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PRODUCT DATA SHEET AmQuel+®

Instant Water Detoxifier

AmQuel+ is a remarkable new discovery that is making fresh and saltwater aquarium and pond keeping much safer and simpler, particularly for the beginners who are novices in knowing how to establish new aquariums and ponds through the first months, often failing.

- AmQuel Plus is nontoxic
- AmQuel Plus removes all forms of ammonia.
- AmQuel Plus removes nitrites.
- AmQuel Plus removes nitrates.
- AmQuel detoxifies the entire Nitrogen Cycle
- AmQuel detoxifies all Biological Filtration
- AmQuel Plus does not affect the pH.
- AmQuel Plus does not interfere with the beneficial nitrifying bacteria of the Nitrogen Cycle and Biological Filtration or their food sources.



PRODUCT DESCRIPTION:

Use AmQuel+ for new aquariums and ponds, for water changes, overcrowded aquariums and ponds, the control of all toxic nitrogen compounds commonly found in water while the nitrogen cycle is established., as well as afterwards as nitrogen compounds accumulate in the aquarium and pond water. The foremost benefit of using AmQuel+ in aquariums and ponds is in its total detoxification of all phases of the Nitrogen Cycle (see Kordon Article Biological Filtration and the Nitrogen Cycle) while the Cycle goes through to completion without any interferences in aquariums and in its water filtration.

It is recommended that AmQuel+ be used with its companion product Kordon NovAqua+, which does what AmQuel+ cannot do that are important in safely conditioning aquarium and pond water for fishes and aquatic invertebrates.

PURPOSE AND BENEFITS

AmQuel+ is the latest development in state-of-the-art water conditioning technology and is the next step well beyond what the original **AmQuel** product does. In the section in Kordon Product Data Sheet "About Water Conditioners" find "Comparison between Amquel and AmQuel+" to see the similarities and differences. AmQuel+ has several unique fundamental purposes and benefits for all kinds of aquarium and pond keeping.

- A primary purpose in aquariums and ponds is to protect aquarium and pond fishes and invertebrates by quickly eliminating (actually detoxifying) the harmful components of the biological nitrogen cycle - ammonia, nitrites, and nitrates without slowing the nitrogen cycle (see **KPD-64** "Biological Filtration"), or interfering with the beneficial bacteria involved, or depriving these bacteria of their food.
- Also, in overcrowded aquariums and ponds where waste products from the fishes, etc., quickly collect, it rapidly detoxifies toxic organics.
- Another purpose is to detoxify all organic nitrogen compounds that accumulate in the aquarium and pond water over time, including noxious pheromones released by fish and aquatic invertebrates to signal and repel each other. This is specially important for



- reducing the frequency of needed water changes. Many larger freshwater and saltwater aquarium fishes release pheromones to establish territoriality and repel other fishes. This is particularly true in fresh water for cichlids and in salt water for plectognath fishes (triggers, filefish, puffers, cowfish and boxfish).
- An additional advantage is its purpose in treating tap water when water is added or water changes are made to detoxify chlorine and chloramines and its components (chlorine and ammonia) and to make the water safe for aquatic life free of these lethal toxins. (see in "**About Conditioners**" the section on "Problems When Using Water Conditioners...". It does this on its own or in conjunction with Kordon NovAqua or NovAqua+ if either is also used in water conditioning.

Among AmQuel+ benefits are that it is easy to use and equally effective in fresh and salt water, and it does not affect the beneficial bacteria of the biological nitrogen cycle. AmQuel+ is compatible with all water conditioners and with all aquatic life - including live rock and reef tank inhabitants. Other benefits are that AmQuel+ does not affect pH (acidity and alkalinity), and does not discolor the water. AmQuel+ has a long indefinite shelf life expected to be many years.

Note: Amquel+ has an acerbic odor, but does not affect aquatic life, and the odor quickly disappears in use.

AMQUEL+ - HOW IT WORKS

See **How Kordon's AmQuel - the original ammonia remover - works**. AmQuel+ is similar in its actions, but with a different formula, and will be described in greater detail when the patents pending are approved.

SPECIFICATIONS

Patents are pending for the formula and it is not available until the patents are approved.

