VeruTEK Announces Stabilization of Hydrogen Peroxide (Fenton's Chemistry) as a Breakthrough Green and Sustainable Environmental Technology

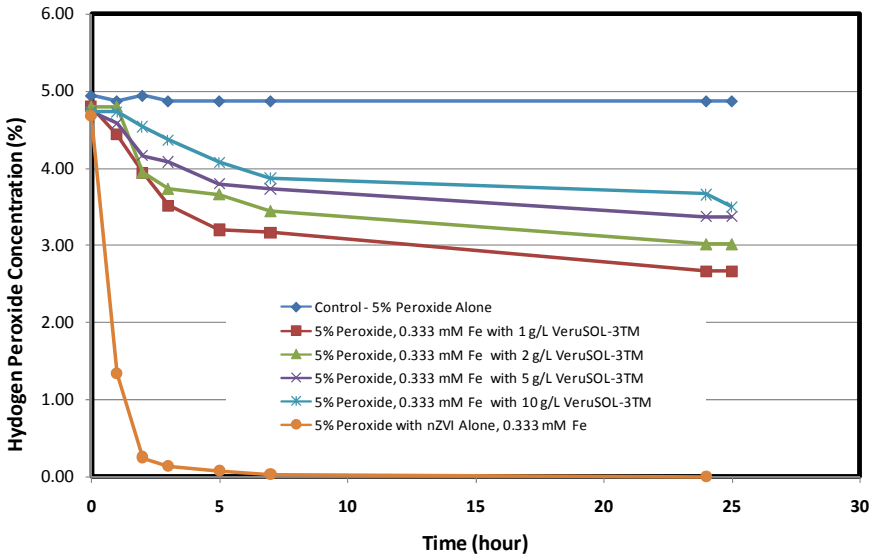
VeruTEK Technologies, Inc. (VTKT.OB) announced today a breakthrough in environmental cleanup technology by controlling hydrogen peroxide decomposition such that transport and targeting of environmental contaminants is possible. Using the S-ISCO™ technology platform developed by VeruTEK, plant surfactant mixtures have successfully slowed the rate of hydrogen peroxide decomposition in the presence of soils, Non Aqueous Phase Liquids and dissolved contaminants. These results provide the basis for controlled Fenton's chemistry reactions in soils and water using safe, biodegradable plant-derived surfactants such as soybean oil, coconut oil and castor oil. The result is a technology that can safely and inexpensively remedy soil and groundwater contamination in place and beneath structures such as schools, homes and city buildings, in addition to polishing existing excavations (dig and haul) that necessarily leave residual contamination in place.

Fenton's chemistry has long been useful in industry because of the power of hydrogen peroxide, in the presence of iron, to produce a highly reactive free radical species capable of oxidizing aqueous materials. However, the use of Fenton's chemistry and catalyzed hydrogen peroxide in environmental remediation has had limited application due to the rapid decomposition of hydrogen peroxide in the presence of soils. The rapid decomposition of peroxide in soils limits the production of free radicals necessary for contaminant destruction to less than a day following application. For this reason, catalyzed hydrogen peroxide generally works best for contaminants in aqueous solution. Because the largest mass of environmental contaminants are generally sorbed to soils or present as Non Aqueous Phase Liquids, catalyzed hydrogen peroxide is mostly ineffective in treating the bulk of contaminants at heavily contaminated sites. VeruTEK's S-ISCO™ platform has solved the problem of contaminant surface area using natural plant surfactants to control desorption of contaminants into solution. Dr. George Hoag, VeruTEK's Senior Vice President of Research and Development, said "…we've solve the two major problems using green chemistry methods. First, controlling rates of contaminant solubilization from Non Aqueous Phase Liquids and second, controlling rates of reaction of the oxidant, in this case, hydrogen peroxide, that make the green and safe remediation of environmental contaminants possible. This is a technology platform that will affect the way the environment is cleaned up for years to come."

