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MICROBE-LIFT[®]

Product Usage Guide

WHEN to use
WHAT they do
additional
INFORMATION

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Ecological Laboratories INC.

Providing Aquatic Solutions Since 1976



MICROBE-LIFT POND & AQUARIUM



@MICROBELIFT



MICROBE-LIFT® WATER CLARIFIERS (liquid)

MICROBE-LIFT/PL Any time your pond water is not as clear as you'd like, the temperature is over 45° F. (8° C.), there is sediment buildup on the bottom of your pond or your pond is not cycling.

Balances your pond's ecosystem by establishing all natural biological processes required to: keep water clear and clean; reduce or eliminate organic sludge buildup; and seed your filter.

The #1 water clarifier asked for by brand name. Does the work of 3-4 competitive products. The only pond product with photosynthetic microorganisms. Safe if pets drink out of a pond treated with PL.

Barley Straw Concentrated Extract (CBSE) Start in spring before water temperatures reach 50° F. (10° C.) and continue throughout the year to provide water clarity when ML/PL alone does not provide the desired results. Preferred by pond owners with bottom drains since it leaves no residue.

Just as ML/PL biologically matures the pond's ecosystem, ML/CBSE chemically matures it like it would if aged through the introduction of rain and runoff water passing through decaying vegetation. Provides many of the same benefits as ML/BSP but without the peat so there is no residue.

Studies prove there is a scientific basis for the beneficial clarifying effects of barley's decomposition by-products, including humic acids - which can sequester or "tie-up" nutrients that promote undesirable growth - and hydrogen peroxide. While barley straw itself would take 4-6 weeks to break down and release these chemicals when added to a pond, ML/CBSE and BSEP contain pre-digested barley that release these same compounds within 1-5 days. ML/BSEP contains peat—shown to have buffering and ion exchange capabilities.

Barley Straw Concentrated Extract PLUS PEAT (BSEP)
Same as above.

Provides many of the same benefits as ML/CBSE and BSP but may turn pond water a tea-color for 10-14 days which also provides a natural sun filter.

HC Same as MICROBE-LIFT/PL but for use in larger ponds or lakes.

Creates a healthy pond environment to promote fish growth by breaking down organic sludge and reducing: ammonia nitrogen levels; biological oxygen demand (B.O.D); hydrogen sulfide (creates offensive odors); buildup of bird droppings, fish feed and dead leaves.

Safe for all wildlife in and around the pond. Each ML/HC jug carries our informational hangtag titled: "Bio-augmentation for Natural Ponds and Lagoons," which answers the most commonly asked questions about this process.

MICROBE-LIFT® LEGACY FISH FOOD (containing live viable microorganisms)

SUMMER STAPLE (Floating Pellets) As the warmer weather sets in, begin increasing the frequency and quantity of your feedings of LEGACY™ SUMMER STAPLE FOOD.

Contains animal protein and color enhancers—made up of astaxanthin (crab shell), spirulina and krill which promote brilliant color development—needed during the summer season.

These PRIMARY FOODS are to be fed 3 days per week. Contains Nature's Building Blocks™—probiotics that produce enzymes to help break down carbohydrates, protein and fat so that they are more readily absorbed by the fish.

COLD WEATHER (Wheat Germ) During the colder weather periods of spring and fall when nighttime temperatures can drop below 55° F. (13° C.).

A highly digestible, cool-water diet made with lesser amounts of protein and wheat germ, and a higher level of fats specifically for when pond water temperatures drop.

GROWTH & ENERGY In late spring when the warmer temperatures arrive and in fall in preparation for winter. Use at a minimum temperature of 68° F. (20° C.). at which pond fish really start to grow.

Supplies a needed boost of protein for growth in late spring since koi and goldfish have depleted their fat reserves over winter. Supplies a higher protein diet in the fall to bulk up in preparation for the winter fast.

Feed between 2-3% of the fishes' body weight up to four times per day.

SUMMER STAPLE with MONTMORILLONITE CLAY When temperatures are above 68° F. (20° C.), alternate feeding 2 supplemental foods 4 days per week. In colder weather, you can alternate LEGACY COLD WEATHER FOOD due to its lower protein content.

