

SOLUTIONS



Volume 2, Issue 1

Jan , 2003

JohnsonDiversey Increases its Stake in Virox Technologies

RACINE, WI (December 20th, 2002) JohnsonDiversey announced today that it has increased to 10 percent its ownership interest in Virox Technologies. The increased ownership reflects a further strengthening of the partnership in support of the intent by JohnsonDiversey to sell worldwide applications of the Accelerated Hydrogen Peroxide™ (AHP) technology developed by Virox. AHP, an innovative disinfectant formulation developed by Virox, has potential applications in several diverse markets, including healthcare, aquaculture, medical device reprocessing, food processing, long-term care and hospitality, to name a few. AHP offers advantages over current disinfectant technologies, including rapid germicidal activity and superior cleaning performance. "Our investment in Virox aligns with our strategic vision to provide our customers with the best solutions and service every day, everywhere," says JohnsonDiversey President and Chief Executive Officer Greg Lawton. "AHP represents the state of the art in disinfectants and will provide our customers with

the peace of mind that comes from knowing that their facilities and products are clean, healthy and safe." Virox Technologies has received patents for AHP in the United States and Canada, and has received approval for the technology from Spain, France, Japan, Britain, Germany, Netherlands

JohnsonDiversey
Clean is just the beginning

and Italy. The U.S. Environmental Protection Agency has sanctioned AHP as an effective decontaminant option for anthrax incidents. Similarly, Health Canada has approved the use of AHP as an alternative for the decontamination of surfaces in outbreaks of the Norwalk virus, a non-enveloped virus that has a high resistance to chemical germicides. "We are very excited about the opportunities enabled by our strategic partnership with JohnsonDiversey," says Randy Pilon, President and Chief Executive Officer of Virox. "JohnsonDiversey has the size, strength and geographic reach to compete anywhere in the world with anyone in their industry. As a result, we're confident that

AHP will soon become the global standard by which all other disinfectants will be measured." Virox Technologies, based in Mississauga, Ontario, is Canada's leading manufacturer and supplier of hydrogen peroxide-based cleaners and disinfectants. The company has supply agree-



ments with tier-one partners in many vertical markets, including JohnsonDiversey. Virox has a GMP (Good Manufacturing Practices) and ISO9002-registered production facility in Mississauga, as well as on site research and development capabilities. JohnsonDiversey is a world leader in the institutional and industrial (I&I) market, providing cleaning and hygiene solutions to a broad array of industries, including the retail, hospitality, food service, food processing, healthcare and building service industries. With global headquarters in Racine, Wisconsin, JohnsonDiversey employs more than 14,000 people worldwide. The 116-year-old company has operations in more than 60 countries and distributes its products in more than 100 countries.

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- Disinfection—Testing & Label Claims, Are you Asking The Right Questions
- A Norwalk update from the CDC
- The issues with biofilms and hydrotherapy tubs

Biofilms and Hydrotherapy Tubs

THE ISSUE

The issue of biofilm related infections is significant and growing for many health care related fields. Biofilms are nothing new to our world. From the slime on a rock surface in a stream to the plaque that builds up on our teeth, biofilms are evident in any environment that has a flow of water and a contact surface.

COMPOSITION

Biofilms are composed of populations or communities of microorganisms.

These microorganisms are encased in an extracellular polysaccharide that is produced by themselves. Most biofilms are 85 percent polysaccharide and 15 percent cells. A biofilm is essentially akin to a microbial community. They may include several different types of bacteria fungi, algae and protozoa. A biofilm provides a number of advantages for microorganisms; it provides environmental protection from adverse elements like UV light, drying and antimicrobials. If you have an antibacterial agent, the rule of thumb is that for every unit it takes to kill a planktonic organism, it will take a thousand times as much to kill a biofilm organism. It also acts to attract nutrients based upon its negative charge. Many nutrients (particularly cations) are attracted to the biofilm surface. This provides bacteria cells within the biofilm with nutrients greater than compared to being in the surrounding water.

HYDROTHERAPY TUBS

One area where biofilms are of growing concern is with the use of whirlpool tubs or hydrotherapy tubs. In

North America there are a large number of tubs in use in various health care facilities. Some tubs are 10 years or older. Most were designed in a way that allowed water to accumulate and pool in the pump and other piping, conditions that are ideal for biofilm growth. It is very common to see a biofilm developed within these older tubs.

THE RISKS

One risk of biofilms to bathers is the number of colony forming units (CFU)

and its relative size can be difficult. A biofilm will shed planktonic cells at various rates. If it is stressed you will witness an increase in the number of cells shed as sections can become dislodged. If you are taking a water sample just after a disinfecting step it is likely you will find the CFU count to be higher than acceptable. Over a course of a month your samples might display a strange pattern of large bacterial counts and just a day later low counts. Variables that may give you this type of sampling are 1) time of day the sample was taken, 2) the length of time the tub was run before taking the sample, and 3) when the tub was last disinfected. The main thing to consider is that a capture count from the water that fills the tub will only indicate the number of organisms being shed from a biofilm. Identifying a biofilm can be done

through the measure of a high bacterial count in the water. This, however, does not identify the actual size or level of the biofilm contamination. The only true way to measure this is to scrape a sample from the surface.

