

Calcium Reactors: Advantages & Disadvantages

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As calcium supplementation has become more automated, one of the more sophisticated means of achieving the desired goal is the use of the [calcium reactor](#). Carbon dioxide (CO₂) is pumped, at a fixed rate, into a chamber filled with a calcareous (containing lime) media or Korallith. The CO₂ lowers the pH in the chamber to an acidic level, which dissolves the calcium into the water. The amount of calcium that is released is controlled by the flow rate of water through the chamber as well as by the rate of release of the carbon dioxide bubbles. This process also dissolves nearly all of the minerals and trace elements corals need to grow. The dissolved solution increases alkalinity (carbonate hardness) to stabilize pH while replenishing minerals (trace elements).



Advantages

Calcium reactors are popular for several reasons:

- Over the long term, this method is relatively inexpensive in that all that is needed are carbon dioxide and a calcareous media.
- When used properly, this method provides a very precise means of maintaining calcium levels within a system.
- There are now calcium reactors on the market that can handle even the largest aquariums, so it is possible to find a reactor for every aquarium size.

Disadvantages

Like all methods, calcium reactors are not without some drawbacks.

- These units are relatively expensive initially. In addition to the reactor itself, a properly set up unit will also require a carbon dioxide bottle, a regulator and needle valve, and a means for assessing pH.
- Care must be taken in the selection of the media. Some media may contain a lot of phosphate, so that as the media dissolves, phosphate is released, as well. Fortunately, phosphate-free media such as Korallith is now available.
- The amount of carbon dioxide being introduced needs to be closely monitored so that excessive carbon dioxide is not leaked into the aquarium. If this occurs, a constantly low pH reading will result. However, when a properly functioning needle valve and bubble counter are being used in combination with a pH monitor, there usually is no problem.
- Calcium reactors may increase alkalinity to excessively high levels if they are not monitored closely. This can be controlled by the addition of calcium chloride from time to time, or by adjusting the flow rate and the rate of carbon dioxide introduced.