

BIO-ORGANIC CATALYST
THE POWER IN NATURE®



ENVIRONMENTAL SOLUTIONS

INDUSTRIAL & COMMERCIAL CLEANING • WASTEWATER TREATMENT • WATER CLARIFICATION

About Bio-Organic Catalyst

Mission Statement

Our Mission is to be the leading provider of bio-organic catalyst compositions to the world's water treatment systems, and to transform the entire field of the cleaning arts. Our guiding ethos leads us to value and honor the relationships which underlie all ecological systems. *Our work brings a better life to all life.*

Our Company

Bio-Organic Catalyst, Inc. produces a line of proprietary product compositions, based upon its unique patented broad spectrum catalytic biochemistry, that establishes an entirely new platform technology for the chemical industry.

Our breakthrough bio-organic catalyst compositions (BOCs), are all manufactured to deliver the highest strength and quality biocatalysts, in highly concentrated liquid formulations. They provide a significant advancement over all other currently available chemicals, or biological agents, due to their total life cycle enhancement of the fundamental linkage between water and organic wastes, and are completely safe to use (USDA), or discharge into public waterways (US EPA).

Our products are directed at solving the most critical aspects of improving water quality and improving those that present the greatest challenges. The strength of the BOC technology is its ability to contribute unique solutions to enhancing the underlying biological and chemical processes that are universal to nearly all industrial cleaning, petroleum hydrocarbon remediation, water treatment and purification systems worldwide. Our bio-catalytic compositions are able to provide significant performance levels unmatched by any other chemical, or biologically based, agents. We have been pioneers in the development of a new paradigm in biological enhancement of the underlying processes used in both water purification and wastewater treatment. This foundation has evolved to world leading capabilities in odor control and bio-gas optimization, furthering the foundation we have built in harnessing the power in nature to transform polluted waters and wastes into environmentally healthy water and soils.

The Company has extensively tested our compositions in numerous engineering studies and toxicity testing programs. Our products meet U.S. Environment Protection Agency and U.S. Department of Agriculture safety requirements. The United Nations Environmental Programme presented BOCs as a selected new environmental technology for the developing world markets. The TÜV Rhineland Institute for Environmental Protection and Energy Technology tested and documented the safety and effectiveness of BOCs, allowing our compositions to be imported into the highly regulated EU markets.

Bio-Organic Catalyst, Inc. received a 2005 Frost and Sullivan Product Innovation Award for Advanced Catalysts, which recognizes a company's research and development program that has, or is expected to, bring significant contributions to the industry in terms of adoption, change, and competitive posture. We strive to consistently provide the most innovative solutions to the most fundamental environmental challenges of our day, and a daily dedication to making demonstrable improvements in the "quality of life" of both our customers and their greater communities.

Technical Services Partners



University of California, Davis, Department of Viticulture and Enology

BOC has a research program with University of California, Davis, Department of Viticulture and Enology to investigate the implications of use of the Company's patented bio-catalytic product, Phyto-C3™, in soil and crop productivity. This research program will examine the impact of Phyto-C3™ in enhancing soil microbiome, as well as the ability to improve water and nutrient management.



University of California, Irvine, WEX Center

BOC has a technical services agreement with the University of California, Irvine, Henry Samueli School of Engineering, whose associated, UCI Water-Energy Nexus (WEX) Center supports comprehensive and trans-disciplinary programs in water efficiency, energy efficiency, and greenhouse gas reduction. The UCI Water Energy Nexus Center (UCI WEX Center) promotes comprehensive and trans-disciplinary approaches to water efficiency, energy efficiency, and greenhouse gas reduction in an urban environment with a diverse, rapidly growing population.

The WEX Center's mission is to advance the understanding of the water environment and the energy-water nexus for urban areas and their surroundings, in order to assist people and institutions in their efforts to promote health, enhance the efficient use of water resources and protect environmental values. The WEX aims to promote excellence in urban water research and education at UCI by facilitating the integration of research in basic and applied science, engineering, and social sciences. The WEX also aims to bridge with entities outside academia to advance societal and industrial applications of fundamental and applies research to inform and aid policy makers and to educate the public on urban water sustainability in Orange County, California, the United States and beyond.



Bio-Catalytic Technology

The bio-catalytic compositions (BOCs) of Bio-Organic Catalyst, Inc. offer an entirely new technological breakthrough within the traditional water treatment and cleaning chemistries marketplace. BOCs are all based upon a breakthrough technological understanding of how to unlock the inherent transformation power of natural biological pathways. The BOC products contain no bacteria, and are completely nontoxic and biodegradable.

BOCs are built upon the powerful bio-catalytic capabilities of a fermentation supernatant, derived from plants and minerals, offering a highly enriched and concentrated nutrient source. This is blended with surface modifying components into a very powerful liquid concentrate which, in water, create ultra-fine micro-bubbles that act as a platform for highly accelerated chemical and biological reactions for much higher conversion rates within water and solid waste treatment.

The functional mechanism of BOCs is attributed to molecules consisting of both a hydrophobic and a hydrophilic element. BOC's patented amphiphilic molecules will attach to components such as;

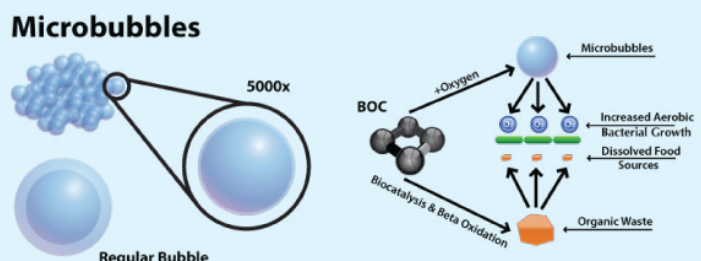
- Bacteria
- Organic Wastes
- Oxygen
- Foul Gases
- Byproducts of decaying organic matter (sulfides, amines, mercaptans, skatole, and other contaminants)

BOCs offer an extraordinarily powerful mechanism for allowing gases to cross membrane barriers, thereby increasing both biological processing vitality and reproduction rates. Rates of gas transfer are intimately tied to cellular respiration, and are a critical factor in the vitality of all aerobic and anaerobic biological processes. These ultra-fine micro-bubbles have very high gas transfer characteristics, with exponentially greater surface areas than are possible through mechanical aeration systems. The vastly improved gas transfer rates offer critical enhancement of the biological oxidation reduction rates of organic wastes and wastewater.

The breaking of molecular bonds, the enzymatic breaking of organic pollutants into more digestible components for microorganisms to consume as a food source, is also a critical element attributed to the gas transfer capability of BOCs, which we refer to as 'beta oxidation'. This is extremely important in the making organic pollutants soluble, breaking the wastes into their constituent components. This is especially critical with the chronically problematic insoluble wastes known as Fats, Oils, and Greases (FOGs).

This revolutionary bio-catalytic chemistry vastly important in a broad array of environmental and waste conversion objectives by addressing the fundamental limiting factors in biological treatment processes.

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Bio-Catalytic Technology

Why Bio-Organic Catalyst?

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This revolutionary bio-catalytic chemistry vastly important in a broad array of environmental and waste conversion objectives by addressing the fundamental limiting factors in biological treatment processes. Want to see how BOC products work – view before and after pictures using Bio-Organic Catalyst products.