Montmorillonite Clay provides added minerals, which help stimulate immunity against viruses commonly found in pond environments and also acts as a toxin binder by neutralizing metabolic toxins. Additional quantities of vitamins are also blended into this food.

These SUPPLEMENTAL FOODS are to be fed 4 days per week. Contains Nature's Building Blocks™—a source of live (viable), naturally occurring microorganisms.

SUMMER STAPLE with FRUITS & GREENS If you don't have time to cut up fruits and vegetables.

Adds a variety of foods in one scientific blend to the fish's diet consisting of apples, apricots, kiwis, mangos, papayas, peaches, pears, broccoli, cabbage, peas, red peppers, tomatoes, zucchini and spinach!

As far as we know, Ecological Laboratories is the first fish food manufacturer to commercially produce a food with fruits and vegetables!

SINKING FOOD When adding "shy" new pond fish adjusting to their new surroundings and neighbors, and/or when stressed or sick fish don't come to the pond's surface but rather feed off the pond bottom.

Sinks beneath the pond surface guaranteeing balanced meals for fish that stay in the middle to bottom area of the pond.

A sinking Summer Staple Food.

MINI PELLETS For young fish.

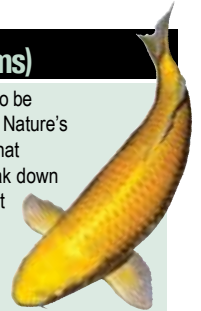
Contains stabilized Vitamin C to help promote proper tissue development.

Mini Summer Staple Food pellets .

VARIETY MIX A 4-blend mix to add some variety into your fish's diet.

Provides a complete blend of fruits, greens, carbohydrates, protein, wheat germ, vitamins and probiotics to your koi and pond fish, containing 25% of each our most popular LEGACY foods.

Do NOT use in colder weather.



MICROBE-LIFT® WATER CLARIFIERS (dry)

BSP (Barley Straw Pellets+) Start in the spring before water temperatures reach 50° F. (10° C.) and continue maintenance throughout the year to provide additional water clarity when MICROBE-LIFT/PL alone does not provide the desired degree of clarity.

Just as MICROBE-LIFT/PL biologically matures the pond's ecosystem, ML/BSP chemically matures it like it would if aged through the introduction of rain and runoff water passing through decaying vegetation. The pellets sink to the bottom within minutes and dissolve quickly. May turn pond water a tea-color for 10-14 days and does leave a residue from the peat.

ML/BSP contains peat—shown to have buffering and ion exchange capabilities—and humates which can sequester or "tie-up" nutrients. Studies prove there is a scientific basis for the beneficial clarifying effects of barley's decomposition by-products, including humic acids and hydrogen peroxide. While barley straw itself would take 4-6 weeks to break down and release these chemicals when added to a pond, ML/BSP contain predigested barley releasing the same compounds within 1-5 days.

S B (Sludge Away Booster) During spring or summer when our other bacterial products, e.g. ML/PL and TAC, do not provide the desired results; or, when organic buildup occurs in areas other than the pond bottom, such as waterfalls.

Provides a blend of bacteria and enzymes developed to accelerate the breakdown of organic buildup in areas of the pond other than the pond bottom, e.g. waterfalls. Also offers a different consortia in the rare instances when PL does not achieve the desired result.

Works in areas where MICROBE-LIFT/SA does not break down organic deposits.

TAC (Totally Active Clarifier) Any time your pond water is not as clear as you want it and the temperature is over 45° F. (8° C.). If there is sediment buildup on the pond bottom or the pond is not cycling.

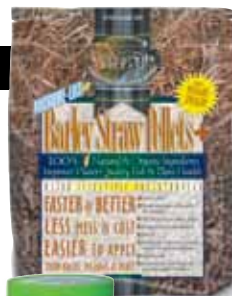
Soluble components include: sodium bicarbonate (a buffer); sea salt (with important trace minerals and metals); and activated carbon, which can reduce trace pollutant levels, e.g. pesticides through absorption. Does not contain bran that settles to the pond bottom.

