

## Curing Aquarium Saltwater

### The advantages and disadvantages of premixed saltwater.

*By Jeremy Gosnell*

Q. I do biweekly water changes on my saltwater aquarium, though I hate curing saltwater. I use a reverse osmosis (RO) unit and just getting the water through the reverse osmosis system and into the curing vat is a time-consuming job. Then getting the specific gravity right -- it is all just a big headache! I've seen premixed saltwater solutions available and I've always wonder if I could use them exclusively for my water changes. Any idea's on this topic?

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A. The advertisements for most of the natural saltwater solutions on the market sound very promising. Many are said to be fully cycled, phosphate-free and nitrate-free, with a steady pH of around 8.2 and a specific density often around 1.027 or higher. Most are also said to have natural levels of iodine, magnesium, calcium and other elements needed for a successful reef aquarium. I was curious how well these solutions worked, so I decided to give them a try. My first observation when looking at natural saltwater solutions is cost. Depending on the size of your aquarium a simple 10 percent water change could cost from \$15 to \$45 or more. I assume the prices vary region to region, though I can't imagine they vary much. Here in Maryland, natural seawater can cost \$15 to \$20 for 5 gallons in contrast to the \$15 to \$20 dollars for a 55-gallon mix of synthetic sea salt.

I first tested one of the cheaper natural seawater mixes. This particular one cost about \$10 for 5 gallons. As advertised, it tested out at a pH of 8.27 and a density of around 1.026. It had no nitrates, and the calcium levels in the water were 380 ppm, more than acceptable for a reef aquarium. Alkalinity tested out at 172 ppm, which is a decent range for even a small polyp stony coral reef. Not testing the phosphates, I decided to use the water for a water change on my 20-gallon reef aquarium. All went well so I acquired another 5 gallons one week later for a second water change. The water tested out with nearly equal results. After about 17 days I noticed a large bloom of red slime algae (cyanobacteria). I rarely encounter such attacks, so I immediately began testing water quality. All variables were in line except for phosphates which were at 9 ppm or a little higher. I added a phosphate absorbing resin to the filter and went out to get more natural seawater. This time though I decided to test the seawater's phosphate value. It was an incredibly high 12 ppm. The natural seawater was raising my aquarium's phosphates and fueling the red algae growth.

To make a long story short, I found similar results with one of the more expensive natural seawater formulas. I personally think the most economical and efficient way of doing water changes is to cure your own synthetic seawater. I have talked with many aquarists, even professionals at public aquariums, about this and they all agree. Curing your own water, while sometimes taxing, will allow you to fine-tune the water to your specifications. It gives the aquarist control over pH, density and trace elements, and eliminates many of the questions about the water's origins or what dissolved organics or compounds may be within it.

I have found that I can cure quality synthetic seawater using only a deionizer filter to pass the water through and a chemical dechlorinator. Using a heater, refractometer and other test kits, in my experience, has allowed for high-quality water with minimal work. People often ask what I think the greatest technical achievement in saltwater aquarium keeping has been and I always answer "salt." The sea salt mixes of today, when used as directed, can supply you with very adequate results with minimal measuring and testing.

While there may be natural seawater blends that do not possess the phosphate problems I encountered, the cost of such products and the potential for unseen problems makes them difficult to recommend.