BOCs provide economically compelling benefits to environmental professionals, bringing practical and cost saving advancements to wastewater treatment, water clarification, industrial and commercial cleaning.

BOCs offer substantial operational optimization in the applications of:

- Agriculture
- Anaerobic Digestion
- Aquaculture
- Bio-Catalytic Cleaning
- Cooling Towers
- Composting & Animal Care
- Hydrocarbon Cleaning/Remediation
- Odor
- Paper and Pulp
- Wastewater Treatment

Bio-Organic Catalyst

- Establish the conditions for rapid oxygen penetration into the cell wall of the microorganisms.
- Increase the volume of biogas yields in anaerobic digestion system through increased solubilization of components of waste stream.
- Provide highly enriched bio-available nutrients required for optimizing biological transformation of organic pollutants.
- Significantly enhance the reduction of discharges in wastewater treatment facilities.
- Degrade biological film growth, improving healthcare safety, reducing contamination and corrosion.
- Degrade mineralization within tanks, pipes and filters.
- Cleave (hydrolysis) the molecular bonds of fats, oils and greases (FOGs) to glycerol and fatty acids.
- Offer superior performance in eliminating noxious and hazardous (odors) volatile organic compounds (VOCs).
- Has the ability to substantially speed up the remediation of petroleum hydrocarbons (TPH).
- Dramatically improves the microbial vitality in indigenous ecologies.

Bio-Organic Catalyst Mechanisms of Action

Catalyzation: Reduces the amount of energy required for biological or chemical reactions to occur, then participates repeatedly in these reactions while reducing the time and rate required for turnover (accelerates nature's degradation process 100-fold faster).

Solubilization: BOC solubilizes the cellular structure of organic waste, thereby increasing gas transfer rates, and making it easier for naturally occurring bacteria to digest organic substances and oxidizing agents to work.

Oxygenation: Seeds formation of micro-bubbles that act as a platform for biological and chemical reactions to occur, and creates a stable, time-delivered system to disperse oxygen throughout the water column thereby increasing the availability of oxygen beyond Henry's Law (more available oxygen enables aerobic reactions that will speed up the natural degradation process).

Competitive Advantages: The superior performance and broad applicability of BOC over traditional chemical agents, or biologically derived products, provides profound competitive advantages in the current marketplace. BOC patented bio-organic catalysts have the ability to exclusively meet the key performance objectives now faced by facilities management, such as nitrogen discharge reduction, increased carrying capacity, FOG treatment, sludge reduction, higher aeration capability, reduction of mineralization build-up, and reduction of total discharges.

Convenience and Versatility in Multiple Applications: The integrated nature of BOC products, combining multiple catalytic process elements, provides extraordinary versatility in application. While the actual process mechanism is founded on complex biochemical interactions, the methods for use are quite simple and do not represent a barrier to product acceptance.

Significant Performance: BOC products offer customers a means to achieve superior performance objectives, often improving the fundamental economics of the applicable process.

Efficacy: BOC products have independently demonstrated broad and significant efficacy in process and application enhancement. In the wastewater operation, it can reduce energy usage up to 40% and sludge disposal/ treatment volumes up to 30%, eliminate odors, clean FOG accumulation in lift stations, and help facilities reach regulatory discharge requirements.

Non-Toxicity: BOC products are non-toxic, non-caustic, non-corrosive, non-irritating, hypoallergenic, bacteria-free and biodegradable. The environmentally friendly features of the products substantially reduce exposure and liability to the user, its workers and the environment, and don't trigger costly OSHA or hazardous material handling requirements.

Fast Results: BOC offers dramatic improvements achieved very quickly. In wastewater treatment facilities, the early results odor control, FOG elimination, and aeration energy optimization are seen within a few days.

Shifting The Nature of Biological Treatment: The biological mechanisms of the treatment system are beneficially and fundamentally changed, thus reducing major organic contaminant loads from the waste stream. This results in dramatic improvements in reduction of collection system corrosion of concrete, steel, and aluminum surfaces from H₂S gases, loading and throughput at the plant, and reduced energy costs, sludge disposal costs, maintenance and downtime.

Displacing Capital Expenditures: BOC can immediately increase the efficacy and efficiency of wastewater treatment systems, enabling capacity expansion to be deferred for years. The avoidance of capital costs, coupled with lowered operating costs, has the potential to significantly restructure water treatment project economics in favor of BOC biocatalysts.

Economic Analysis

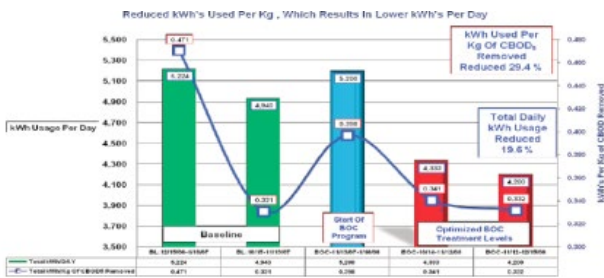
BOCs offer wastewater operators a viable and rapid solution that transforms the entire biological processing parameters of both the collection system and wastewater treatment facility, optimizing the entire system-wide operations. Eliminating odors, educing energy consumption, and increasing renewable energy yields are all benefits that are brought to operators by the BOC advanced bio-catalytic products.

Every wastewater system's economic model will be based upon their specific costs of odor and corrosion prevention, energy usage and biosolids disposal. Off-setting capital improvements and plant expansions can save municipalities and companies substantial investment monies. Improving discharges benefits our environment and regulatory compliance.

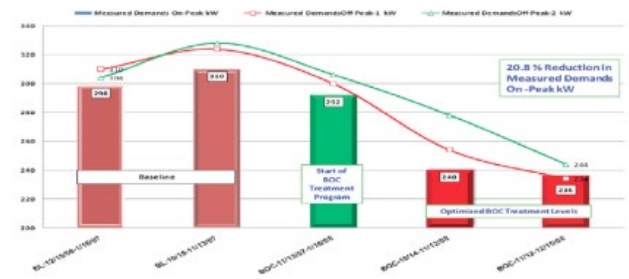
BOCs can be an integral part of facilities' upgrades and maintenance programs. Cooperative relationships with engineering design and build installations can provide improvements to the payback analysis.