Only powdered pond clarifier that is totally water soluble! Does not have the full spectrum of organisms contained in MICROBE-LIFT/PL but does include a broader spectrum than any other powdered bacteria. Does not contain photosynthetic bacteria like ML/PL.

MC+ (for Maximum Clarity Plus) Any time pond temperatures are above 50° F. (10° C.). Can be used with MICROBE-LIFT/PL to provide additional biological activity or alone where in one of the rare situations ML/PL does not provide the desired result.

Balances your pond's ecosystem by establishing all natural biological processes required to keep water clear, reduce or eliminate organic sludge buildup, and seed your filter. Also provides the added benefit of barley.

A powdered bacterial clarifier comprising bacteria, enzymes and the added benefit of barley all in one product.



MICROBE-LIFT® FISH HEALTH



TheraP When pond temperatures are above 45° F. (8° C.) to out compete common fish pathogens, and to stimulate the fish's immune system in much the same way a vaccine does.

Reduces the potential for common fish diseases such as Aeromonas, Flexibacter, and Pseudomonas in two ways: first, by stimulating the fish's immune system; and, second, by boosting the populations of beneficial organisms.

Just like a healthy lawn will crowd out weeds, a population of beneficial bacteria will make it harder for undesirable organisms to get a foothold in a pond's ecosystem. When used with MICROBE LIFT/PL, the dosage can be reduced by 40%.

ICH-OUT

To relieve pond and ornamental fish and aquatic life of Ich (white spots).

Three of the most preferred anti-parasitic ingredients and a topical effectively treat Ich, Trichodina and Chilodonella while safely helping to reduce the chances of secondary infections.

Will not burn.

DEFEND Upon the appearance of whitish, cottony patches on skin or fins and/or grayish slime surface on the body of any pond and ornamental fish

Provides rapid relief to mend, heal and protect damaged tissues combining two major anti-fungal ingredients plus a slime coat stimulator

Not for use with invertebrates.

RESTORE To promote regeneration from damages to skin, fins and scales, i.e. shredding, cuts, scratches and/or abrasions from rock and gravel. May be combined with MICROBE-LIFT treatments for parasites or fungus.

Combines healing and protective double slime-coat action with fast results to provide a natural defense against secondary bacterial infections plus added electrolytes. Vitamin B-12 also helps heal and regenerate fins.

Can be combined with MICROBE-LIFT treatments for parasites or fungus to help repair damaged tissues. Especially helpful when used for Butterfly Koi and Fancy-Tailed Goldfish. Do not use with permanganate-based treatments.

PROTECTANT Add weekly or when introducing new pond fish to help prevent Ich parasites, fungus, harmful bacteria and environmental stresses BEFORE they can cause problems.

Reduces the possibility of infection and/or reinfection with all pond, ornamental and aquarium fish.

Contains double slime-coat protection.

BROAD SPECTRUM DISEASE TREATMENT When advanced parasitic or fungal disease is suspected

It is the most effective treatment for the control of diseases caused by Ich, Costia, Trichodina, Chilodonella, Oodinium and fungal infections.

Do not use with salt. Do not freeze.

LICE AND ANCHORWORM TREATMENT May be used in any water temperatures above 40° F (4° C).

Safely controls all stages of lice and anchorworms.

Will not harm biological filtration and may be used on scaleless fish.

PRAZIQUANTEL Recommended as an annual spring treatment for ornamental ponds

Effective treatment for flukes and tapeworms

Do not use with any other drugs or treatments

STRESS RELIEF Use when adding water to new ponds; before, after or during water additions; or before adding new livestock. Add to transport bags.

Removes chlorine, chloramines; adds a multipart slime-coat replacer. Detoxifies heavy metals. Adds essential electrolytes.

Contains Aloe Vera for healing.

