



Carbon Dioxide -

WHY IS CO² REQUIRED?

Plants require Carbon in their diet, amongst other important elements such as Iron, Nitrogen and Phosphorous for growth. CO² is one of the required parameters for photosynthesis in plants. Plants convert this CO² into Oxygen for the fish. CO² in the aquarium converts into Carbonic Acid, which can lower the pH in the aquarium. This can be of advantage for controlling exact pH in the aquarium for certain fish for holding and breeding.

WHEN SHOULD IT BE USED?

Aquariums with a good number of plants and only a few fish would be deficient in free CO². If conditions in the aquarium are optimal for plant growth (see AQUOTIX handout on "Requirements for Growing Plants in the Aquarium") and the CO² is the limiting factor, then the use of CO² will be evident in the plants' enhanced growth, with larger, softer leaves. Limited CO² in the aquarium is shown in the reduction of the Carbonate Hardness (KH) over time. Plants can assimilate the Carbon from the KH, but this not the optimum method for the plants. Calcium deposits end up on the leaves and the plants do not grow as well as a result.

The pH in the aquarium can be raised by the addition of a KH generator. The pH can then be lowered to the desired level by the slow addition of CO². At AQUOTIX we strongly recommend the use of a pH controller to automatically adjust the pH by controlling the injection of the CO². This is the easiest way of lowering the pH to a desired level for breeding of difficult species of fish and plants.

WHEN NOT TO USE CO² - WHEN IS IT DANGEROUS AND WHEN IS IT WASTED?

Planted aquariums with a large number of fish would already contain a high level of CO². There are test kits available to find out if there is sufficient CO² in the aquarium. If there is any form of aeration in the aquarium, then this aeration will force out the CO² and therefore waste whatever you try to put in. This would include the agitation of the water in trickle filters. If there is any form of limiting factor for the plants' requirements, such as insufficient Iron, Nitrate or Light, then the need for other important elements, including Carbon, will also be limited. Therefore it is necessary to ensure that all other elements are in optimum quantities before adding CO².

At night, plants do not require CO². In fact they give off CO² themselves. A pH controller will recognise this and shut off the CO² once the levels are adequate. It is dangerous for the fish if CO² is left on the aquarium at night without any aeration to remove it.

Carbon Dioxide is not a miracle growth stimulant for aquarium plants. It is however one of many elements that will assist the growth of plants when used in conjunction with other elements in the right amounts and the right way.

If there are any further questions regarding Carbon Dioxide in the aquarium or any topic, then please contact a staff member at AQUOTIX. We're here to help all aquarists.