BOC Reduction of Electrical Costs

REDUCED KWH'S USAGE PER DAY, PER KG

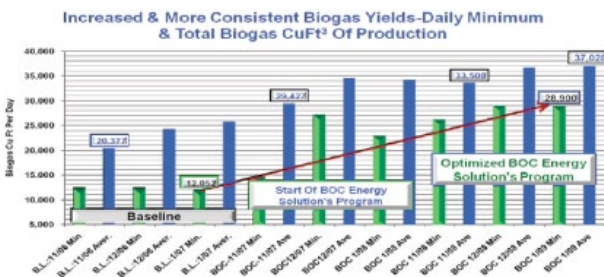


REDUCING MEASURED PEAK AND OFF PEAK KWH USAGE

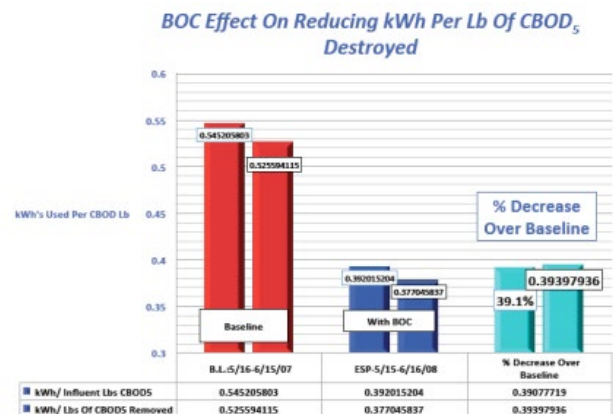


BOC Methane Yield Improvements

INCREASED MINIMUM & DAILY AVERAGE BIOMETHANE PRODUCTION (CU FT3)



INCREASED MINIMUM & DAILY AVERAGE EFFECT ON INCREASING CU FT OF BIO-GAS PER GALLON OF PRIMARY FEED SLUDGE



Bioaquatic Toxicity and Safety Studies



The Bio-Organic *Seal of Safety*[™] is our trademark declaration of our commitment to offering green biocatalytic solutions that shift the treatment of our water resources to a more sustainable ecological model. BOC product formulations have undergone rigorous independent testing, including leading recognized EPA certified laboratories. *BOC product compositions have shown non-toxicity ratings far exceeding generally available green cleaners and traditional chemical based products.*

Not only are our BOC compositions extremely safe, they also have important benefits to the downstream systems or water bodies they impact. This is tied to the on-going bio-catalytic reactions of the molecular structure of organic contaminants.

There are many different aspects to consider when accessing the safety and toxicity profile of a chemistry:

- One, is the sensitivity of humans and animals to exposure to the chemistry (e.g., skin, eyes, lungs). BOC has shown to present little, if any, sensitivity in this regard.
- Second, is the biodegradability over time of the chemistry. BOC has shown an ability to accelerate the natural biological reduction rate within ecosystems or engineered wastewater treatment systems.
- Third, bio-aquatic toxicity testing of any chemical compound in EPA testing protocols is tied the toxicity of that compound on highly sensitive shell fish. This provides the basis for the EPA testing and ratings (LC 50). BOC showed ratings of over 200 ppm to 316 ppm—much higher than almost any chemical, green or otherwise, on the market today.

Applications



Agriculture – Water/Soil Conditioner

We are actively working on transforming water treatment use in agriculture through the ability of our bio-catalytic product, Phyto-C₃[™], to replace toxic chemical treatments in remediating fouling of irrigation lines and emitters, with a green and safe product that prevents these problems from occurring. Furthermore, our bio-catalytic technology is showing significant benefits to improving the nutrient and water uptake by plants.

The focus on soil microbiome has become increasingly important to the optimal management of water and fertilizer use by farmers. Additionally, the ability of a robust microbiome to provide carbon sequestration is a very timely focus on governments and industry worldwide.

Our product, Phyto-C₃[™], brings incredible benefits to enhancing soil microbiome, especially the aerobic microbes within the soil which are essential to its health. Phyto-C₃[™] has shown quite dramatic results in reducing the accumulation of salts and iron in soils, which is another important contribution to soil health.

Due to both enhanced nutrient and water uptake by plants, Phyto-C₃[™] has shown in numerous case studies an ability to substantially improve harvest yields and plant health. In addition, the flavors and nutrient values of the plants have shown strong improvements.

Phyto-C₃[™] has the potential to bring benefits to both traditional and sustainable agriculture operations. Through transforming the bio-catalytic mechanisms of water, we will positively affect the economics and ecological dynamics of every farmer.

Applications



Anaerobic Digestion – Optimizing Anaerobic Digestion Systems

BOC offers substantial improvement in anaerobic digestion, providing higher yields of bio-methane, improved sludge quality, reduction of total solids, and significant reduction of noxious sludge odors. BOC has shown, in municipal and industrial anaerobic digestion systems, that they act on the TVS and TS components, providing higher reduction rates over baseline values. BOC can increase bio-methane yields over 100%, with up to 30% reduction in total solids discharged. Sludge quality is enhanced due to more complete digestion and sludge odors will be greatly reduced, including odors in dewatering operations.

BOC accelerate the anaerobic digestion processes into more optimized conversion efficiency. Case studies show a much higher yield per pound, or kilo, of organic waste biogas, while clearing the internal accumulations that build up over time. BOC requires little capital equipment expenditure, as installations involve simple injection pumps, along with a reservoir of BOCs. Results become evident relatively quickly, as a faster release of high bio-methane value components of the waste material shifts the internal biomass within the anaerobic digester into the Methanogenesis phase, increasing the bio-methane yields and total consumption of volatile fatty acids.

Applications in municipal and food processing AD systems showed close correlations between higher TS and TVS conversion rates and higher bio-methane yields on a dry weight comparison, pointing towards an acceleration of the phased Methanogenesis cycle. This results in total overall enhancement of complete biomass vitality and microbiological population densities involved in the anaerobic processes required for optimal bio-methane yields and BTU values.

The combined total mass balance analysis shows improvements in obtaining optimal bio-methane yields, On a dry weight TVS basis, can run from 25% – 100% over comparable baselines. Additionally, the final biosolids quality and weight reductions (up to 25%), including substantial elimination of noxious biosolids odors, all indicate a more complete biological conversion of nutrient values.

Benefits Include:

- Increase bio-methane yields
- Allow more complete digestion of solids
- Reduce volume of solids
- Reduce odors from solids in dewatering operations
- Improve quality of solids

Applications



Aquaculture – Improvement of Aquaculture Operations

Clear-Cat™ improves water quality, clarity, reduces chemical usage, and improves fish mortality in aquaculture operations. The BOC water treatment product line offers a powerful broad spectrum bio-catalyst that significantly accelerates the natural biological degradation rate of organic waste by up to 1000 times, and provides very high oxygen transfer characteristics, and accumulation of greater dissolved oxygen in water bodies.

Benefits Include:

- Improved available dissolved oxygen
- Biological reduction of sulfides, ammonia, phosphorus and nitrite
- Reduced environmental stress on stocks
- Reduced turbidity
- Reduced / eliminated phytoplankton growth
- Oil and grease eliminated
- PH regulated
- Reduced bacterial growth (Enhanced bio-security)
- Cleaner tanks / filters / reducing maintenance
- Reduces energy consumption (aeration system)
- Odor Control
- Beneficial to Recirculating Aquaculture Systems (RAS)
- Breaks Down Organic Binders & Mineralization

Applications



Bio-Catalytic Cleaning – Advanced Bio-Catalytic Solutions

Bio-Organic Catalyst, Inc.'s biocatalysts (BOCs) are the next generation in green chemistry; where surface waste contaminants are both safely cleaned and then rapidly broken down via bio-catalysis into their fundamental constituents. BOCs offer the highest performance of any deodorizer, cleaner or degreaser; with a non-toxic and biodegradable (green) cleaning chemistry, combined with a virtually instantaneous catalytic breakdown (biodegradation) of the waste contaminants; yielding ultra-clean surfaces, substrates, and drainage systems.