ROMET TC Use as top-dressing on your favorite fish food

Antibacterial top dressing applied to the food your fish are familiar with

Combination of sulfadimethoxine & ormetropin antibacterials

SABBACTISUN Use any time, but for fish fin or sore healing, fish need water temps of 71° F or above

Acts as expellant to help drive pathogenic bacteria off the fish and without a host will ultimately result in the death of the bacteria

Use only as directed, Use for bacterial Dropsy, Fungus, Milky Skin, Fin/Tail rot, raised scales

PARAZORYNE Effective against White Spot, Costia, Flukes (gill & skin), Trichodina, Oodinium, Chilodonella

Parazoryne is a unique herbal immune-enhancing stimulant which reduces parasitic infections in stressed fish

Use only as directed. Ammonia and nitrite should not be above 0.4 ppm and pH on a level suitable for the particular species of fish.



MICROBE-LIFT® CHEMICAL WATER TREATMENTS

pH INCREASE When, after testing pond water the same time each day (dawn=lowest pH; dusk= highest pH) you get a pH reading BELOW 6.5.	Safely RAISES pH levels with 2 pH increasers for gentle effectiveness, 3 electrolytes to help maintain osmotic balance and a chelating agent to enhance water quality.	Contains a slime coat ingredient for skin protection and electrolytes for stress reduction in pond fish.
pH DECREASE When, after testing pond water the same time each day (dawn=lowest pH; dusk= highest pH) you get a pH reading ABOVE 8.5.	Safely LOWERS pH levels using 2 pH decreasers for gentle effectiveness, 3 electrolytes to maintain osmotic balance and a chelating agent to enhance water quality.	
7.5 pH BUFFER/STABILIZER When the pH is higher than desired and difficult to control.	Safely BUFFERS pH levels and prevents wide pH swings by providing necessary alkalinity for nitrification.	Not harmful to fish or plants. Reduces cost of pH control in high pH environments.
DECHLORINATOR+ To dechlorinate, detoxify and condition water when making regular, partial water changes and when replacing lost or evaporated water in BOTH fresh and saltwater.	Neutralizes chlorine and breaks the chloramine bond while not scavenging oxygen as other dechlorinators do. Also renders certain toxic metals and pollutants harmless (including iron, copper, lead, zinc and free iodine).	Contains a pH buffer, 2 slime coat ingredients for replacement and conditioning as well as protecting against ammonia burn in pond fish. Note: Ammonia levels should be monitored carefully as chloramine breakdown can add to ammonia concentration.
AMMONIA REMOVER At startup, when making water changes, replacing lost water due to evaporation, when the biological filter gets damaged or when your pond contains more fish than it should.	Neutralizes toxic ammonia, chloramine and chlorine giving beneficial bacteria time to multiply and recover, keeping pond fish from being stressed while treating ammonia burn. Works immediately.	Every ounce removes 1.25 ppm of toxic ammonia in 150 gal. of water by forming an irreversible complex to reduce free ammonia to safe levels. Safe for use with all pond fish and aquatic life.
POND PHOSPHATE REMOVER When levels of phosphate (caused by the decomposition of organic substances such as uneaten food, dead plant matter and fish waste) is measured in concentrations above 0.2 ppm in fresh water.	A fresh water, polymeric blend with the ability to tie-up large quantities of phosphate without negatively influencing the pond water in any way.	Will not harm fish or plants
FLOCCULANT PLUS To clear cloudy water and improve filtration.	A proprietary water clarifier formulation used to attract and coagulate suspended solids in the pond water; After use, particles in the water settle to the bottom of the pond and/or filter out through the filter system	Will not affect cloudiness due to dissolved organics.
DEFOAMER When unsightly foaming is persistent in ponds and fountain of all sizes.	Eliminates foam in seconds leaving pond water clean and clear by increasing surface tension of the water.	Foaming can indicate a heavy concentration of undissolved particulate organics.
DRY AMMONIA REMOVER w/CHLORAM-X Removes chlorine, destroys chloramines and completely eliminates the ammonia left behind when the chloramine bond is broken.	Completely safe for bio-filters. Tested with shrimp, shellfish, aquatic invertebrates. Can be combined with antibiotics & anesthetics. Ship live animals without toxic ammonia problems for 72+ hours.	Safe for use with fish intended for human consumption.
KH BIO-ACTIVE BOOSTER KH (carbonate alkalinity) is essential in stabilizing pond pH	Use to prevent pH crash. Nitrifying bacteria use 7.1 mg of KH to remove 1 mg of ammonia. Should KH levels drop below a safe level, nitrification ceases and pH will be difficult to control.	Essential for nitrification
AQUA XTREME For use in ponds where chloramines are added to the water supply	Detoxifies Nitrite, copper and heavy metals. Removes and detoxifies chlorine and ammonia. Destroys chloramines, boosts alkalinity. Adds electrolytes and a slime-coat replacer to reduce stress in pond fish.	Shake well before using.

