

EC-504 POND CLEANER

CONTROLS ALGAE, POND SCUM, ODOR & SLUDGE IN LAKES & POND



EC-504 natural pond cleaner is formulated for use in controlling pond scum, algae and odor that commonly plague lakes and ponds. EC-504 works in the entire water column, as well as bottom sludge layers. EC-504 is environmentally safe and is not harmful to humans, plants and animals. EC-504 is easy to use. Simply apply at regular intervals or as required during the algae season. EC-504 is NOT an algaecide and no applicator's permit or license is necessary.

BENEFITS

- Removes existing algae and prevents new growth.
- Breaks down organic and fecal waste in the water.
- Clarifies lake or pond water.
- Eliminates ammonia and organic odors.
- Enhances uptake of nutrients by grasses.
- Improves the aquatic environment for fish and wildlife.
- Reduces ammonia salts and other contaminants.
- Safe for humans, animals, fish and aquatic plant life.

PRODUCT COMPARISON

	EC-504	COPPER SULFATE	DIQ UAT
ALGAECIDE	No	Yes	Yes
CONTROLS ODOR	Yes	No	No
REDUCES SLUDGE	Yes	No	No
BENEFITS TURF	Yes	No	No
ENVIRONMENTALLY SAFE	Yes	No	No
PERMITS REQUIRED	No	Yes	Yes
ALL NATURAL	Yes	No	No

HOW EC-504 WORKS

When EC-504 is applied to the water phase, algae blooms are controlled through competition. EC-504 remove nitrogen compounds from the water column faster than the algae and, as a result,

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the algae are starved out of existence or bloom is inhibited. In addition, EC-504 degrades accumulated organic waste, top scum and bottom sludge for use as carbon sources. The overall result is clean, clear water, free from algae, odors and sludge. EC-504 is designed to treat the cause, not the effect.

TYPICAL QUESTIONS

Will EC-504 harm turf?

No EC-504 actually enhances turf health. EC-504 also improves the water quality of irrigation ponds by breaking down ammonia salts and other contaminants before they reach the turf.

Is EC-504 safe for fish?

Yes. By removing ammonia and nitrite from the water, EC-504 enhances the aquatic environment for fish and other wildlife.

How does EC-504 control odor?

EC-504 addresses the cause of the pond odor e.g. ammonia and slow decaying organic matter. By accelerating and stabilizing the natural nitrogen conversion reactions, EC-504 greatly reduces or eliminates the release of ambient ammonia. Rapid digestion of accumulated organic matter eliminates foul odor.

How does EC-504 clarify water?

EC-504 reduces the algae population and digests floating and suspended organic matter that clouds the water column.

Will EC-504 clear a pond of existing algae?

Yes, however, EC-504's mode of action is to "starve" the algae by out-competing for a primary nutrient, nitrogen. Therefore, it is most effective when used as a preventive maintenance program, before algae start blooming.

Is EC-504 compatible with algaecides or pesticides?

No. Algaecides work well in the short term. Algaecides kill biomass and, as a result, fewer nutrients are digested and the potential for long-term algae problems increases

Is EC-504 an algaecide?

No, EC-504 is not an algaecide. EC-504 is designed to digest the algae's primary growth nutrient, nitrogen. It will not kill living biomass. EC-504 will help to re-establish a healthy, balance aquatic ecosystem. EC-504 is non-toxic, non-corrosive, and all natural and will not harm animals, plants, birds, fish or humans.

What about aeration?

Typically, EC-504 does not affect the dissolved oxygen concentration in a well-aerated pond. Aeration will enhance the effectiveness of EC-504, as well as benefit all aquatic life present in the pond. It is recommended that all ponds without adequate dissolved oxygen levels be aerated. By digestion of free organics, the microbes in EC-504 dramatically reduce the BOD (Biochemical Oxygen Demand). That is to say, in aquatic systems more of the dissolved oxygen is available to fish life as less is required for the oxidation of organics. Thus, EC-504 will enhance non-aerated and poorly aerated ponds.