The BOC biocatalyst technology represents a transformation for the cleaning industry, whereby all general cleaning, degreasing, hydrocarbon remediation, drain cleaning, odor elimination, and wastewater discharges are synergistically integrated. The total process becomes upgraded into a single and cost-effective environmental management model, benefiting staff, cleaning quality, and the bottom line.

Benefits Include:

- Eliminate microscopic organic bio-film growth ('biofilms'), as well as the residues of traditional detergents, chemicals and sanitation agents; resulting in a new standard in cleanliness and public health.
- Meet EPA and USDA requirements for use in food preparation and discharge into public waterways. Use of BOCs has demonstrated impressive results in reducing environmental pollutants and wastewater discharges.
- Are completely non-toxic, biodegradable, and non-allergenic.
- Will replace most cleaners, detergents, degreasers, and solvents. BOCs bring immediate elimination of septic conditions and noxious gases.
- The toughest stains and soils are deeply cleaned.
- Dangerous volatile gases and odors are immediately neutralized.
- Greases and oils are easily removed and rapidly catalyzed.
- Drains are made free-flowing.
- Wastewater discharges are treated 'at-source'.
- Microscopic bio-films that harbor toxins are quickly dissolved.
- Both surfaces and underlying substrates are left ultra-clean.

Applications



Composting & Animal Care – Odor Control & Composting Rates

BOC provides exceptional values to any composting operation. It will, when sprayed onto a compost pile, instantly neutralize noxious odors. This can be accomplished at a range of dosage rates depending upon turnover of piles, nature of organic wastes, weather conditions, etc. Atmospheric misting is also extremely effective and will provide a much improved odor neutralization than any competing product, at a very competitive price.

Recent scientific studies have shown confirmation of the ability of BOC to accelerate composting rates, resulting in greater turnovers to operators and higher quality compost. Easily applied simply by adding to the water used to water compost piles, BOC offers a fundamental tool that any composting operation will find has compelling operational and economic value.

The use of BOC biocatalytic compositions to establish optimal Ecological Animal Care is an incredibly exciting area for us. Ecological Animal Care is built on our unparalleled performance in odor elimination, the resulting substantial reduction in insects and pests, and in enhancing the breakdown of animal's wastes on a highly accelerated basis. These capabilities are always a major factor to either the pet owner, or large animal feeding operations (CAFOs).

We offer the highest safety profile with superior performance. Urine odors are primarily an ammonia type compound, which with simple spraying is rendered immediately neutralized. Feces and their cleanup has never been more effectively handled due the capabilities of BOC biocatalytic compositions to breakdown the organic components which soak into substrates, such as cement floors or fabrics.

In stables and large animal feeding operations, including piggeries, the highest animal safety characteristics is combined with both the most effective odor neutralization agent on the market, but also a catalytic chemistry that breaks down the wastes. Effective at high dilutions either through spray down system, or manually applied, it is now possible to bring any facility to a state of being odor free and ultra-clean.

Benefits Include:

- Instant neutralization of odors on contact
- Accelerated composting rates
- Improved quality of compost
- Higher turnover of compost
- Reduced cost in operations

Applications



Facilities Management – Environmental Solutions

BOC bio-catalytic compositions, Eco-Cat Clean™ and Aqua-Cat™ offer the highest level of performance in deep cleaning and odor control, combined with a safety profile that is unequaled in the industry. The array of benefits made possible with BOCs can be applied to all of the major environmental challenges encountered by the facilities manager.

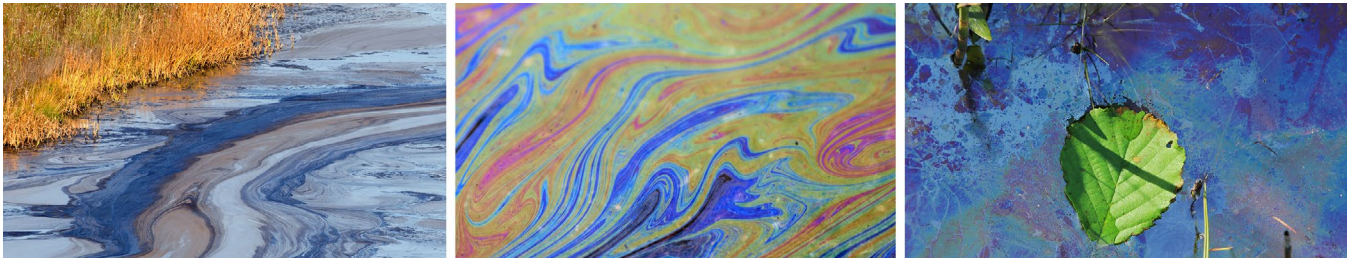
Odors from grease interceptors and organic waste containers can be cost-effectively controlled with simple equipment set-ups. Pools and spas will be naturally kept cleaner and clearer, while reducing the fumes of traditional pool chemicals, all while substantially reducing fouling and mineralization build-up. The ultra-deep cleaning of the full spectrum of organic pollutants, including deeply embedded greases and oils, and hydrocarbons, enables the facilities manager to bring back deeply stained surfaces to their original cleanliness.

Eco-Cat Clean™ can be added to kitchen and bar cleaning routines, parking garages and driveways, providing a solution to the deeply embedded stains, lingering odors, slippery floors, and drain cleaning, that no other cleaning product line has ever been able to solve.

Benefits Include:

- Ultra-Deep Cleaning of Kitchens, Floors, Bars, Garages.
- Instantaneous Odor Neutralization.
- Eliminate Hazardous Chemicals and Discharges.
- Dissolve Biofilms and other scum-like residues.
- Reduce maintenance time and equipment failure.
- Highest safety and environmental compliance standards.

Applications



Hydrocarbon Cleaning/Remediation - Accelerated Degradation of Hydrocarbons

NONTOX® offers a highly effective bio-catalytic cleaning agent for petroleum hydrocarbon (TPH) pollutants. NONTOX® acts on the full spectrum of petroleum hydrocarbon pollutants, providing very deep cleaning capabilities, especially within substrates, as it solubilizes these insoluble pollutants, rendering them more suitable for subsequent environmental treatment procedures.

NONTOX® is highly water-soluble and is able to be used effectively at extremely high dilutions through any water spraying or foaming systems. The safety and economy of using bio-catalytic compositions surpasses traditional harsh chemical agents in addressing the primary challenges and underlying ecological restoration mechanisms that are required in protecting the environment.

Benefits Include:

- Immediate action on insoluble TPH compounds
- Immediate rise of flash point of fuels
- Enhancement of subsequent remediation procedures of TPH pollutants
- Stimulation of indigenous microbiological populations
- Ultra-Deep cleaning of substrates of TPH pollutants

Applications



Odor Control Management – Environmental Solutions

BOC based VOC odor management systems provide the world's highest performance standards in eliminating noxious odors and hazardous VOCs.

BOC based systems are the next generation green chemistry, both exceptionally safe to use and able to provide accelerated bio-remediation of the toxic biological conditions which produce odors.

Benefits Include:

- Extremely cost effective due to the ability to be delivered through water based spray systems at high dilution levels.
- Used successfully in installations throughout the world to solve the toughest jobs.
- Simple, flexible, and immediately effective upon contact.
- Neutralizes ammonia, hydrogen sulfide and hydrocarbon type noxious VOC compounds in solid waste, organic compositing, and sludge treatment.

