

aquaLife® DeNitrex



- An ideal substrate for colonization by beneficial denitrifying bacteria
- Releases organic carbon molecules for the metabolization of nitrate
- Facilitates the removal of soluble phosphates
- Enhances water clarity
- Biodegradable
- 100% bio-based
- Reduces water changes and maintenance

AquaLife DENITREX is a biodegradable pelleted polymer for use in low nutrient managed marine aquaria. Consisting of polyhydroxyalkones, DENITREX not only provides an ideal substrate for colonization by beneficial denitrifying bacteria, it also releases organic carbon molecules required by these organisms for the metabolization of nitrate. DENITREX also facilitates the removal of soluble phosphates, and can be used as the sole means of phosphate removal in a nutrient-managed system.

AquaLife DENITREX should be used in a fluidized bed reactor, canister filter or similar device in which moderate water flow through the biopellets can be maintained. This reduces the build-up of organic matter within the biopellet matrix and helps to maintain an optimal denitrification rate. We recommend a pre-filter to remove particulate matter before it enters the reactor or filter chamber.

Dosage and Instructions: AquaLife DENITREX should be used in a fluidized bed reactor, canister filter or similar device through which moderate water flow can be maintained. This results in an optimal denitrification rate. We recommend a pre-filter to remove particulate matter before it enters the reactor or filter chamber.

Use 1 cup (237ml) **DENITREX** for every 50 net gallons of aquarium water. After installing the reaction vessel and initiating water flow through the biopellets, monitor dissolved oxygen and pH of the aquarium for the next 48 hours, as some systems may experience a slight decrease in both. Maintain protein skimming and normal water flow through the system to keep dissolved oxygen at saturation. Use an alkalinity booster, such as **AquaLife Simple Science Alkalinity** to increase pH, if needed.

- If the aquarium already has a low nutrient profile, with nitrate below 5 ppm, and phosphate below 0.02 ppm, use of DeNitrex should maintain or reduce these levels.
- If the aquarium is already overloaded with nutrients, that is, if the initial nitrate level is greater than 5 ppm or if phosphate is greater than 0.02 ppm, then use 10 grams of **DeNitrex** per ten net gallons.
- For optimal results, add **AquaLife Activate** according to label directions, to seed the biopellets with beneficial denitrifying bacteria. This greatly reduces the time needed to establish system equilibrium.
- Allow at least one month to observe reduction in aquarium nutrient levels. As much as two months may be required in the case of high nutrient concentrations. Supplemental additions of **AquaLife Activate** will facilitate the denitrification process during this time.

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Product Rationale: The waters surrounding tropical coral reefs are among the most nutrient poor to be found anywhere in the sea. Corals and other reef organisms have evolved under these nutrient poor conditions, and will not thrive in aquaria unless a low-nutrient environment is maintained. Further, the presence of excessive nitrate and phosphate, the two nutrients of most concern, is typically accompanied by excessive growths of filamentous algae, diatoms and cyanobacteria. Not only are these organisms indicative of unsuitably high nutrient concentrations, they spoil the aesthetic appeal of the reef tank.

The sequestration, via metabolic processes, of nitrate and phosphate by certain strains of bacteria requires a suitable organic substrate to "fuel" bacterial metabolism. AquaLife DENITREX supplies that organic substrate in solid form, releasing it into the aquarium environment at precisely the rate it is consumed by the bacteria. Numerous aquarists have learned that this method is superior to dosing schemes using vodka or another organic substrate added periodically by the aquarist. Furthermore, the use of solid DENITREX biopellets significantly reduces maintenance chores, compared to hand dosing.

Nitrate (and phosphate) removal occurs via more than one physiological pathway, but in all cases the nitrate-rich bacteria themselves are either consumed by filter-feeding aquarium inhabitants or are removed via the protein skimmer. Maintaining adequate protein skimming is essential to any reef aquarium maintenance program.