



# AQUA-PICS

## Aquatic Synergy

## What is kH? “Carbonate hardness” and how to control kH in our aquarium

Rain or tank and many town water supplies around the world are very low or even void of Carbonate Hardness / kH. These are natural mineral buffers that control the pH of your water. KH is a measurement of Carbonates, Bicarbonates, borates and hydroxides in your water. If the kH is low, we get pH fluctuations that affect all aquatic life, this is tested more completely in marine systems as total alkalinity. Most retail kH test kits available only measure the Carbonate and bicarbonate compounds that are present to give a guide on the stability of the pH and this is more than adequate for our purposes.

### HOW DO WE CONTROL IT?

In a closed system like an aquarium or pond, the organic load builds up from fish waste such as the slime coating that fish shed and replace every day, the food they consume that comes out their rear ends and live plants breaking down etc. These things become Ammonia Acids in the water that the biological system in your filter is continuously breaking down into Nitrate (NO<sub>3</sub>), which in turn is an acidic process, so most aquariums tend to have a continuous slow pH drop. As an aquarium matures, we see the natural drop in pH and we traditionally try to control this with carbonate based mineral buffers sold to us as “pH up”. The problem is, most of them are temporary buffers and start breaking down after a few days causing the pH to keep dropping. We then need to add them again and again, repeating the cycle. This causes wide fluctuations in pH level until we see signs of stress or even death in our fish. This problem can be solved immediately by raising the kH or Carbonate hardness of the water with a more stable kH buffer. This can give you permanent pH control to make your life easier and your fish and plants healthier. Different species of fish naturally require different pH levels, so we need to add kH powders that have been buffered up or down and designed to lock your pH levels as required. If your kH is less than 4dKH or about 70ppm, your pH will be unstable. If you keep up your water changes and raise your kH appropriately a lot of your problems will go away, and you should never have a pH problem again!

***See our kH chart for what kH level will give you the best results for your fish!  
Available for free download on our website - [www.aquapics.com.au](http://www.aquapics.com.au)***