Applications



Paper and Pulp – Environmental Solutions

Bio-Organic Catalyst has introduced a green, non-toxic, chemistry model that combats slime formation, and its problems in paper processes, replacing the toxic biocides normally used in papermaking process.

Papermaking processes uses a huge amount of water, with most of it recirculating throughout the system. Recirculation increases the content of soluble and insoluble organic waste materials that are found in the raw pulp, including wood fiber fines, starch, organic polymers and others.

Due to this abundance of organic wastes within the paper process water, an excellent microbial broth for the development of a culture of microorganisms, especially slime producing bacteria. This slime can grow abundantly, and sticks all over the wet end section machinery, including: white water pit, head box, pipe slow flow sites like elbows, hanging from low vacuum boxes, every dewatering element (foils boxes) and frame.

Instead of being a bacterial killer, like normal biocides, BOC eliminates the formation of biological film growth by increasing oxygen transfer rates within the process water, and elevating the dissolved oxygen levels in water.

The ability of BOC bio-catalytic formulations to increase oxygen transfer rates has been proven scientifically, and is also a key factor in eliminating odors and enhancing aerobic biological conditions in water bodies, both important factors in paper manufacturing, where smells and lagoon discharge treatment are critical operational issues, especially in those processing recycled fibers.

It has been proven that machine producing paper from recycled fibers (test liner, corrugating medium, tissue) can be kept clean and free of slime adding BOC to process water. Another advantage when BOC is added in papermaking process is that it will benefit the wastewater treatment process by accelerating the oxidation mechanism.

In the papermaking process, BOC formulations have shown to substantially reduce the manufacturing downtime required in the cleaning of rollers due to their impact on dissolving the molecular structure of the starch that accumulates on the surfaces of rollers, requiring periodic cleaning with solvents. This economic aspect provides a strong incentive to the environmental aspects of replacing toxic biocides.

Benefits Include:

- Eliminates the formation of biological film.
- Increase oxygen transfer rates.
- Reduces manufacturing downtime for cleaning.

Applications



Wastewater Treatment & Collection Systems – Aeration & Biosolids

BOC biocatalytic compositions provide numerous benefits to all of the biological processes (aerobic and anaerobic) used to convert waste loadings into high quality discharges. The array of benefits made possible with BOCs can be applied system-wide to bring critical solutions to the fundamental challenges of operators. Odors, improving dissolved oxygen levels, reduction of organic loadings and biosolids, and improvements in discharges, are all operating parameters that can be improved with use of BOC.

BOC will allow a higher conversion of organic wastes, reduce energy usage, and lower sludge volumes. BOC will therefore substantially expand a wastewater facility's total loading and capacity requirements. By greatly lowering the quantity of biosolids, processing and dewatering requirements are reduced. Transportation costs for hauling away these biosolids to landfills is likewise reduced.

BOC is unique in the ability to provide substantial improvements in dissolved oxygen levels, while simultaneously reducing the energy requirements of the aeration systems. This is both economically compelling, as well as critically important when the wastewater system is attempting to treat heavy organic loadings than the system is optimally designed.

BOC has phenomenal H_2S gas (odor) reduction performance compared to other chemical or biological agent in the marketplace. Importantly, it also offers an ability to biologically reduce sewage upstream of wastewater treatment facilities. BOC is able to treat miles of sewer lines downstream of injection, cleaning the biological growth (slime layers) within the pipes which are the underlying biological sites for anaerobic conditions leading to Hydrogen Sulfide (H_2S) formation, and creating higher bulk sewage dissolved oxygen levels.

Benefits Include:

- Elimination of odors
- Eliminates floating grease build-up
- Reduces sludge volumes
- Enhances biological processing (BNR)
- Cleans collection system (Odors, Slime & FOGs)
- Reduces oxidation chemicals
- Cleans concentrated animal feedlot operations (CAFO) lagoons
- Reduce chemical costs
- Much safer than harsh and toxic chemicals

Applications



Water Clarification – Water Clarity & Mineralization Treatment

BOC has very synergistic characteristics that enhance water clarification and nearly all treatment systems used to purify water. Municipal water systems, agricultural irrigation, aquaculture ponds, cooling towers, lagoons, rivers, pools, and hot tubs are all systems where water purity quality are dramatically impacted by BOC, and where BOC has distinct and proven technical advantages over any other chemistry. BOC bio-catalytic technology works by increasing oxygen transfer rates and elevating the dissolved oxygen levels within water bodies (a key water quality measurement). This critical mechanism works in conjunction with a rapid breakdown of the organic wastes within the water column to create a higher purity of water.

BOC has shown the ability to eliminate the buildup of mineralization and biological film growth in water lines and tanks, reducing the organic waste by-products that feed pathogen growth and odorous conditions. The ability to increase dissolved oxygen levels has proven to be the key factor in the Company's success in eliminating odors in water bodies. The bio-catalytic capabilities provide a powerful broad spectrum enzymatic breaking of molecular bonds. A key feature of BOC products is the immediate elimination of noxious odors upon contact. Thereafter, BOC naturally accelerates the release of pollutant streams into a more readily consumable food source for ecological restoration.

Benefits Include:

- Clarification of water
- Reduction of sanitizing chemicals
- Reduction of waste by-products remaining in water column
- Reduction of chemical odors (VOCs)
- Elimination of mineralization buildup
- Elimination of organic growth and films

Products

AD-Cat™

Bio-Catalytic Treatment for Anaerobic Digestion



AD-Cat™ is a broad-spectrum biocatalytic formulation that improves the overall performance of Anaerobic Digestion (AD) systems. AD-Cat™ works by solubilizing the waste components, thereby decreasing viscosity, and allowing the waste stream to be better utilized by the microorganisms within AD systems.

AD-Cat™ will help prevent insoluble waste components from forming floating layers, or internal blockages, within the AD system.

AD-Cat™ allows more consistent biomethane yields to be produced, and optimize waste stream loadings into the AD system.

AD-Cat™ offers the following benefits to operators:

- Improves AD loading of insoluble waste components.
- Solves formation of blockages with AD systems.
- Improves economic performance of AD systems.
- Supports more complete digestion conversion rates.
- Offers higher quality bio-methane yields.

DIRECTIONS FOR USE

AD-Cat™ can be injected into water lines, aeration devices, and sludge lines. Dosage rates will vary depending on numerous factors, including organic loading levels, and specific operator objectives.

Anaerobic Digestion: The basic dosage metric is: 250 ml up to 1,000 ml, per dry ton of Volatile Solids (VS). Consult with technical specialist to optimize installation and performance of AD-Cat™.

PRODUCT SPECIFICATIONS

AD-Cat™ is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified yeast extracts, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

Clear-Cat™

Bio-Catalytic Water Clarifier



Clear-Cat™ is a bio-catalytic composition that transforms water care with a new technical breakthrough that addresses the key challenges of maintaining water system quality and clarity, specifically the management of the challenges of organic loadings.

Clear-Cat™ works through the power of microbubble oxygen transfer, allowing higher aerobic levels within the water and reducing biological film growth and mineralization. Clear-Cat™ enhances the effects of oxidizing, sanitizing, and anti-scaling chemical agents, while reducing the quantities required.

