AQUA-PICS
Aquatic Synergy

What is pH? "Power of Hydrogen"

and how to control pH in our aquarium

The pH of water is measured and controlled by the balance of positively charged Hydrogen ions (H+) and negatively charged Hydroxyl ions (OH-) in a solution. With a pH of 7.0 (or neutral pH) the balance of Hydrogen & Hydroxyl ions are 50/50. If you raise the pH of your water you will lower the Hydrogen and raise the Hydroxyl ions. Of course, as the pH lowers the opposite happens, raising the Hydrogen and lowering the Hydroxyl ions. So with a pH of 6.0 you will have more Hydrogen, and at a pH of 7.5 you will have less Hydrogen.

So pH = Power of Hydrogen. Now you know why we call it pH!

HOW DO WE CONTROL pH?

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 breaking down into Nitrate (NO3) which is an acidic process, so most aquariums tend to have a continuous slow pH drop. In most new aquariums, the town water we add is often high in pH and to control this we are told to add mineral acids such as "pH down" to level it out at 7.0, or "neutral". As the aquarium matures and we see the natural drop in pH, 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 in your aquarium with a more stable kH buffer to give you permanent pH control. Water with a kH of less than 4dkh {or about 70ppm in the American scale} is vulnerable to pH drop. If you keep up your water changes and raise your kH in a community or goldfish tank to between 6 & 8dKH and keep it there with a good pH adjusted kH powder, you should never have a pH problem again.

See our kH information sheets to learn more about Carbonate Hardness. Available for free download on our website - www.aquapics.com.au