aquarium. These different types of bacteria grow in your tank's filter media and will filter out the toxic waste compounds that are constantly generated by your axolotl.

*All aquatic animals constantly release waste **ammonia** into their environment, and this ammonia needs to be filtered out by beneficial bacteria. The nitrogen cycle is a natural process that enables the ammonia emitted by your pets to be **filtered out** into safer compounds. Establishing the nitrogen cycle in your tank is **essential** before adding your axolotl to it.*

*The waste that is constantly being released by your axolotl largely consists of **ammonia**, which is toxic when it builds up. When you cycle a tank, you are establishing different types of beneficial bacteria in your aquarium filter media that are able to convert this ammonia into safer compounds. The process that these bacteria carry out is called the nitrogen cycle*

What Happens if I do not Cycle My Aquarium?

*Placing your axolotl in an uncycled aquarium would result in your baby living in its own waste, since there are no beneficial bacteria to filter it out. In an uncycled tank, the **ammonia** and **nitrite** levels would continue to rise to lethal levels, due to the axolotl constantly generating more of it.*

Any concentration of ammonia above 0 ppm is toxic to your aquatic pet, and will begin to induce stress, whether discomfort is visible or not. In addition, high concentrations of **nitrite** in your tank can result in suffocation, and **nitrate** levels above 20 ppm will begin to induce stress as well.

Given enough time, the building levels of ammonia and nitrite will reach toxic levels since axolotls are constantly producing more waste.

Why do we Dose Ammonia While Cycling if it is Toxic?

We dose ammonia in the aquarium while cycling because it is the food source for beneficial bacteria. Despite ammonia being toxic to other aquatic life, these bacteria thrive by constantly consuming the ammonia in your aquarium and converting it into safer forms.

Keeping a steady level of ammonia in the tank while cycling will allow the beneficial bacteria populations to grow larger until there are enough bacteria to eat greater amounts of ammonia and nitrite at one time. A fully cycled aquarium has grown enough bacteria to consume all of the ammonia generated by your axolotl as it is emitted, thus always leaving the ammonia and nitrite levels at 0 ppm.

Dosing ammonia in the tank is essentially simulating what it would be like if your axolotl was currently living in the tank. This way, the bacteria can build up a "tolerance" to the amount of waste that will be generated by your pet later on, once it is actually living there, and they will be prepared to consume all of it.

Steps to Cycling Your Aquarium

1. Dose ammonia in your aquarium in order to get a reading of 4 ppm.

If you are using [Dr Tims Ammonia](#), the dosage is 1 drop per litre = 2 ppm ammonia. You may poke a hole in the disposable lid in order to dose by drops easily, or use a dropper. It may be easier to begin cycling with 1 ppm ammonia at first to prevent nitrite from quickly rising off the charts.

2. Check your water parameters every few days until you notice that ammonia has decreased and the nitrite has risen.

When ammonia decreases in your tank, nitrite increases. Once you notice the presence of nitrite in your tank, it means your cycle has started! Beneficial bacteria are consuming the ammonia in your tank and converting it into nitrite.

3. Test your parameters every day with your [liquid test kit](#), and dose more ammonia whenever it falls below 4 ppm.

Once your cycle has begun, your ammonia will decrease daily. Whenever your ammonia level drops below 4 ppm, make sure you dose just enough to get it back up to 4 ppm. The end goal for cycling is to get 4 ppm of ammonia to completely decrease to 0 ppm in 24 hours.

4. Keep an eye on your nitrate level.

If at any point during cycling your nitrate level goes off the chart, a water change can be performed. However, it is recommended that you both temperature match and dechlorinate the water **before** adding it to your tank to avoid shocking your newly established bacteria. Generally, try to avoid water changes while cycling, unless you accidentally dose too much ammonia or your nitrite/nitrate level becomes too high.

Important: Your aquarium is fully cycled once it can process 4 ppm of ammonia into 0 ppm ammonia and 0 ppm nitrite in 24 hours 3 days consecutively.

Once your aquarium is cycled, you must do a **series of water changes to bring your nitrate level down to below 20 ppm**. Again, it is recommended that you both temperature match and dechlorinate the water **before** adding it to your tank to avoid shocking your newly established bacteria.

During the days that you perform these water changes, make sure you remember to **keep dosing ammonia daily up until the day that your axolotl actually goes into the tank**. The bacteria will begin to die if they are not fed ammonia every day. Keeping your ammonia level around 4 ppm each day provides just enough food to keep your bacteria alive while you do daily water changes to bring your nitrate down before putting your aquatic animal into the tank.

Once the nitrate level has been brought down to **below 20 ppm** with water changes, your axolotl may be added to the aquarium as long as ammonia and nitrite are both 0 ppm.

Problems Encountered While Cycling

Low pH

Make sure your pH always stays above 6.5 in order to avoid stalling the nitrogen cycle. If the pH in your tank is dropping too low, you may raise it naturally with crushed coral in a media bag in your tank or filter. A pH below 6.0 will cause the nitrogen cycle to cease completely.

Low Temperature

A warmer water temperature may help stimulate bacteria growth. You may temporarily install a heater to aid with cycling, but you will eventually need to slowly bring the temperature back down if you plan to use the tank for cold water species, like axolotls.

How to Speed up the Cycle

Used Established Filter Media

*The most effective way to quickly cycle an aquarium is to use filter media from an already established tank. You may inquire at local pet shops to see if they sell established filters or filter media, or you could try asking on local online groups. This filter media would need to be carefully acclimated to your tank in order for it to help with your cycle. **The bacteria on the filter are extremely sensitive to changes in environment and should be carefully drip acclimated to your tank.***

Bottled Bacteria Products

Bottled bacteria is hit or miss in regards to helping with your cycle. Most of the time, the shelf-sat bacteria are already dead before leaving the bottle, so they may not help at all. However, pet stores' claims that bacteria in a bottle can instantly cycle your tank or cycle your tank without ammonia are false. However, there is a tried and tested product on the market. [Message](#) us for further details.

DO NOT wash or replace your filter media while cycling. When you do wash your filter media in the future, make sure it is **never** with tap water. When filter media gets dirty, you may rinse it in old tank water only, as both the chlorine in tap water and the sudden temperature change will kill your bacteria. Never replace all of your filter media at a given time. If you have a filter that has **replaceable cartridges**, you will need to buy **reusable media**, such as coarse sponges, for the filter instead.

Conclusion

The nitrogen cycle is a natural biologic process that will occur in any aquarium given enough time. While the nitrogen cycle is becoming established, there will be high concentrations of ammonia, nitrite, and nitrate in the tank that would be toxic to any inhabitants. This is why it is our job to establish the nitrogen cycle in any aquarium before adding living animals, so it will then be safe for them to live in. If you are in need of any guidance on cycling after reading our guide, feel free to join our [facebook](#) where we provide one-on-one assistance to axolotl owners!

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