DOSAGE WITH LIQUID AMQUEL+ PRODUCTS

For control of chlorine alone in public water supplies (e.g. tap water) add one teaspoon (5 ml) per 100 gallons of fresh or salt water to remove well in excess of what is in public water supplies (public water supplies have 4 ppm or less chlorine) AmQuel+ removes 33 ppm chlorines per regular dose (one teaspoon per ten gallons).

For all other purposes use measurements in proportion to a "Standard Dose" of AmQuel+ , which is 1 drop per gallon or one teaspoon (5 ml) per 10 gallons of fresh or salt water, or one liquid ounce (25 ml) per 60 gallons of water, or one cup (8 liquid ounces = 200 ml) per 480 gallons of water, or one pint (16 liquid ounces = 400 ml) per 960 gallons of water. For other measurements estimate the amounts needed, such as 1/4 teaspoon for 2.5 gallons of water, etc. For further information on dosages see Kordon Article Standard Dosages for Liquid Treatments.

To remove chloramines(chlorine and ammonia combined) out of the tap water obtained from public water supplies, add one Standard Dose (see definition above) to the water to break the bond between the chlorine and ammonia, to remove all the chlorine, and to remove all ammonia that may be in public water supplies. Only one dose is needed for removing all chloramines and their components from public water supplies.

To control the toxic organic nitrogenous compounds of ammonia, nitrites, and nitrates, and other toxic organics that build up in aquariums and ponds from the excretion of body wastes by fishes, invertebrates, bacteria and other aquatic organismsstart with a Standard Dose (see definition above). This Standard Dose will remove (detoxify) at least 1.2 mg/L (= approx.1,2 ppm) of all ammonia compounds, at least 2.0 mg/L (=2.0 ppm) of nitrites, and at least 13 mg/L (=13 ppm) of nitrates. **We recommend only one standard dose per 24 hour period.**

The removal of these compounds will happen within five minutes, or slightly longer for ammonia at a higher pH above 7.5. It is important to understand that the amounts of organic compounds removed may vary with



differing water conditions. The amounts indicated above are the minimums that AmQuel will detoxify, and what is removed may be up to several times higher. Use accurate test kits to check how much of each compound is being removed when using multiple doses (see the section in **About Kordon's Water Conditioners** on "Water Quality Test Kits" under "Problems When Using Water Conditioners..." Be aware that test strips may be insufficient to provide accurate readings; check liquid and powder reagents to be sure that they are not out-of-date.

STABILITY

So far as is known for this new formulation, AmQuel+ is stable indefinitely when stored in a cool, dark area away from heat and direct sunlight. Amquel+ should be kept tightly closed when not in use.

COMPATIBILITIES

AmQuel+ is harmless to plants, fishes, invertebrates, and other aquatic life forms. This product is safe for use in aquariums and ponds and will not interfere with biological filtration or its bacteria. When AmQuel+ detoxifies ammonia, nitrite, nitrate and other organic compounds, it breaks the links of molecules apart. The bacteria do not know the difference and eat the parts, just as they would the whole original compounds. AmQuel+ may affect the dyes in certain types of cotton fabrics. This happens for the same reason that Ammonia test kits using the Nessler reagents do not work with AmQuel or AmQuel+. These products reduce the coloring agents used in the Nessler reaction test kits, and apparently in a very small selection of cotton based fabrics.

CONTRAINDICATIONS

AmQuel+ should not be added to water containing active, therapeutic dosages of chemical dyes such as methylene blue, acriflavine, malachite green, and potassium permanganate, since AmQuel+ will interfere with their proper performance. Combining Amquel+ with these dyes will not result in toxic chemical by-products. AmQuel+ can be useful in those instances when it is desirable to terminate a treatment with a chemical dye. This is particularly useful with potassium permanganate because Amquel+ (and AmQuel) detoxifies the potassium permanganate and removes the coloring in the water instantly.

AmQuel+ is compatible to use with all water quality test kits except for the ammonia test kit that uses Nessler reagents that read in shades of amber or yellow, and the oxygen test kit that uses Winkler reagents. Residual AmQuel+ and its reaction products are incompatible with the Nessler-and Winkler type reagents, resulting in false, high ammonia and low oxygen concentration readings. Ammonia test kits using salicylate-type reagents are appropriate for accurate test results. Excellent examples of high quality salicylate test kits with technical grade reagents are Kordon's AquaTru Test Kit #35970 for salt water and #35980 for fresh water (see the section on Kordon AquaTru Test Kits). Any oxygen test kit other than those using Winkler's method is compatible with AmQuel+. For further information on the effects on medications and test kits see in **About Water Conditioners** "Problems When Using Water Conditioners..."