MICROBE-LIFT® FILTER, SKIMMER & MEDIA PRODUCTS

SUPER START BEAD FILTER BACTERIA When starting up a bead filter or after maintenance or rebedding of the filter.	Provides population that quickly colonizes beads to provide rapid startup of bead filters. Helps to stabilize overall process especially after maintenance.	Contains populations that are effective in producing biopolymers, glue-like substances, that aid in bacterial attachment and film formation.
PL/GEL (Filter Pad Inoculant) To help stabilize the pond environment quickly upon startup and eliminate transient instability that can occur when filter media is cleaned or replaced, accelerating the breakdown of organic solids that can lead to high maintenance requirements.	Quickly attaches to and populates any filter media (foam, strapping, floss, bio-balls, ceramic media, etc.) to rapidly establish the necessary biological activity in your filter, stabilizing your pond's environment quickly and restoring activity when cleaning/changing the filter media allowing for 80% reduction in filter start-up time.	Contains the same spectrum of bacteria found in MICROBE-LIFT/PL. Helps to establish denitrification in the filter which can lower nitrate levels in the pond.
CARBON PELLETS & ZEOLITE (Mineral Ammonia Remover) Precolonized w/ Bacteria To protect against ammonia spikes while biological nitrification is established.	Removes dissolved organics and ammonia, odors, dyes and medications, lowering fish stress and mortality rates. Absorbs liquefied impurities improving water quality and clearing turbid water.	Prepacked in nylon media bags.
SUPER ACTIVATED CARBON Precolonized w/Bacteria To absorb impurities and speed nitrification.	The highest grade available to remove medications, odor-causing compounds, dyes and organic pollutants while absorbing liquefied impurities.	Treats twice as much and lasts twice as long as most carbons. Prepacked in nylon media bags.
ZEOLITE (Mineral Ammonia Remover) Precolonized w/Nitrifying Bacteria Nite-Out II To protect against ammonia spikes while biological nitrification is established.	Removes ammonia and dissolved organics, and protects against ammonia spikes reducing fish stress, lowering fish mortality rates and improving water quality.	The zeolite chips may be recharged monthly.
BIOLOGICAL CERAMIC RINGS Precolonized w/Nitrifying Bacteria Nite-Out II To quickly establish filter/skimmer's biological activity.	Porous structure gives these rings many times more surface area to optimally support large bacterial colonies. Does not break down like other media.	Quickly establishes biological ammonia control.
BIOLOGICAL PIN BALLS Precolonized w/ Nitrifying Bacteria Nite-Out II To speed nitrification and water clarification.	Nitrifying bacteria colonize and thrive on this due to its high surface area per unit volume for providing superior biological filtration. Proven microbial technology is excellent for oxygen and gas exchange.	Fits most skimmers and filters when packed loosely. Can be put into "master" media bags and set directly into the pond or snapped together to form a bio-cord.
BIOLOGICAL MINI PADS Precolonized w/ Nitrifying Bacteria Nite-Out II To provide superior biological nitrification.	Traps suspended dirt and debris while allowing for high water flow without clogging.	Can be put into "master" media bags for direct placement into your pond, skimmer or filter. May be replaced or cleaned and recolonized.





MICROBE-LIFT[®] MOSQUITO CONTROL

BMC (Biological Mosquito Control for Ponds, Stock Tanks & Birdbaths) During mosquito season - June to October in most areas, longer in warmer areas - or when mosquitoes are present.

