



## PHOSPHATE CLEANSE

### What is AquaDocs Phosphate Cleanse?

AquaDocs Phosphate Cleanse is a unique, natural occurring ferric Oxy Hydroxide material specifically produced for efficient removal of phosphates, arsenic, silicates, lead and other heavy metals from fresh and salt water.

AquaDocs Phosphate Cleanse has been found to be one of the most efficient products to remove phosphate from water. AquaDocs Phosphate Cleanse has also been found to continue to remove phosphates at lower concentrations and has a higher maximum holding capacity than most generic brands.

#### **What are phosphates?**

Phosphates are naturally occurring inorganic salts, which are found in all living things. They can therefore be introduced into the aquarium from a wide range of sources such as; from fresh water supplies for those not using R.O. water; from decomposition of uneaten food or fish waste; from death of plants and animals in the tank; from impure aquarium chemicals such as cheap activated carbon: or by slow release of absorbed concentrations from rocks and tank substrates.

For other aquarists with fresh or salt water tanks the main drive behind the purchase of AquaDocs Phosphate Cleanse is to control the growth of nuisance algae within their aquariums, which can in some cases overrun plants and expensive corals spoiling the aesthetics of the tank and in extreme cases killing its inhabitants.

Phosphates are food for nuisance algae along with other nutrition such as nitrates and light. The problem often becomes worse or apparent when changing to more intense lighting.

There is no simple way of controlling excess algae, as there are a number of factors involved, however in most aquarium situations the limiting nutrient ion in

terms of algae growth is phosphate.

Phosphate elimination is therefore the single most effective means of algae control to the aquarist.

### **How much should I use?**

Each 1 LB pack of AquaDocs Phosphate Cleanse can effectively treat 455 US gallons of saltwater and approximately 900 US gallons of freshwater. Start your phosphate reduction gradually using 1 gram of AquaDocs Phosphate Cleanse for every 1 US gallon. After the initial 2 weeks of use you may increase the amount of AquaDocs Phosphate Cleanse used to 2 grams per gallon for more aggressive phosphate removal.

Many people take this stated volume, often on the smaller packs, and see that it is the same size as their own tank. They then hand over their money, take it home and pop it into their tank to be forgotten about for the next few months before beginning the cycle again.

In reality most people starting to use phosphate removers for the first time will probably have concentrations of phosphate in excess of 5 ppm in their systems and even more bound up within the rocks and media requiring a pack size suitable for removal of 3 ppm from 2-5 times their tank size or more to bring the initial concentration under control.

The reality for someone blindly using AquaDocs Phosphate Cleanse is that they start off at 5 ppm and reduce it to 4 ppm by using the wrong sized pack, which they replace after 2 – 3 months by which time the concentration has returned to or exceeded its original level.

Reduction to 4 ppm was a total waste of their time and money, as the phosphate levels must be ideally reduced to almost zero or at least below 0.01 ppm as PO<sub>4</sub> (0.03 as P) in order to starve out the algae.

### **How do I test for phosphate?**

Unfortunately in our opinion there are only two testing kits on the market that are sensitive enough to measure phosphate concentrations accurately down to the required levels. Other tests will indicate a zero reading but this is not necessarily the case when retested with a more sensitive kit.

The Hanna Colorimeter test kit is an easy to use and accurate test kit. The easy digital readout really helps clarify what the test result truly is, removing any ambiguous results that may happen with the human eye. The second

recommended test kit is by Salifert, which is also sensitive at low levels but in my opinion still makes it difficult to differentiate between the colours due to the poor optical clarity of the sample container.

### **What level should I have in my aquarium?**

In saltwater aquariums and reef aquariums in particular we would recommend that your phosphate level be maintained at between zero and 0.05 ppm (PO<sub>4</sub>). Some test kits may express the results as the concentration of phosphorous ion P and in this case it should be below 0.015 ppm (P).

In freshwater aquariums, AquaDocs Phosphate Cleanse is twice as effective for removal of phosphate and we are generally using the media for controlling nuisance algae. We recommend that you keep the level below 0.1 ppm (PO<sub>4</sub>) or 0.03 ppm (P).

### **How do I use AquaDocs Phosphate Cleanse?**

There are several ways of using AquaDocs Phosphate Cleanse depending on the aquarium size or the budget.

Smaller amounts of AquaDocs Phosphate Cleanse, which are often used by people with smaller tanks or those first starting to control phosphates contain a net sock into which the media can be placed.

The way that AquaDocs Phosphate Cleanse works is by chemical adsorption onto the surface of the media and hence for it to work properly it is necessary for water to flow around and through the pouch. It is also recommended that the media be regularly disturbed to prevent compaction and expose new areas of the surface to the general water flow.

The second way of using AquaDocs Phosphate Cleanse is in a conventional canister filter. Put the fore mentioned sock straight into the canister.

The third, the easiest, and the most effective, but most expensive method, is to incorporate the Phosphate Cleanse in a suitable reactor chamber. Fluidization keeps the media constantly moving and the water column in constant contact with the whole of the surface area. Be careful not to over fluidize it and send the whole contents into the aquarium.

## **Do I wash the media first?**

***ALWAYS RINSE MEDIA BEFORE USE.*** For use in a reactor we recommend that you wash the media in R.O. water prior to use to remove the fines, which would end up in the aquarium.

## **How long does it last?**

A great, but tricky question. If used for initial higher levels, having done its job, it could become saturated within a few days or may last for months once the aquarium has reached zero.

Unfortunately there is no substitute for regular testing and changing of the media once levels start to rise.

In a canister or fluidized filter, when used at the correct levels, the return water back to the tank should always read zero or at least be less than the background level within the aquarium, (assuming that that is not also zero).

It is possible to reduce the flow through the reactor until the return water measures zero phosphate or to increase the amount of AquaDocs Phosphate Cleanse to achieve the same result. As soon as the media starts to become loaded the level will rise to the same level as within the whole system and should be changed.

## **How long will it take to work?**

AquaDocs Phosphate Cleanse will work immediately in reducing phosphate concentrations in the aquarium. How long will it take to remove the nuisance algae is what people want to know which is harder to answer.

Most people if they use the media properly and reduce the phosphate concentration to zero will see an immediate reduction in many types of algae however some others may take several weeks before they disappear altogether but will come back if the strict regime of monitoring and media replacement is not adhered to.

## **When should I start to use AquaDocs Phosphate Cleanse on my new tank?**

It is especially important that you use AquaDocs Phosphate Cleanse on your new tank from day one to prevent the phosphate in the water and from any dieback from being absorbed into the rock and tank substrates. Once it has been absorbed it is a lot harder to reduce the tank concentration to zero as the phosphate continues to slowly leach back out over time feeding local algae populations.

People with planted freshwater tanks will find that it can take a surprisingly long time to reach equilibrium but having achieved it can expect healthy weed free growth of their plants rather than continual dieback with subsequent phosphate release from concentrations stored in the leaves.

Once established AquaDocs Phosphate Cleanse can be used continuously on your tank, as it has no harmful effects on its inhabitants.