TOXICITY

Amquel+ is non-toxic when used as directed. Many hundreds of kinds of freshwater and marine fishes, aquatic invertebrates and plants have been exposed to multiple full doses of Amquel+ during extended test periods and general use with no toxic effects. Amquel+ does not reach toxic levels even in cases of accidental or purposeful overdosing. AmQuel+ is non-toxic to humans and no special precautions are necessary in handling this product.



The only toxicity to consider for AmQuel+ is that per standard dose it is removing 0.03-0.04 ppm oxygen from the water during the first minutes of use as part of its reaction. Under pond conditions and most aquarium conditions this is not a problem, even when fairly crowded with fishes. The only times that it has been found to be a problem is in overcrowded aquariums in which water circulation is from a filter for which the water outlet is a "waterfall" type spill of the water into the aquarium. Such filters only aerate the top water layer in the aquarium and are not getting enough oxygen throughout the aquarium. For this reason the recommendation is that only one dose of AmQuel+ is used per day, which then does not affect fishes in aquariums with "waterfall" type filters. A general recommendation is that for those aquarists having this type of filtration, they have additional aeration, such as from airstones (see Kordon Mist-Air Airstones) situated near the bottom of the water volume in the aquarium. These are more capable of circulating oxygen in the water throughout the aquarium.

PURE DRY AMQUEL+

AmQuel+ is available in bulk pure dry form for commercial and professional use. See the section on **AquaVet** for listings and further information.

DIRECTIONS FOR USE

As a general rule, when using tap water in which chlorine and chloramines are present, but not nitrites, nitrates or other organics -- then it is safe to use the less expensive Kordon AmQuel. If there is the possibility of nitrites, nitrates and other organics being involved, such as from the Nitrogen Cycle (see Kordon Article: Biological Filtration and the Nitrogen Cycle) , then Amquel+ is recommended.

AQUARIUMS AND PONDS

Add AmQuel+ to the water at the recommended dosages as described above. Since AmQuel+ rapidly spreads through the water, no special agitation is needed. As described in **About Kordon's Water Conditioners** under "Which Water Conditioner Should be Used for What..." not all the conditioning needed for water is done by Amquel+ or any one other single water conditioner. When new water is added, usually Amquel+ should be used with Kordon's NovAqua (see **KPD-41**) or NovAqua+ , as explained in **About Kordon's Water Conditioners** under "Which Water Conditioner Should Be Used for What". It is recommended that both AmQuel+ and NovAqua+ be used to fully condition new water, such as out of the tap from public water suppliers.

FISH AND INVERTEBRATE SHIPPING AND HOLDING AmQuel or AmQuel+ and NovAqua and NovAqua+ should be added to tap water used for short-term shipping fish and invertebrates. For long-term shipping of more than one day AmQuel+ should be used with NovAqua+, because of the build up of toxic organics from excretion. If the fish are crowded or prone to bump into or abrade each other, PolyAqua Fish Protector (see **KPD-32**) should be added as well to both the shipping water and the aquarium or holding tank after shipments are received.. NovAqua and AmQuel, when used together, will reduce stress, osmotic and pH shock, probability of infection, and neutralize ammonia, chloramines, chlorine and heavy metals. When Amquel+ is used with NovAqua+ it increases the protection by neutralizing nitrites, nitrates, and other organics. PolyAqua Fish Protector should be used to handle abrasions, bruises, and frayed fins of fishes.

FISH AND INVERTEBRATE FIELD COLLECTIONS

When using water from natural conditions for field collecting, the use of AmQuel or Amquel+ in holding and shipping water will reduce stress in fishes and invertebrates due to ammonia intoxication. If fish will be held for days in containers, AmQuel+ should be used, because it will remove (detoxify) nitrites and nitrates as well. In addition, PolyAqua Fish Protector should be used in holding and shipping water for optimum protection against abrasions, bruises, and frayed fins in fishes