Bio-Organic Catalysts – an alternative to harsh and caustic chemicals

US based, Bio-Organic Catalyst, Inc. is bringing about a fundamental transformation in the advanced purification of water resources and the cleaning arts. They are providing a completely non-toxic alternative, to the harsh and caustic chemicals that are now used throughout the world by municipalities and industry. They have developed Bio-Organic Catalysts (BOCs), which are broad spectrum, catalytic compositions that significantly enhance the biological conversion abilities that naturally occur in nature. The company produces a full line of BOC formulations for use in most areas of environmental cleaning and water/wastewater system improvements, including accelerated petroleum hydrocarbon remediation rates.

BOCs are comprised of a fermentation supernatant, derived from plants and minerals, which is blended synergistically in combination with a non-ionic surfactant to create a broad-spectrum bio-organic catalyst. The company's patented line of proprietary bio-organic catalyst formulations are all based upon a unique compositional biochemistry which combines a fermentation component (91%), in combination with any non-ionic surfactant (8%), along with a organic stabilization additive. These highly concentrated liquid formulations, are used within water delivery systems, or within bulk water/wastewater flows to precipitate an immediate broad catalytic reaction within the biological and/or chemical processes, reducing reaction times and engineering system limitations. The Company's BOCs are synergistic with traditional oxidative chemicals, enhancing oxidative capabilities, with the added ability to breakdown biofilms which cause fouling of membranes and filters.

The Company's bio-organic catalyst formulations produce extremely small microbubbles, due to the non-ionic surfactant backbone, which, in conjunction, with the fermentation components act as high potentiality interfaces for gas transfer, leading to vastly improved solubility of organic molecular structures. This mechanism reduces the energy required for both biological and chemical reactions to occur in processing and purification systems. The microbubbles also act as a reservoir for increasing dissolved oxygen within the liquid phase. The fermentation shells of the microbubbles allow an enhancement of gas transfer, rather than an inhibition of a normal surfactant.

The key attribute of BOCs is their ability to cause an immediate catalytic breakdown of the molecular structures of organic contaminates. BOCs are also notable by their unique ability to increase gas transfer rates and the level of dissolved oxygen within water, thereby facilitating nature's own mechanism for the life-sustaining quality of water, both critical requirements for the advanced purification of water and wastewater.

The potential applications are extremely broad and include all types of commercial and industrial cleaning markets where an improved total cost linkage is optimized as the cleaning chemical provides the first, and complimentary step, in the subsequent biological waste stream treatment processing. Water and wastewater applications can all be improved, as the Company's bio-organic catalyst formulations provide improved oxygen concentrations, thereby allowing reduced, or improved oxidation chemical usage.

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Additionally, there is a reduction in biosolids through shifting a greater proportion of incoming wastes to a soluble state, and substantially reducing or eliminating odors produced from anaerobic conditions.

BOCs are completely safe for human, animal, and marine life. BOCs are non-toxic, non-caustic, non-corrosive, non-irritating, hypoallergenic, bacteria-free and biodegradable. This safety profile provides significant competitive advantages against traditional chemicals, including biological agents, due to their unsurpassed handling ease and safety for workers. The company has trademarked a "Seal of Safety" program identifying our commitment to higher community values of environmental stewardship.

Speaking to Technical Insights about competitors, Parker David Dale, President, Bio-Organic Catalyst, Inc. says, "the Company has created a special and unique new biochemistry, and currently there are no direct competitors. The Company's biochemistry is not a traditional chemical or biological agent (such as a bacteria or enzyme), but works in complimentary fashion to enhance all types of these agents. There are some somewhat competing aspects to biological stimulation additives, however the Company's model is more of a fundamental "supply side" model where the constituents of organic wastes are made more available to subsequent chemical or biological process".

US and international patents have been issued to Bio-Organic Catalyst, Inc. on composition formulas, along with specific applications in wastewater, water purification, fats, oils, and grease (FOG) solubilization, and petroleum hydrocarbon remediation enhancement/acceleration. The company forecasts that it has developed a new paradigm biochemistry platform, which will change cleaning and water treatment worldwide. Every treatment system can benefit by leveraging extremely small dosages of the company's BOC to improve total systems' performance and cost parameters. Future applications include enhanced air pollution systems, reduction and improvement of agricultural nutrients, biofilm remediation/cleaning.

Speaking about collaborations, Mr. Dale says, "Our Company has built a client base in municipal wastewater treatment with clients in the Northeast US, top line hotel/resort properties in the US, with sales internationally, including the EU, Australia, Japan, and Korea. We are seeking further collaboration ties with firms in the environmental and water related fields internationally."

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