Clear-Cat™ safeguards equipment and improves water discharges.

- Provides the highest level of water quality and clarity.
- Reduces chemical usage.
- Helps clean heat-transfer surfaces.
- Eliminates fouling of filters.
- Improves water quality and personnel safety.
- Reduces ammonia.

Clear-Cat™ is compatible with all sanitizing chemicals and filtration systems.

DIRECTIONS FOR USE

Water Bodies: 1 oz. (30 ml) of Clear-Cat™ for each 28,000 gallons (106 cubic meters) of water. In larger aquaculture operations, dosage rates will run 1-2 ppm. Dose weekly, or every other week, depending upon usage.

Cooling Towers: 1-2 ppm of Clear-Cat™ based on water quality. Consult with your Clear-Cat™ water treatment specialist.

Clear-Cat™ can be added manually, or pumped, into the cooling tower basin with a suitable pump.

PRODUCT SPECIFICATIONS

Clear-Cat™ is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified yeast extracts, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

CT 100™

Bio-Catalytic Water Clarifier



CT 100™ enhances water clarity, mitigates fouling of surfaces and filters, and allows reductions in chemical agents.

CT 100™ creates highly reactive nanobubbles that increase oxygen transfer within water. These nanobubbles act to dissolve both biological and inorganic fouling.

CT 100™ offers synergies with existing sanitizing chemicals and filtration systems.

- Reduces energy loss.
- Improves water discharges.
- Reduces sanitizing chemistries.
- Maintains cleaner surfaces.
- Eliminates fouling of filters.
- Improves corrosion control.
- CT 100™ is formulated for chelating and sequestration of calcium and magnesium ions to soften the water.
- CT 100™ provides protection against corrosion on metal and glass surfaces.

DOSAGE RATE

Cooling Towers: 0.25 – 2 ppm (parts per million) of water volume.

PRODUCT SPECIFICATIONS

Recommended Shelf Life: 2 years. Storage Temperatures: Minimum 2°C, Maximum 50°C.

CONTENTS

Water, highly purified yeast extracts, non-ionic surfactants, and chelating agents.



HAZARD STATEMENTS (CLP)

H316 Causes mild skin irritation.

H320 Causes eye irritation.

CAUTION

Keep out of the reach of children.
Wear protective gloves / protective clothing / eye protection / face protection.
Wash skin thoroughly after handling

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF ON SKIN: Wash with plenty of soap and water. If eye or skin irritation occurs: Get medical advice and attention.

Manufactured in the USA under domestic and international patents.

Products

Eccomate®

Municipal and Industrial Odor Control



Eccomate® instantly neutralizes organic odors and volatile organic compounds (VOCs), offering exceptional odor control and reduction of VOC emissions.

Eccomate® is a highly-concentrated bio-catalytic composition with extraordinary oxygen transfer capabilities. Eccomate® will treat the entire spectrum of organic waste odor issues.

- Neutralizes all noxious odors on contact.
- Reduces VOC emissions, including greenhouse gases.
- Accelerates composting rates.
- Promotes aerobic biological conditions.
- Effective at high dilutions in misting and spray systems.
- Suitable for garbage trucks, conveyor belts, bio-solids, dewatering, food waste processing, landfills, and recycling facilities.

Eccomate® stimulates the vitality of indigenous microorganisms by providing substantial improvement in oxygen availability, and the release of waste components for accelerated consumption by indigenous microorganisms.

DIRECTIONS FOR USE

Application rates can be increased proportionately to the area being treated and most importantly, the dispensing system being deployed at the site.

Application Dilutions:

Spray Applications: 1x50 of Eccomate® in water.

FOG/Misting: 1x2,000 of Eccomate® in water.

PRODUCT SPECIFICATIONS

Eccomate® is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS:

Water, highly purified bio-organic catalysts from plant and mineral sources, non-ionic surfactants.

CAUTION:

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

Eco-Cat™

Bio-Catalytic Treatment Solid & Liquid Wastes



Eco-Cat™ is a bio-catalyst that provides a highly effective solution to treat fats, oils, and greases (FOGs) and hazardous odors (VOCs) within wastewater treatment and collection systems, sludge and residuals handling and dewatering.

Eco-Cat™ solubilizes fats, oils and greases (FOGs), through the breaking of ester molecular bonds, making these waste components more available to a system's microorganisms as a carbon food source.

Eco-Cat™ increases oxygen transfer and dissolved oxygen (DO) levels in the water column and improves the ability of the wastewater treatment system to reduce organic loadings.

- Eliminates hazardous gases (VOCs) and noxious odors.
- Rapidly solubilizes fats, oils, and greases (FOGs).
- Increases dissolved oxygen (DO) in sewer lines and lagoons.
- Provides superior breakdown of insoluble wastes.
- Completely safe to personnel.

Eco-Cat™ provides an immediate elimination of the strongest odors, including hydrogen sulfide (H₂S) and, most importantly, will shift the biological conditions that produce odors.

DIRECTIONS FOR USE

Metered Pumps: High-flow collection systems, injected, or sprayed at rates of 2 – 5 ppm of Eco-Cat™, and up to 10 ppm of Eco-Cat™ in low-flow conditions. Consultation with technical specialist recommended to optimize installations.

Power Washers/Hoses: 1 oz. of Eco-Cat™ to 1 gallon (3.78 liters) of water. 1 oz. of Eco-Cat™ to 1 quart (1 liter) of water.

PRODUCT SPECIFICATIONS

Eco-Cat™ is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified bio-organic catalysts from plant and mineral sources, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

Eco-Cat Clean™

Bio-Catalytic Cleaning & Odor Control



Eco-Cat Clean™ is a breakthrough bio-catalytic cleaning product offering superior cleaning of surfaces, floors, drain lines, and odor control.

Eco-Cat Clean™ provides a deeper cleaning of substrates than other cleaning products, due to its advanced bio-catalytic action, which degrades organic waste components embedded within substrates. Eco-Cat Clean™ offers instantaneous neutralization of the strongest odors.

Eco-Cat Clean™ dissolves the organic residues and biological films that can produce odors in drains, floors, garbage containers, and food preparation areas.

- Universal cleaner for sinks, counter tops, floors, drains, and glass.
- Leaves floors squeaky clean.
- Non-toxic, biodegradable, nonirritating, non-caustic, and noncorrosive.
- Removes fats, oils and greases.
- Odors neutralized on contact.
- Keeps drain lines clean and flowing.
- Eliminates drain biofilms that produce fruit flies.