The *Bacillus thuringiensis israelensis* (Bti) produces a protein crystal that reacts with cells in the guts of mosquito and black fly larvae, giving them what amounts to bleeding ulcers resulting in the death of the larvae before it can become a breeding, biting adult mosquito.

Because the crystal protein is specific to the cells lining the gut of mosquito and black fly larvae, it does not affect other insects, like dragonflies, nor higher life forms including plants and animals (pets), nor humans.

MICROBE-LIFT[®] PLANTS

ENSURE Any time aquatic plants are growing in the pond. Especially beneficial when transplanting to reduce transplant shock.

Populates plant root system, producing growth factors and modifying nutrients making them more readily absorbable by plants. Reduces browning of leaf edges. Keeps leaves shinier and improves bloom quality and retention.

Helps flowering plants bloom faster in areas where there is less abundant sunlight or if weather patterns in a given year result in less sunlight. If used with MICROBE-LIFT/PL, dosage can be reduced 40%.

BLOOM & GROW Whenever aquatic or terrestrial plants are actively growing.

Provides essential micronutrients, co-factors and minerals for optimum plant health.

NOT a fertilizer but will enhance fertilizer benefits and reduce its requirements.

CAPM (Concentrated Aquatic Planting Media with Beneficial Bacteria) Whenever potting, planting or transplanting aquatic plants.

Provides a high quality, stable ceramic media that can be used alone or mixed with loam for potting aquatic plants. The bacteria in ML/CAPM also populates the root zone of the plant, working synergistically with the roots to produce growth factors and modify nutrients so that they can be more readily taken up by the plant.

The media will not float nor leach nutrients into the water where it can promote undesirable growth. Reduces transplant shock resulting in better leaf health with less browning of edges. Also provides more robust, longer lasting blooms from flowering plants.

NOURISH Use to improve substrate which supports plant growth

Includes microorganisms and humates necessary for increased plant growth and nutrient availability

Contains no fertilizer.

MICROBIAL ROOT DIP Specially formulated to promote a healthy and strong root system

Reduces transplant shock; helps plant immune defense. May be used with all water plants, as well as bog and terrestrial plants. Aids in disease resistance.

Enhances metabolism. Increases chlorophyll. Increases nutrient availability.



MICROBE-LIFT[®] SEASONAL

SPRING/ SUMMER CLEANER

In Spring to accelerate decomposition of dead leaves and other cellulosic matter left over on the pond's bottom from previous fall and winter.

Since bacteria are not good producers of cellulase - the enzyme that breaks down cellulose - the cellulase enzymes in the water-soluble packets speed up the initial step in this process.

Should be used with MICROBE-LIFT/PL or TAC to complete breakdown of dead leaves and plant matter initiated the previous year by ML/AUTUMN/WINTER PREP.

AUTUMN/WINTER PREP 1 to 2 weeks after the start of leaf drop from trees and then through winter until pond temperature is consistently below 37° F. (3° C.). Apply first water-soluble packet and begin with the liquid component 1 week later continuing according to label instructions; Apply second powder packet 1 month after first.

The water-soluble, powder packet contains: a concentrated cellulase enzyme (which breaks down cellulose—a primary component of leaves); hyper-cellulase producing bacteria and a cold weather (psychrophilic) bacteria. Helps to speed up the rate limiting step in the breakdown of leaf and plant matter over the winter.

While biological activity is lower due to low temperatures, other conditions—e.g. dissolved oxygen levels which are higher at low temperatures and lower fish activity—make this an excellent time to break this material down so there is little or none left by spring and manual cleaning is reduced or eliminated.



MICROBE-LIFT[®] SPECIALTY BACTERIA & ENZYME PRODUCTS

SA (Sludge Away) Any time there is excessive non-cellulosic organic sludge buildup in the bottom of the pond, especially rock bottom ponds.

Helps solubilize organic sludges making them more readily available for biodegradation much the same way the AUTUMN/WINTER PREP powder packet helps speed the breakdown of leaves and other plant matter.

Has been shown to break down up to 3" of sludge in as little as 4 weeks. Should be used with MICROBE-LIFT/PL. May darken water slightly for up to 2 weeks after adding.