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Will EC-504 work within the pond bottom and sludge layer?

Yes. The sludge layer can be the largest contributor of nutrients to the pond for two reasons. (1) As organic matter (leaves, grass clippings, etc.) degrades on the pond bottom, nitrogen and phosphorus are released to the water. (2) biomass, in the sludge layer, can be damaged by chemicals flushed into the pond during rainstorms. EC-504 will accelerate the degradation process. This not only reduces the sludge layer volume but will also reduce the release of nutrients. It is important to note that the copper used in algacides and herbicides accumulates in bottom sludge causing an ever-increasing toxicity problem for natural microbes.

Are permits or applicator's licenses necessary?

No, EC-504 is not regulated and a permit or applicator's license is not required.

How is EC-504 used?

EC-504 is a pond management program, not a one time, quick-fix chemical addition. As such, it requires initial preparation and continued attention in order to provide optimum results.

What is the purpose of the maintenance dose?

EC-504 is a preventative maintenance product. Accordingly, a bi-weekly dose will ensure that biomass levels remain sufficient to handle nutrient inflows. Water outflow, irrigation, leaching and inter-species competition, with less desirable microbes, can reduce biomass. The maintenance dose is applied every other week at the rate of 1 lb./acre-foot. Typically, each treatment environment has unique set of characteristics that impact microbial activity and, as a result, the time window to achieve the desire results will vary from pond to pond.

APPLICATION INFORMATION

TYPICAL APPLICATION RATE (MAINTENANCE): 1 lb. / Acre Foot

TYPICAL APPLICATION INTERVAL: Every 3 to 4 weeks for the duration of the algae season

Note: One acre-foot = 325,829 gallons

How to calculate application rates.

A triple dose (three times the maintenance dose) is recommended for the first treatment and a double dose for the second treatment. Thereafter, use the maintenance dose as determined in step 3, below. For ponds that already have some algae growth or that receive heavier nutrient loads (from lawn fertilizers, farm fields, geese manure, etc.), use a double dose until the algae is eliminated then revert to maintenance dose. For small ponds and water gardens, see below.

1. Estimate the surface area of the pond in acres. (One acre is about 210 feet square or exactly 43,560 sq. ft.)
2. Estimate the average pond depth in feet. (Estimate a bit high if unsure)

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3. Multiply the surface area in acres x the average depth in feet. The result is the pond volume in acre-feet as well as the number of pounds of bacteria required for maintenance purposes. (Example: 0.5 Ac. X 4' deep = 2.0 Acre-feet (2 pounds/maintenance dose).
4. Estimate the total number of weeks in the algae growing season or the number of weeks the pond water temperature will be above 50⁰F. (Note that algae begin growing in waters at or above this temperature and cease vigorous growth below this temperature).
5. Divide the number of weeks in the growing season by 3 and add 1 to the result. This will give you the number of seasonal treatments. (Example: 28 weeks divided by 3 = 9.3 - Add 1 for a total of 11 seasonal treatments)
6. Add 3 to the number of seasonal treatments to account for the two initial heavier doses. (Example: 11 + 3 = 14)
7. Multiply the number obtained in step 6 x the maintenance dose (step 3). This will give you the total number of pounds of bacteria you will need for the algae season. **(Example: 14 x 2.0 = 28 pounds/season)**

Note: For optimum performance water pH should be between 6.0 and 8.0. Check pH before beginning seasonal treatments and several times during the season. Adjust pH to within those limits if necessary. A pH of 7.0 is most desirable.

APPLICATION RATES FOR SMALL PONDS AND WATER GARDENS

The following table is intended as a general guideline for treating small ponds and water gardens for algae, scum and bottom sludge control. The recommended amount depends on the historic amounts of algae and scum grown on the pond when untreated and the number of fish in the pond. Typically, manure and urine resulting from waterfowl can significantly increase loads and suggested dosing amounts should be doubled or tripled depending on the number of birds.