VeruTEK is using stabilized catalyzed hydrogen peroxide in three of its technology platforms: S-ISCO™, which effectively targets and removes organic contamination in soil and groundwater, SEPR™ (Surfactant-Enhanced Product Recovery), and nanoscale zerovalent metal applications, which are used as catalysts for hydrogen peroxide and sodium persulfate. "VeruTEK's goal is to be able to treat all forms of environmental contamination using a new paradigm of complete, cost-effective, and sustainable technologies" said Dr. John Collins, President and CEO of VeruTEK. "The application of green chemistry to environmental problems finally brings high-tech solutions to an environmental industry. I predict that the era of simply moving contamination from one place to another (that is, to landfills), without truly solving the problem of communities and clients, will soon be over."

The following describes one example of the technology. VeruTEK produces a green-synthesized, nanoscale zerovalent iron material at ambient temperature and pressure consisting of plant extracts and a dissolved iron source. These materials have been developed under a Cooperative Research and Development Agreement with the United States Environmental Protection Agency National Risk Management Research Laboratory. Figure 1 reveals how VeruTEK can use its green-synthesized nanoscale iron along with its U.S. Food and Drug Administration Generally Recognized as Safe (GRAS) plant-derived surfactants. In these experiments, VeruTEK used several test reactors, each containing a 5 percent solution of hydrogen peroxide. One reactor was a control and displays no decomposition of hydrogen peroxide over a 24-hour period. Another reactor contained only the hydrogen peroxide and the green synthesized zero valent iron at a 0.333 millimolar (mmol) concentration. The other reactors had the same concentrations of hydrogen peroxide and the green synthesized zerovalent iron, but each contained varying concentrations of VeruSOL-3^{TM}, one of VeruTEK's proprietary surfactant-cosolvent mixtures. The presence of VeruSOL-3^{TM}, even at low concentrations of 1 g/L, significantly decreased the rate of hydrogen peroxide decomposition. It was also shown that the rate of hydrogen peroxide decomposition decreased as the VeruSOL-3^{TM} concentration increased. VeruTEK has observed this same phenomenon when comparing controlled tests using catalyzed hydrogen peroxide in soil columns contaminated with coal tar liquids obtained from a former Manufactured Gas Plant Site. The combined effects of VeruTEK's plant-based surfactants dramatically slowing the rate of hydrogen peroxide decomposition for environmental applications and enhancing the solubility of nonaqueous phase liquids enables VeruTEK's S-ISCO^{TM} platform to greatly improve applicability of peroxide-based oxidation systems.

Figure 1. Stabilization Effects of VeruSOL-3^{TM} on Decompostion of Hydrogen Peroxide Catalyzed using Green Synthesized Nanoscale Zero Valent Iron



About VeruTEK Technologies, Inc.

VeruTEK (VTKT.OB) provides proprietary, patent-pending, high-tech, green, and sustainable solutions for cleaning up the environment. For more information, please visit www.verutek.com.

Safe Harbor Statement

This release may be deemed to contain forward-looking statements that are based on our current expectations, beliefs, assumptions, estimates, forecasts, and projections about the industry and markets in which VeruTEK operates. The statements contained in this release are not guarantees of future performance, are inherently uncertain, involve certain risks, uncertainties, and assumptions that are difficult to predict, and do not give effect to the potential impact of any mergers, acquisitions, divestitures, or business combinations that may be announced or closed after the date hereof. Therefore, actual outcomes and results may differ materially from what is expressed in such forward-looking statements, and such statements should not be relied upon as representing VeruTEK's expectations or beliefs as of any future date. We do not undertake any obligation to update forward-looking statements made by us. Important factors that may affect future operating results include: VeruTEK's substantial indebtedness, VeruTEK's limited operating history, VeruTEK's historically variable operating results, dependence on a limited number of customers, VeruTEK's dependence on a single supplier, volatile capital spending in the environmental remediation industry, and other risk factors described in our most recent filings with the Securities and Exchange Commission. Our results of operations for the periods presented in this release are not necessarily indicative of our operating results for any future periods.

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