BIO-BLUE Enzymes & Pond Colorant Whenever the appearance of your pond water is not acceptable due either to cloudiness or unattractive color.

Enzymes quickly break down suspended organic matter that can make water cloudy while the biodegradable blue dye tints the color an attractive blue for a dramatic appearance.

Can be used to temporarily enhance the pond aesthetics since the biodegradable dye will break down in 6 - 8 weeks or can also be used regularly to maintain clarity or the desired level of blue or black color.

BIO-BLACK Enzymes & Pond Colorant Commonly used in botanical gardens to create a reflective pond.

Enzymes quickly break down suspended organic matter that can make water cloudy while the biodegradable dye tints the pond a reflective black for a dramatic appearance.

NITE-OUT II When the ammonia levels in your pond exceed 0.8 mg/L and the temperature is over 50° F. (10° C.). Especially useful when starting up a pond and when nitrite buildup is observed.

Quickly establishes the necessary populations required to efficiently cycle nitrogen compounds in the pond, i.e. oxidize ammonia to nitrite, and nitrite to nitrate.

Acts within a day or two to lower ammonia nitrogen and nitrite nitrogen levels naturally. In long run, better than non-biological ammonia removal products that have finite capacity and have to be replaced regularly.

SC (Soy-Based Cleaner) When cleaning pond liners, pumps, fixtures, etc. that can become fouled with sludge and dried solids.

Loosens up and cleans away accumulated solids with the cleaning action of natural biodegradable soy extracts.

Not toxic to aquatic fish and plant life like most cleaners, detergents or surfactants.





WHEN TO USE

WHAT IT DOES

ADDITIONAL INFORMATION

MICROBE-LIFT® BIRDBATH & FOUNTAIN



SOY-BASED BIRDBATH & STATUARY CLEANER To clean bird-baths, garden statues, sculptures, stone and brick.

A special blend of soy-based chemistry that safely yet powerfully removes organic debris and mineral deposits such as scaling, staining and water discolorations.

Environmentally friendly, biodegradable, skin-friendly, nontoxic and safe for use around birds, animals and humans, plants and grass; No air polluting VOC's.

SOY-BASED BIRDHOUSE & BIRDFEEDER CLEANER To clean ALL plastic, vinyl, fiberglass and metal birdhouses and resin/poly birdfeeder surfaces.

An environmentally friendly, proprietary formulation utilizing the soybean's safety and power to clean surfaces of bird droppings and other organic debris and mineral deposits.

NO toxic residue which can be harmful to birds or wildlife. Will not scratch plastic or metal surfaces when used according to label directions.

BIRDBATH CLEAR For new or existing birdbaths to prevent deposits of organic and inorganic contaminants from forming (i.e. crusty white scale, iron, copper and hard water stains).

Uses two unique technologies: One to help prevent the buildup of stains and mineral deposits on birdbaths or fountain surfaces; the second uses bio-enzymatic activity to keep water clear and free from the organic debris that can make the water cloudy.

Clean existing birdbaths first with ML/SOY-BASED BIRDBATH & STATUARY CLEANER.

SMALL FOUNTAIN CLEAR and **LARGE FOUNTAIN CLEAR**
To ensure clear, sparkling water that keeps water filters and pumps free from organic debris in small or large water fountains, birdbaths and indoor and outdoor waterfalls.

Two products that prevent organic contaminants from forming deposits (i.e. crusty white scale, iron, copper, hard water stains) by preventing their buildup on the birdbath or fountain surface. Keeps water clear and free from the organic debris that can make the water cloudy.

All natural ingredients are biodegradable, nontoxic and safe for humans, pets and fish.

MICROBE-LIFT® PROFESSIONAL POND/LAKE MANAGEMENT

PBL PROFESSIONAL BLEND LIQUID For use by pond professionals to seed ponds/lakes with beneficial bacteria

A blend of microbes that contain specially formulated strains of bacteria manufactured for use by landscape, irrigation and pond professionals.

