



THE AQUATIC OXYGENATOR™



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aquakler.com
geoponicsllc.com

Environmentally Safe Aquatic Treatment

AquaKler™ is a unique chemical compound that slowly releases oxygen into both the sediment and water column of aquatic bodies and incapacitates certain nutrients. The use of AquaKler™ has been found to clarify water, increase dissolved oxygen levels and immobilize phosphorus, thus drastically improving aquatic ecologies.

When organic wastes of animals and other sources (pollutants, dead algae, etc.) accumulate in the sediments of ponds and cause increases in biological oxygen demand (BOD), the natural ecological cycle begins deteriorate. For example, when these same organics are inadequately aerated the release of harmful gases such as hydrogen sulfide (rotten egg smell) and methane are facilitated, both of which can also be toxic to aquatic animals and plants.

AquaKler™ assists in the process of energizing natural microorganisms with needed dissolved oxygen to transform biodegradable compounds in contaminated sub-aqueous (sludge) contents to harmless end materials. Almost all organic compounds can be degraded biologically if sufficient time and proper physical and environmentally friendly chemical conditions are provided. The most important of these is dissolved oxygen. As a result, AquaKler™ is a viable treatment for natural aquatic restoration due to its unique patented formulation, which increases the speed of the degradation process in an environmentally proactive way.

The AquaKler™ Process

Phosphorus release from bottom sediments is an important source of nutrient enrichment in many lakes and sedimentary basins. However, high phosphorus concentrations are often associated with the degradation of aquatic environments, fish kills, reduced recreational use of freshwater lakes and most importantly, the fresh water reserves for all living creatures. Internal phosphorus recycling from lake bottoms to the water column can initiate and sustain eutrophication (nutrient pollution). Thus, the control of eutrophication depends on both phosphorus retention in the bottom sediments and phosphorus removal from the water column.

Phosphorus recycling from the bottom sediments into the water column involves the translocation process of sediment phosphorus into the overlying water column. AquaKler™ can affect this release. Meaning, AquaKler™ can induce Phosphorus precipitation from the water column and enhance sediment adsorption.

The release of Phosphorus into the water column can be regulated through the oxidation state of some metals. As AquaKler™ slowly releases dissolved oxygen, these metals can adsorb phosphorus and increase sediment retention. However, when anaerobic (without oxygen) conditions are present, these metals lose their binding capacity and phosphorus is released into the water column which can cause serious ecological problems.

Because phosphorus release from lake sediments is oxygen dependant, AquaKler™ can dramatically control internal phosphorus loading in eutrophic lakes. Also the AquaKler™ slow release oxygen process enhances oxidation potentials at the sediment-water interface, increasing binding surfaces for the phosphorus in the sediment, thus immobilizing it. Hence, AquaKler™, which was developed as a slow release oxygen for aquatic bodies containing high levels of Phosphorus, can assist lakes to return to a stable and healthy aerobic environmental cycle.

For more information about AquaKler™ and how it is changing the way we treat our lakes and ponds, please contact Geoponics directly or one of its authorized distributors.



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