



## WHY IS IT SO IMPORTANT TO TEST YOUR AQUARIUM WATER?

At TANK, we are passionate about helping you to maintain a beautiful aquarium that is crystal clear and a pleasure to own. We also promote the responsible care of fish. Many diseases we deal with are the result of poor water quality and could have been prevented by carrying out regular simple tests.

Keeping Fish as a hobby or pet – is not really about the fish. It is about water maintenance. Good water usually equals healthy fish. Your aim is to reduce or eliminate any stressors.

A toxic spike is a stressor and can come on gradually over a period of time or suddenly overnight – especially in smaller tanks. Any toxic water can kill fish or make them unwell. Regular spikes can reduce the amount of years they are able to live.

**TOXIC WATER CANNOT BE SEEN OR SMELT – THEREFORE YOU MUST TEST REGULARLY TO BE ABSOLUTELY SURE YOUR TANK WATER PARAMETERS ARE PERFECT!**

You can test most parameters in your water but the following are the minimum that we recommend.

### **The Big Four**

**1. pH** – too high or too low pH can irritate or damage the mucus membrane (slime coat) of a fish therefore leaving it open to diseases (it is as if someone knocked out our immune system so we would catch every cold or flu – we might survive the illnesses but eventually we would be very weak or die). pH refers to how acid or alkaline the water is – most fish need a neutral pH which is 7.0. Do not follow just the colour on your test chart, you need to know that your tank is at 7.0. Use a reliable test kit. We recommend Sera due to the reliability and ease of use. It is important to understand that a pH of 6.0 is ten times more acidic than 7.0.

*What effects pH levels:*

The pH in tap water can vary considerably

Oxygen levels can effect pH

Carbonate hardness levels have a direct impact on pH

**2. Ammonia** – highly toxic, can result in gill damage and suffocation for the fish. Levels as low as 0.02mg/l (ppm) are dangerous. High ammonia levels are the result of insufficient water purification by bacteria. Causes can be new set ups or large water changes (over a quarter of the established water is changed), overfeeding, use of poor quality foods, overstocking, under filtering. The higher your pH the more toxic ammonia is therefore it is crucial you maintain 0 values.

**3. Nitrite** – is toxic, in high concentrations it acts as a blood poison. You must maintain 0 quantities in your tank. High nitrites can occur in new tank set ups (going through the nitrogen cycle), if the tank is over stocked, not enough water changes are conducted, too much food is added, poor quality food is used or the wrong type or size of filtration is attached to the tank. Again this is sure-fire way to poison your fish.

**4. Nitrate** – can be directly linked to algae problems, can also retard the growth of fish, plants and corals. Aim for as low as possible but keep under 20mg/l (ppm).

### **The rest help you maintain a beautiful aquarium**

**kH** – Incorrect carbonate hardness can be the cause of plants not thriving, algae problems including cloudy water and fluctuating pH values – remember rapid drops in pH is very dangerous for your fish. Regular maintenance of carbonate hardness can make aquarium keeping much easier. Aim for 5-10 in a cold or freshwater tank and 8-12 in a marine tank. Please note: it is common for tap water to be low in kH. Use a good quality kH buffer or speak to one of our staff for long term solutions. Do not confuse carbonate hardness with general hardness.

**P04** – High phosphates levels can negatively effect corals and create algae within tanks. Phosphates occur in over populated aquariums, or can enter your tank through poor quality foods, water, and plant fertilisers.

**gH** – The general hardness of water directly influences the growth of fish and plants. Aim for softer water conditions.



**Fe** – Iron is a very important nutrient for all aquatic plants – if you want a thriving planted aquarium – use Seachem’s plant products (we highly recommend them) and test regularly.

**O<sub>2</sub>** – Oxygen – Fish require oxygen – depleted levels lead to breathing problems for the fish – aim for 4mg/l.

**Cu** – can be toxic to fish, plants and invertebrates. It can be introduced as a treatment or come through via copper pipes. You must monitor copper levels carefully and not overdose if using as a treatment.

**Cl** – Chlorine damages the mucus membranes of fish even in small amounts, it also effects waste breakdown in the filtration system as it can kill off the useful bacteria. Use a good quality water conditioner.

**Co<sub>2</sub>** – Very important if you would like a magnificent planted aquarium

You can also test Specific Gravity (salinity), Calcium, Magnesium and Iodine.

### **Common Misunderstandings**

#### **But all my other fish look fine!**

Many fish can adapt to poor quality water if it occurs gradually over a long period of time. They may be able to live because they are hardier than others but you are forcing them to live in less than ideal conditions. As a result, they may die younger than necessary, or get to a point that they are no longer able to deal with the toxic environment and develop a disease. Often they carry diseases which they can cope with but new tank mates cannot.

#### **But my fish are swimming!**

Fish swim until they are very close to death and can no longer move about – don’t assume just because they are moving that their environment is good for them.

#### **But my fish are all really active!**

Overactive fish can indicate an ammonia spike – you should still test regularly.

#### **My water is fine – I’ve tested it!**

Most people who say this are referring only to the pH of the water and even then, many don’t understand how detrimental even slight fluctuations can be. You can not say your water is fine unless you know all the values and at what level they should be.

#### **But the tank has always been fine – I don’t understand!**

Australia is low on water, depending on where you live your council could be buying water from other councils therefore you are receiving different water through your tap. You can no longer rely on the water having the same properties. And more importantly, at any given time, your council can dump a heap of chemicals into your water – remember, they are making water safe to drink not safe for fish.

#### **There is nothing wrong with my water!**

Again, just because it looks clear doesn’t mean it is free from toxins. You cannot see what is dangerous to fish so therefore you must test and can’t assume everything is alright. People can often say this when they have only tested one or two values not realising that there are four main toxicity problems – Ammonia, Nitrite, Nitrate and pH.

#### **I have never had to test my water before!**

Water can go through toxic spikes, without you knowing, the fish have had to endure a toxic environment until you have conducted a water change which has rectified the situation. By testing your water regularly, you can combat any issues immediately. If fish are exposed regularly to toxins it can lead to slime coat damage and disease. Often the fish have a shorter lifespan. It can also stunt their growth or prevent their true colours from coming out. If you don’t test your tank – you are asking for trouble in the



long run. Many of our people who have had perfect tanks for years, may move their tank, conduct a big water change, forget that fish grow larger therefore produce more levels of waste, or add tap water that has had additional chemicals put into it from the council – any of these events can cause many deaths if you are not monitoring the water through regular testing. Testing can help prevent disasters.

A good test kit is inexpensive. Sera pH test kit can test 100 times - that works out at an average of 15c per test. A little bit of time and care can prevent fish loss and save you money in the long run. You can even track your results on the Sera website.

If you don't want to test or find it hard, bring your water in to us and for a fee – our staff can test and track the results for you.