Eco-Cat Clean™ application areas include:

- Animal Health
- Shipping/Ports
- Drain Lines
- Bar Floors, Sinks and Drains
- Floors/Tile/Stone
- Garbage and Recyclables
- Grease Interceptors and Leach Fields
- Kitchens/Food Preparation
- Loading Docks/Parking Lots

DIRECTIONS FOR USE

Glass Cleaner: 1 oz. Eco-Cat Clean™ in 32 oz. water. (30 ml per 1 liter water)

Hand Sprayers: 2 oz. Eco-Cat Clean™ in 32 oz. water. (60 ml per 1 liter water)

Mop Buckets: 2 oz. Eco-Cat Clean™ in 128 oz. water. (60 ml per 4 liters water)

Power Washers: 4 oz. Eco-Cat Clean™ in 128 oz. water. (120 ml per 4 liters water)

Foam Guns: 4 oz. Eco-Cat Clean™ in 256 128 oz. water. (120 ml per 4 liters water)

Foggers: 1 oz. Eco-Cat Clean™ in 256 128 oz. water. (30 ml per 4 liters water)

Drain Lines: 16 oz. Eco-Cat Clean™ per 1,000 gal. interceptor. (1/2 liter per day)

PRODUCT SPECIFICATIONS

Eco-Cat Clean™ is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified bio-organic catalysts from plant and mineral sources, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

Eco-Cat™ General Purpose Cleaner Bio-Catalytic Cleaning Solution



Eco-Cat™ General Purpose Cleaner (GPC) is a breakthrough in green cleaning that surpasses traditional chemical, detergent or enzymatic cleaners in performance and safety.

Eco-Cat™ GPC is a unique non-enzymatic biocatalyst designed to be used in ultra-sonic cleaners, instrument washers and holding trays where powerful oxygen nanobubbles dissolve the organic residues on surfaces.

Eco-Cat™ GPC improves the science of sanitation by creating ultra-clean surfaces while reducing tank fluid organic sludge and odors.

Eco-Cat™ GPC is non-toxic, non-enzymatic, non-caustic, rapidly bio-degradable, and safe for humans and the environment.

DIRECTIONS FOR USE

Ultrasonic bath, holding trays:

Add one (1) capful (1/4 oz / 7.5 ml) to one gallon of water. Change solution daily.

Instrument washers:

Add two (2) capfuls (1/2 oz / 15 ml) to receptacle without additional detergent. Change solution daily.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

EcoSystem Plus®

Bio-Catalytic Water & Sludge Treatment



EcoSystem Plus® is breakthrough bio-catalytic product that increases dissolved oxygen transfer rates and dissolved oxygen (DO) levels in the water column. EcoSystem Plus® improves the biological oxidation performance of aerobic wastewater treatment systems, on a dose-responsive basis.

EcoSystem Plus® increases the solubility of organic wastes, including the more problematic FOG's (Fats, Oils, and Greases).

EcoSystem Plus® enhances anaerobic conversion rates in biogas fermenters. It allows for optimization and increased loading of TVS (Total Volatile Solids). EcoSystem Plus® reduces the volume of sludge, improves sludge quality, and greatly reduces odorous volatile compounds (VOCs).

Key operational benefits include:

- Improves oxygen (DO) Transfer.
- Reduces aeration energy.
- Optimizes anaerobic digestion.
- Improves bio-solids and sludge management.
- Reduces noxious odors.
- Improves wastewater discharges.

DIRECTIONS FOR USE

EcoSystem Plus® can be injected into water lines, aeration devices, and sludge lines. Dosage rates will vary depending on numerous factors, including organic loading levels, and specific operator objectives.

Aerobic Wastewater Treatment: 1 ppm EcoSystem Plus® per 100 BOD in organic loading is the basic metric used. In deployment, dissolved oxygen (DO) readings will guide dosing rate. Operator will adjust dosage rate to desired DO level.

Anaerobic Digestion: The basic dosage metric is: 250 ml up to 1,000 ml, per dry ton of Volatile Solids (VS). Consult with technical specialist to optimize installation and performance of EcoSystem Plus®.

PRODUCT SPECIFICATIONS

EcoSystem Plus® is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified bio-organic catalysts from plant and mineral sources, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

Fiber-Cat™

Bio-Catalytic Water Treatment



Fiber-Cat™ is a bio-catalytic water treatment agent that transforms the traditional chemistry model in the manufacture of paper-based products.

Fiber-Cat™ offers advanced biocatalytic process improvements:

- Increases production speed.
- Improves production quality.
- Lowers production costs.
- Lowers energy consumption.

Fiber-Cat™ dissolves slime growth, reduces biocide requirements, and lowers maintenance issues. Fiber-Cat™ will improve total water quality and bring benefits to downstream water treatment.

The benefits of Fiber-Cat™ include:

- Reduces the growth of biological films (slime).
- Reduces the formation of organic compounds (stickies).
- Reduces maintenance costs.
- Improves fiber strength.
- Improves paper quality.
- Improves de-inking of fiber.

Fiber-Cat™ creates more aerobic biological conditions within the process water.

DIRECTIONS FOR USE

Fiber-Cat™ is dosed at 70 – 150 ml per ton of fiber, depending on the manufacturing requirements of the pulp product and the operator objectives.

Fiber-Cat™ can be introduced into the pulping phase to replace enzymes and into the whitewater to reduce biocide usage.

PRODUCT SPECIFICATIONS

Fiber-Cat™ is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified yeast extracts, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

NONTOX®

Bio-Catalytic Treatment of Petroleum Hydrocarbons



NONTOX® is a powerful bio-catalytic agent for cleaning TPH (Total Petroleum Hydrocarbon) from soils and all hard surfaces.

NONTOX® releases the TPH pollutants in a form more compatible for microbial remediation.

NONTOX® stimulates natural biological reactions within indigenous microbial ecosystems through enhancement of oxygen transfer, thereby supporting accelerated remediation rates of the TPH pollutants.

NONTOX® will treat virtually all TPH pollutants, including, crude oil, jet fuel, and diesel oil.

- Enhances remediation of TPH (Total Petroleum Hydrocarbons).
- Provides excellent surface cleaning of TPH components.
- Treats all types of petroleum hydrocarbon contamination.
- Helps in the precipitation of metals in wastewater discharges.
- Reduces time associated with soil and water remediation and cleanup.
- Provides immediate and ongoing VOC (Volatile Organic Compounds) suppression.
- Reduces fire hazards, increasing flash point, and auto ignition threshold points, in gasoline or fuel oils.
- Does not require personal protective equipment.

NONTOX® is fully compatible with all application equipment, including, hand or power sprayers, helicopter, airplane, and floating equipment. NONTOX® requires no special personnel protective equipment.

DIRECTIONS FOR USE:

NONTOX® may be applied to TPH contaminated soil, shorelines and beaches at dilutions of 0.2% – 2%. Rates of application will vary with TPH concentrations, equipment specifications, and soil types.

For general dilution ratios, use a mixture of 4 gallons (15.2 liters) of water with 1 gallon (3.8 liters) of NONTOX® to treat 1 cubic yard (1 cubic meter) of contaminated soil.

NONTOX® should be allowed to soak for up to 30 minutes to maximize contact time on heavily coated surfaces. Type of power washing system will determine optimum dilution rate.

Cleaning Dilution:

For Light Cleaning: Use 1 part NONTOX® per 256 parts water.
For Heavy Cleaning: Use 1 part NONTOX® per 50 parts water.

Conditions for Use: Water salinity does not negatively affect product performance. Water temperature under 2°C can affect product performance. Aged or highly viscous concentrations of hydrocarbon may require presoaking prior to removal.

Flammability: None

Shelf Life: Maximum 2 years.

Special Handling and Worker Precautions for Storage and Field Application: None

Skin, Eye and Hand Contact: Use of protective eyewear and rubber gloves is recommended under normal GMP's.