Generally a light accumulation of algae or scum is one that covers approximately 5 – 10% of the pond surface; a medium accumulation about 10 - 20%; a heavy accumulation about 20 – 40% and a very heavy accumulation over 40%. A light to medium accumulation will usually require a dose at or near the lower limit in each category, while a heavy or very heavy accumulation will require the maximum dosage in each range.

Amounts of EC-504 shown below are the maintenance dosages. The first dose should be 3 times this amount; the second dose 2 times this amount. If the pond is not clear and algae free after the second dose, continue to apply the second dose amount until it is. Then use the maintenance dose to keep the pond in that condition. Ponds in areas that do not have a winter algae kill, i.e. those whose water temperature does not go below 50⁰F at any time of the year, should restart the dosing procedure with the 3x, 2x and maintenance dose procedure every 6 months. Ponds that are seasonal require the above sequence of doses at the beginning of each season.

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APPLICATION RATES - MAINTENANCE

POND WATER VOLUME (Gallons)	APPLICATION RATE (Ounces)
Less than 10,000	1.0 – 2.0
10,000 – 20,000	2.0 – 4.0
20,000 – 40,000	4.0 – 5.0
40,000 – 75,000	5.0 – 6.0
75,000 – 150,000	8.0 – 16.0

NOTE: Typically, when chemical fertilizer is applied to areas around a pond, a surge of nitrates into the pond can be expected. This can result in new algae growth in shallow areas. When this occurs, temporarily increase the maintenance dose for one or two applications to account for this nutrient surge. Use the 2x or 3x amounts depending on the degree of new growth. To apply, simply toss the water soluble pouches directly into the water.

SAFETY

EC-504 cultures are derived from natural-occurring soil and water bacteria that utilize only non-living organic matter as food sources. These cultures have not been genetically altered or manipulated in any manner. The cultures are completely safe, and will not harm humans, plants, birds, fish or the environment.

APPEARANCE

A free flowing powder tan in color.

PH (re-hydrated solution) 6.8 – 7.2. The solution will not harm or corrode process equipment.

STABILITY

If stored at temperatures under 95⁰F, the product, in its original, unopened container will maintain viability and effectiveness for not less than 3 years.

SAFETY

The materials used in the production of EC-504 are derived from naturally occurring and sustainable sources. EC-504 is environmentally friendly, biodegradable and is not harmful to animals, plants and humans.

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COMPLIANCE

Fully complies with EPA Toxic Substance Control Act (TSCA) and the rules, orders and regulations promulgated there under including:

- a) Sections 4, 5, 6 & 7; Title 40 Chapter 1, 707.20 thru 707.75;
- b) 40 CFR Sections 704.3, 710.2(e) and 720.3(c); and
- c) Sections 5 and 13, reference 42FR64583
- d) Does not contain marine pollutants as defined in 49 CFR 171.8.

MORE SATISFIED EC-504 CUSTOMERS

----- Original Message -----

From:

To: [EcoChem](#)

Sent: Tuesday, August 02, 2005 3:05 PM

Subject: Re: Question re: EC-504

"My wife and I have been water gardening for over 15 years and our small pond is heavily stocked with mature Koi fish. We have used many algae control products over the years and find EC 504 is the best product by far, our pond has never looked better. It keeps string algae under control, and algae build up on the river rock lining is gone."

John & Paula

Oakville Canada

(Original document is on file at EcoChem)

----- Original Message -----

From: J... Brown

To: [EcoChem](#)

Sent: Tuesday, May 04, 2004 5:08 PM

Subject: EC-504 order

Attn. Judy

The product is working great. I would like to order another 10 kg pail.

Here is my credit card information

Send by standard delivery method - not in a hurry this time.

