



AQUA-PICS

Aquatic Synergy

What is gH? “General hardness” and how to control gH in our aquarium

Rain or tank and many town water supplies around the world are very low or even void of General Hardness or gH. These are natural minerals that should be in water to control osmosis in your fish.

GH is a measurement of magnesium and calcium present in your water. If the gH is too low and not rectified by adding the appropriate conditioners, it will affect fish and other aquatic life in many ways. It will continuously stress the fish resulting in reverse osmosis, then the fish's body will push what little minerals he has left inside, out of his body and into the water! This affects the fishes development, depletes it's calcium for bones, it's immune system, and it's digestive system, leaving it susceptible to disease and general ill health. This causes severely shortened life span, lack of vigour, lack of colour, disinterest in spawning and high risk of contracting bacterial and parasitic diseases.

In nature, these minerals dissolve into the water as rain runs over or through the ground and rocks that contain mineral salts and trace elements, such as calcium, magnesium, sodium, copper, potassium, iodine, manganese, sulphates etc. Aquatic plants, fish and other aquatic animals have relied on these minerals for their well being for millions of years. So it makes sense to check the water supply you are using and add good quality conditioning mineral salts to your fish tank when adding water if required.

Don't forget that most town water supplies have added chlorine and chloramines to kill bacteria in water for human consumption. This will also kill off some of the good bacteria in your filter, so always use a chlorine / chloramine and heavy metal remover as well as a beneficial bacteria supplement when using town water supplies.

Primarily the gH test kits that are readily available from your retailer are designed to measure the magnesium and calcium that is present in your water and this is more than adequate for our purposes.

In a closed system like an aquarium or pond, the organic load also 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 (NO₃). Plants use nitrate, but when we have excess nitrates in our water, these organics also stress the fish, so keep the water clean with regular water changes and add the appropriate mineral conditioners to suit your species of fish.

For more info on beneficial bacteria see our chart on Nitrogen Cycles available for free download on our website - www.aquapics.com.au