# Calcium Reactors

*Drs. Foster & Smith Educational Staff*

**Calcium Reactors:**
**What They Do…How They Work** In nature, seawater bathes coral reefs in many minerals and elements. Of all the minerals and elements present in natural seawater, no mineral is consumed as quickly or in as large of amounts as calcium. Hard corals, which are the building blocks of the coral reef, demand large amounts of calcium to build their skeletons. Providing enough calcium to meet the demands of all the corals, invertebrates, and algae in a closed ecosystem creates a real challenge for the hobbyist.

To help you meet this challenge, consider adding a calcium reactor to your aquarium system. Calcium reactors automate the process of replenishing calcium as well as other minerals and trace elements.

A calcium reactor is essentially a chamber full of aragonite, which is the crushed skeleton of ancient hard corals. Aquarium water is pumped through this chamber along with pressurized carbon dioxide ($CO_2$). The $CO_2$ lowers the pH in the chamber to an acidic level, which dissolves aragonite into the aquarium water. In addition to dissolving the calcium, this process also dissolves nearly all the minerals and trace elements the coral used in order to grow. Therefore, a calcium reactor takes much of the guesswork out of adding trace elements to your reef aquarium, because it replenishes these minerals and elements in the near exact proportions that the corals need to thrive.

A calcium reactor is placed in the sump of a wet/dry filter. Everything you'll need for successful installation of such a system includes: a calcium reactor with a recirculating pump, a $CO_2$ bottle with regulator and solenoid valve, pH controller and probe, and the aragonite media. It is also wise to periodically check the accuracy of the pH controller with a pH test kit to ensure that the calcium reactor is working properly.

While there are considerable start-up costs associated with implementing such a system, a calcium reactor may prove to be a wise long-term investment by saving you time, money, and frustration while maximizing your coral growth.



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