Ventilation: None required.

Respiratory Protection: None required.

Maximum and Minimum Storage Temperatures: Maximum temp: 50°C, Minimum temp: 2°C.

PRODUCT SPECIFICATIONS:

NONTOX® is non-toxic, non-caustic, and safe to handle with a recommended shelf life of two years. May be stored with confidence at temperatures below 125F /50°C.

CONTENTS

Water, highly purified bio-organic catalysts from plant and mineral sources, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Manufactured in the USA under domestic and international patents.

Products

Phyto-C₃[™]

Water/Soil Conditioner



Phyto-C₃[™] is a water/soil conditioner utilizing biochemistry that offers excellent cleaning and preventative maintenance of organic and inorganic fouling of irrigation emitters and systems.

Phyto-C₃[™] transforms irrigation cleaning and maintenance into a comprehensive water and soil management tool.

Phyto-C₃[™] in a two-year university research study in vineyard grapes demonstrated:

- Improved Carbohydrate Transport
- Higher Yields
- Increased Water Uptake

Important disclaimer:

Every location, crop, and water source bring unique challenges which may impact performance of the product.

SAFETY DATA SHEET

A Phyto-C₃[™] Safety Data Sheet is available at www.bio-organic.com. Phyto-C₃[™] has low skin and dermal irritation when used properly. Please read the Safety Data Sheet carefully and follow all directions when using this product.

Recommended dosage rates for irrigation cleaning and enhancement of plant growth and the soil microbiome.

Irrigation Systems:

- For one-time cleaning, add 32 fl. oz. (1 liter), per acre, into the irrigation lines and leave for up to 12 hours (overnight).
- Dosage rate: 2 - 4 parts per million (ppm) into the irrigation lines.
- Use continually, or periodically, depending upon your specific maintenance and crop growth objectives.

Center Pivot Systems:

- Field Crops: 32 - 64 oz. (1 - 2 liters) per hectare.
- Apply three (3x) times over the growing season.

Gardens:

- 1 oz. into one gallon (128 oz./2.5 liters) of water, once a week.

Not for organic crop or organic food production.

PRODUCT SPECIFICATIONS

Phyto-C₃[™] is non-caustic.

(SDS report on website)

Recommended Shelf Life: 2 years.

Storage Temperatures: Minimum 32°F/0°C,

Maximum 113°F/45°C.

CONTAINS NON-PLANT FOOD INGREDIENTS

%	CONTENTS
90.5%	Yeast Extracts (Microbe Food)
9.5%	Alcohols, C11 - 15 Secondary Ethoxylated (Non-Ionic Surfactant)

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

Products

Pool-Cat™ and Spa-Cat™

Bio-Catalytic Water Conditioning



Pool-Cat™ and Spa-Cat™ is a bio-catalytic composition that transforms water care with a new technical breakthrough that addresses the key challenges of maintaining water system quality.

Pool-Cat™ and Spa-Cat™ works through the power of microbubble oxygen transfer, allowing higher aerobic levels within the water, and reducing biological film growth and mineral formation.

Pool-Cat™ and Spa-Cat™ enhances the effects of oxidizing, sanitizing, and anti-scaling chemical agents, while reducing the quantities required.

Pool-Cat™ and Spa-Cat™ safeguards equipment and improves water discharges.

- Reduces chemical usage.
- Helps clean heat-transfer surfaces.
- Eliminates fouling of filters.
- Provides the highest level of water quality.
- Improves water quality and personnel safety.

DIRECTIONS FOR USE

Pool-Cat™: Each week, add 2 capfuls (1/2 oz./15 ml.) for every 10,000 gallons (37,854 liters) of water into the pool skimmer/filter box.

Spa-Cat™: Add one drop (1ml.) for every 250 gallons (1,000 liters) once a week, or before use of spa.

PRODUCT SPECIFICATIONS

Pool-Cat™ and Spa-Cat™ is non-toxic, noncaustic, and safe to handle, with a recommended shelf life of two years. May be stored with confidence at temperatures below 122°F/50°C.

CONTENTS

Water, highly purified yeast extracts, non-ionic surfactants.

CAUTION

Keep out of the reach of children. If product from this container splashes in eyes, rinse well with water.

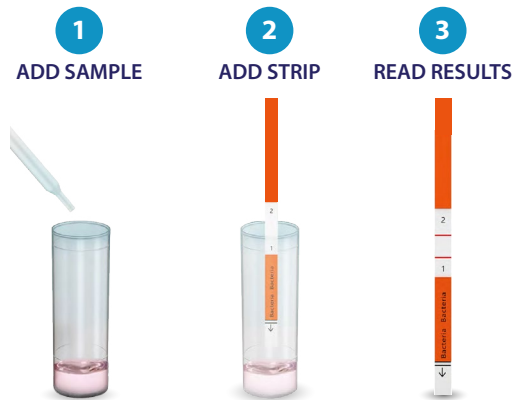
Manufactured in the USA under domestic and international patents.

Products

M/D 1.0™

Microbial Detection, *Rapid Pathogenic Bacteria Test*

Works In 3 Simple Steps



The M/D 1.0™ Microbial Detection Test employs cutting-edge technologies of antibodies that target and identify the presence of bacteria directly. This innovative approach bypasses the need for detecting mere chemical traces or secondary byproducts of bacteria.

The test streamlines the testing procedure and substitutes traditional plating or culture testing methods. This not only saves time, but also simplifies the entire process and eliminates the necessity of sending the samples to the lab.

Boasting an exceptional sensitivity level at fewer than 100 CFU per milliliter for *E. coli*, the test's reliability is backed by an independent validation study conducted at the renowned Purdue University's Cytometry Laboratories.

Designed for adaptability, the M/D 1.0™ Microbial Detection Test is capable of delivering results in the most challenging environments. Whether it's a vessel in the ocean or a well situated in a remote location, this test stands ready to detect bacterial contamination.

The test is ingeniously designed to operate without the need for electrical power, specialized laboratory conditions, or any specific reagents, making it accessible even to those without specialized training in microbiological methods.

Detects

- *E. coli*
- *Klebsiella*
- *Salmonella*
- *Pseudomonas*
- *Staph Epidermis*
- *Enterobacter Cloacae*
- *Proteus Mirabilis*
- *Bacillus Subtilis*
- *Staphylococcus (Aureus, Epidermidis, Saprophyticus)*
- *Bacillus Cereus*
- *Corynebacterium*
- *Enterococcus*
- *Actinomyces Turicensis*
- *Morganella Morganii*
- *Streptococcus Pyogenes*
- *Vibrio*
- *Legionella*

Test Applications

- Pool/Spa/Waterpark
- Water Storage
- Dental Water
- Waste/Recycling Water
- Vessel/Ships/Yachts
- Industrial Water
- Aqua Culture/Fish Farming
- Environmental Water
- Cholera and Legionella Sensitive

Email

info@bio-organic.com

Phone

800.982.8676

Corporate Office

Bio-Organic Catalyst, Inc.
711 West 17th Street
#E6, Costa Mesa, CA 92627



All Bio-Organic Catalyst products are produced in the United State and must meet the highest standards of quality.

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