THE MOST ASKED QUESTIONS ABOUT pH and SALTWATER AQUARIUMS

PROPER pH

Q: What pH is best for marine fish and reef aquariums?
A: The pH of natural seawater (NSW) is usually 8.2 - 8.5. In marine fish and reef aquariums a pH between 8.2 and 8.5 is acceptable for most animals. It is best to maintain pH at 8.3.

Q: What should the pH be in freshly mixed marine salts?

A: A good marine salt will hydrate or mix to a pH of 8.2 - 8.5 within one hour after being mixed with clean freshwater.

INITIAL MARINE SALT pH

Q: Does initial high pH indicate a salt mix will buffer, keep or maintain proper pH longer?
A: No. Initial high pH has nothing to do with the pH holding abilities of marine salts.

pH and ammonia are interrelated. With higher pH, the more ammonia is in the solution. High, low or fluctuating pH is unnatural and can stress captive marine animals unnecessarily.

pH TESTING

Q: My pH test kit only goes to pH 8.5. How do I know if my marine salt has actually mixed to a high, excessive, dangerous, or unsafe pH?
A: Most pH test kits use indicator dyes that are accurate in a limited pH range. Most liquid dyes and powders (reagents) mixed into solution begin to indicate a color at pH 7.7 - 7.8. The color deepens as pH goes up. At pH 8.5 and above the color remains unchanged and accurate tests are difficult to obtain. A pH probe or meter that is properly calibrated can offer more accurate tests from pH 7.6 - 9.8. It is best to use marine salts that mix to the proper pH.

DECLINING pH

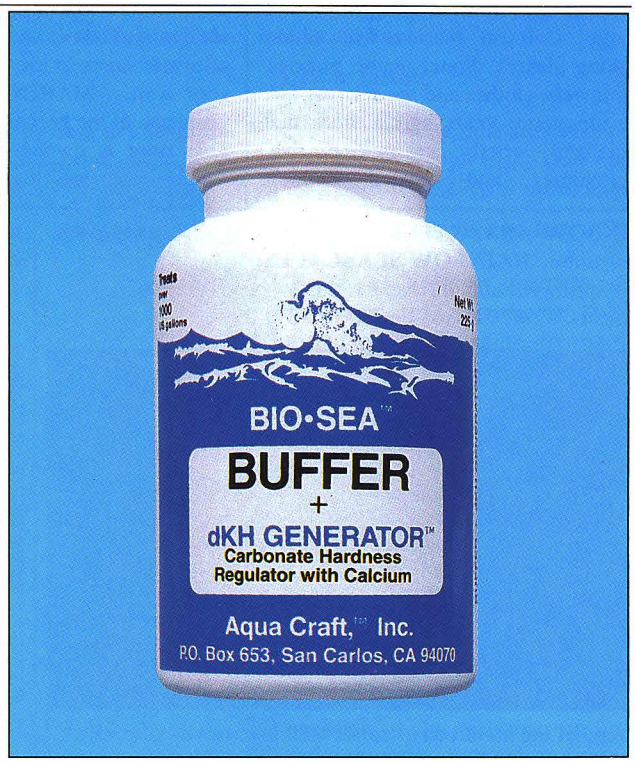
Q: Why does the pH go down in a marine fish or reef aquarium? What can I do to maintain proper pH?
A: The decline of pH in a closed marine system is natural. Waste ions build up and the initial buffer in marine salts is exhausted. Different brands of marine salts have varying amounts of initial buffer or ability to hold proper pH. You will need to make a partial water change and/or use a "buffer".

Marine aquariums that are poorly filtered, heavily stocked, overfed and/or receive infrequent water changes will drop pH.

Q: With proper filtration, feeding, stocking and making routine water changes, what other factors determine how long proper pH is maintained?
A: Each brand of marine salt contains some amount of initial buffer. **BIO-SEA® & Marine Environment®** are two brands of marine salts that have powerful initial buffers, mix to the proper pH and offer very good to excellent pH holding abilities.

pH BUFFERS

Q: Will using a "buffer" substitute for a water change?
A: No. Sometimes the words "buffer" or "super" or "extra" are misused and are not understood. Many so-called "buffers" are not much more than sodium bi-carbonate (baking soda). This will not maintain a pH of 8.3, even when mixed with tetra-sodium borate (beads of Borax® like hand cleaner).



Buffer + dKH Generator™ is a true-buffer that will adjust low or high pH to 8.3. This uniform particle size powder also contains a carbonate hardness regulator with calcium.

Buffer + dKH Generator™ is one of the safest ways to add calcium, regulate carbonate hardness and control pH in all marine fish and reef aquariums.

PROPER MARINE SALTS

It is obvious that using a marine salt that mixes to the proper pH and has a powerful initial buffer offers several advantages.
1) Control of initial pH when starting a new marine aquarium or making a partial water change.
2) Reduced stress to all captive marine animals by avoiding dramatic pH changes.
3) Reduced possibility of disease and mortality associated with pH shock or osmotic imbalance.
4) Ability to use standard pH test kits.
5) Creating a more natural like environment.
6) Maintaining the proper pH.

Two marine salts that mix to the proper pH and have very good to excellent pH holding abilities are **BIO-SEA®** Marinemix and **Marine Environment®** dual phase formula™.

With the additions of a very good pH buffer and a dechlorinator, **BIO-SEA®** is closer in composition to NSW than any other brand tested in the S-15 Report™.

Marine Environment® is a superior two part seawater formula that includes a dechlorinator, enhanced levels of calcium, sulfate, strontium* and a most powerful pH buffer. The second part (included in each package) is a separate "little bottle"™ that contains supplemental: iodide, iron, organically bound select trace elements, vitamins, molybdate, lithium, shock preventatives, stress reducers and various water conditioners. All of this is otherwise purchased separately.

* S-15 Report™ compares 15 different brands of marine salts to NSW.