Contains photosynthetic bacteria

PBL PROFESSIONAL BLEND DRY For use by pond professionals to treat for leaf and cellulosic buildup in ponds and lakes

A popular version of the MICROBE-LIFT consumer bacteria and enzyme dry packets.

Self-dissolving



MICROBE-LIFT® TEST KITS

5-IN-1 TEST STRIPS For use any time of year to easily determine pond water parameters

Tests for Nitrite, Nitrate, total hardness, total alkalinity and pH.

Contains 50 combined test strips

KH TEST KIT Identifies low KH levels before it becomes a big problem

Nitrification continuously requires the presence of KH at all times. Utilizes 7.1 mg of KH for every 1 mg. of ammonia removed.

KH level should be 100 ppm or higher at all times for a healthy and stable pond.



USEFUL INFORMATION FOR ALL POND OWNERS

How to Calculate Pond Volume

There are 7.5 gallons of water for every cubic foot of liquid volume in your pond. With this in mind, the way to calculate the number of gallons in your pond is to first calculate the pond volume and multiply by 7.5. Calculate the volume as follows:

RECTANGULAR POND: Multiply the LENGTH x WIDTH x DEPTH (avg.)
Example: For a pond 20 ft. long, 15 ft. wide with an average depth of 2 ft., the volume can be calculated as: 20 ft. x 15 ft. x 2 ft. = 600 cubic ft. x 7.5 gal./cu. ft. = 4,500 gallons

If you find it hard to believe that you have that much water in your pond, that is a typical reaction! What is even more surprising to most people is that this is almost 20 tons of water—a good reason to have a NAPP* certified pond installer install your pond, or a knowledgeable pond specialist from your local pond supply store help you out.

CIRCULAR POND: Multiply the RADIUS (one half of the diameter) x the RADIUS x 3.14 x the DEPTH (avg.)
Example: For a pond that is 30 ft. in diameter with an average depth of 3 ft., calculate the volume as: 15 ft. x 15 ft. x 3.14 x 3 = 2,120 cu. ft. x 7.5 gal./cu. ft. = 15,900 gal.

LARGE POND OR LAKE IN ACRES: If you know the surface area, the gallons can be calculated by Multiplying the AREA in ACRES by 326,700 gallons for every ft. of pond depth.
Example: For a pond or lake that is 2.5 acres with an average depth of 7 ft., calculate the volume as: 2.5 acres x 7 ft. x 326,700 gal./acre-ft. = 5,717,250 gallons

IRREGULARLY SHAPED PONDS: It is best to break down the pond into sections and calculate the volume of each section individually, then total them.

The Natural Cycles

While many pond owners may view using bacteria as an unusual way to purify their water, it is actually the most natural way to do it! That is how nature cleans the environment. Ultimately all waste products in the environment have to be recycled back to the biosphere and bacteria are nature's recyclers.

The most important of these cycles from the standpoint of a pond is the Nitrogen Cycle. Here is a simplified depiction of the cycle. One of the common byproducts of protein breakdown, like the protein in fish food, is ammonia. This ammonia can be toxic to fish and other aquatic life in concentrations as low as 1.0 mg/L depending on the pH. Fish emit this through their gills. The majority of the ammonia in the pond can be traced to this source. Some can also be traced to the breakdown of uneaten fish food and plant material. When a pond is conditioned or capable of cycling, it means that the necessary bacteria have been developed to convert the ammonia to nitrite and, subsequently, nitrate. In many ponds, this nitrate can accumulate and provide nutrients for unwanted plant growth. MICROBE-LIFT/PL allows your pond to take the nitrogen cycle another step by further chemically reducing the nitrate to nitrogen gas, which harmlessly bubbles out of the pond.

Another important natural cycle is the carbon cycle. All living things primarily comprise carbon. Fish waste contains a carbonaceous component. Much of the sludge that builds up on the bottom of most ponds is organic—made up of carbon compounds. Other bacteria in MICROBE-LIFT/PL known as heterotrophs break down this sludge and convert it to carbon dioxide and water. Used in conjunction with MICROBE-LIFT/SLUDGE AWAY, MICROBE-LIFT/PL can keep most ponds clean and sludge free.