Many Thanks

.... J. Brown

.... Ave

..... CA 92181

(Original document is on file at EcoChem)

EC-504 POND CLEANER TREATMENT DUGOUT IN LIMERICK, SK.

Initial EC-504 Pond Cleaner Treatment done July 17, 2006

Second EC-504 Pond Cleaner Treatment done July 24, 2006
(covering appeared somewhat thinner but entire dugout was covered in green)



Third EC-504 Pond Cleaner Treatment done July 31, 2006
Remarkable Changes Apparent (only 2 wks. Later)



MATERIAL SAFETY DATA SHEET

EC-504

I. GENERAL SUPPLIER INFORMATION

Product Identifier: EC-504
Product Code: 5049
Class: 60 NON-HAZ
IHC: 3824.90.91.50
Product Use: Algae control – aqueous environments
Manufacturer: EcoChem
Address: 1 Rng. Rd. 17-4A, Delia, AB, CA T0J 0W0
Telephone: 1-403-364-2888 / 1-403-364-2802
Fax: 1-403-364-2889
Email: admin@ecochem.com

II. HAZARDOUS INGREDIENTS

Hazardous Components: None – GRAS (Generally recognized as safe)

III. PHYSICAL / CHEMICAL DATA

Bulk Density: 0.6 - 0.8 gr/cc
pH: 6.0 to 7.0 when mixed with water
Water Solubility: Moderate - disperses in water
Form: Free-flowing Powder
Color: Brown
Odor: Yeast like odor
Plate Count: 5×10^9

IV. FIRE & EXPLOSION DATA

Flash Point: N/A
Special Fire Fighting Procedures: None required
Extinguishing Media: Water

V. REACTIVITY DATA

Stability: Stable
Conditions to Avoid: Accumulation of free product in confined area
Hazardous Byproducts: None
Hazardous Polymerization: Will not occur
Incompatibility: Acids or alkalis may inactivate product.

VI. HEALTH HAZARD DATA

No potential health hazard associated with handling water soluble pouches

Eye Contact: May cause irritation.
First Aid: Flush with water. Contact physician as required.
Recommended Precautions: Avoid creating dust in an enclosed environment.

Skin Contact: Exposure may cause irritation if a person has a history of dermal allergic reaction.
First Aid: Wash with soap and water.
Recommended Precautions: Limit exposure.

Ingestion:	Considered non toxic but can lead to nausea or diarrhea.
First Aid:	Give two glasses of water to dilute product, do not induce vomiting. Contact physician as required.
Recommended Precautions:	Store in safe place.
Inhalation:	May cause Irritation.
First Aid:	Calm the individual, allow plenty of fresh air, loosen clothing around neck. Contact physician as required.
Recommended Precautions:	Use approved respiratory mask as required. Avoid creating dust in confined areas.
General Precautions:	wash hands after free product.

VII. STORAGE & HANDLING

Recommended Storage:	Store in cool, dry conditions away from direct sunlight. Shelf life under recommended storage conditions 3 years.
Precautions on Handling:	No danger from handling water soluble pouches. No special handling required.
Waste Disposal:	Small spills can be washed away with water. Large spillages, if contained, can be returned to container. Check regulations prior to disposing of large quantities.

VIII. COMPLIANCE

Fully complies with EPA Toxic Substance Control Act (TSCA) and the rules, orders and regulations promulgated there under including:

- a) Sections 4, 5, 6 & 7; Title 40 Chapter 1, 707.20 thru 707.75;
- b) 40 CFR Sections 704.3, 710.2(e) and 720.3(c); and
- c) Sections 5 and 13, reference 42FR64583
- d) Does not contain marine pollutants as defined in 49 CFR 171.8.

IX. BIOLOGICAL HAZARD DATA

This product has been shown to be free of Salmonella and Shigella using recommended procedures. Does not contain animal or plant components.

Prepared by: MSDS Coordinator

Preparation Date: March 16, 2001 - Last Revision: January 11, 2006

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