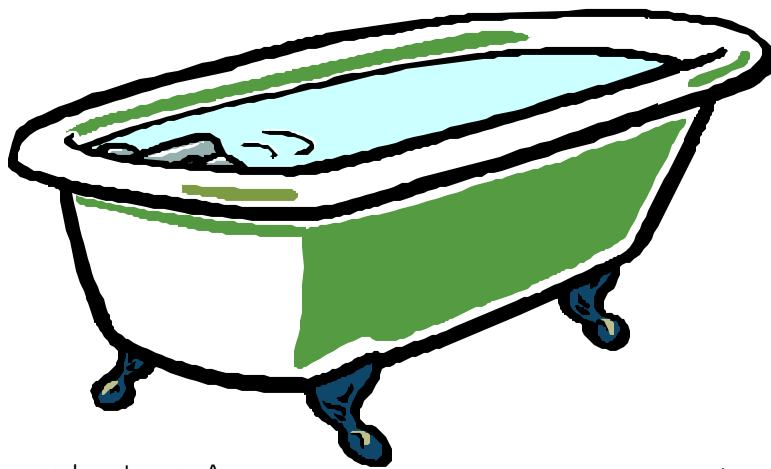
OPTIONS

What are the options available to reduce and control biofilm growth? Oxidizers like Accelerated Hydrogen Peroxide™ have been recognized as efficacious in this regard. As equally important as the product you use is the need to ensure consistent cleaning and disinfecting procedures. Remember, it only takes a very short time for a biofilm to re-establish itself and then you are starting the battle all over again.

that are shed and present in the water they are bathing in. Sores or breaks in the skin may become infected as a result of this exposure. What many are not aware of might actually be a greater risk to patients and staff. When a tub's jets system is turned on small segments of a biofilm can break free and become aerosolized. The result is that a significant amount of pulmonary damage could be done by inhaling biofilm from whirlpool tubs. You don't get immediately sick with these pulmonary damages. You just fibrous off a piece of your lung and it shuts down. You could lose a fourth or fifth of your whole lung capacity and never even notice it. Over time an individual may become more susceptible to respiratory related issues.

DETECTION

Monitoring the presence of a biofilm



Disinfection—Testing & Label Claims, Are You Asking The Right Questions?

Webber Training, Virox Technologies, JohnsonDiversey and The Centre for Research on Environmental Microbiology (CREM) are pleased to present the next session in the **Webber Training teleclass Series**. Jan 28th guest speaker is Dr. Syed Sattar. The topic is Disinfection—Testing & Label Claims, Are You Asking the Right questions? Chemical germicides are a backbone of modern infection control, but with the wide variety of products available, how do you choose between them? Disinfectant claims on product labels make the choice increasingly difficult. What information should you seek to



make the most informed decision. This teleclass will discuss:

- What methods are currently used to test germicides for government registration, and how relevant the test microbes are,
- Whether testing methods are in line with the actual uses of the products,
- If label claims mean what they say,
- If use directions can be made simpler,
- Post-market evaluation of germicidal products,
- What role there is for end-users in improving the situation.

Dr. Sattar is the Director of the University of Ottawa's Centre for Research on Environmental Microbiology (CREM). He has distinguished himself in research on the use of germicides in infection control, most notably, by developing better and internationally recognized methods to assess chemical germicides. Dr. Sattar is widely published

on the topic, is frequently consulted for a professional opinion, and is regularly invited to address conferences worldwide. Question-and-answer time will be a key component of the teleclass and participants are welcome to ask their questions during the teleclass, or by e-mailing them in advance. You are welcome and encouraged to gather as many colleagues as you wish for the teleclass without extra charge. Tape recording of the teleclass is also encouraged.

For more information visit www.viroxtech.com

Webber Training
TELECLASS EDUCATION for HEALTHCARE PROFESSIONALS



Enzymatic Instrument Cleaners vs. Non-Enzymatic Instrument Cleaners

As with hard surface disinfectants, instrument cleaning products are under scrutiny by infection control. The cleaning step is as critical a component as disinfecting for instrument reprocessing. It is generally thought that surfactants in regular detergents can be enhanced, by adding enzymes. You then not only lift the soil from surfaces but you also break it down into simpler compounds which are then more easily rinsed away. Enzymatic detergents are generally low-foaming and are acceptable for ultrasonic machines as well. Enzymatic detergents are gentle on metals and do not rely on



high alkalinity or chlorine containing raw materials that can damage metals, especially stainless steel. Enzymes are large protein molecules composed of amino-acids. They are not living organisms just by-products of microbial metabolism. Different enzymes are required to remove different types of soils. In other words, enzymes are very specific in terms of what types of bio-burden they can clean: Protease: removes protein, Lipases: removes fats and, Amylases: removes carbohydrates. Temperature is an important component for the efficient production of enzymes. It takes time and temp to reach the optimal performance level. Enzymatic products do not necessarily contain all

three enzymes. There are, however issues with the use of enzymatic products. Enzymatic detergents with protease can trigger an allergic reaction (skin irritation and localized redness and or swelling). The body rapidly recognizes these foreign proteins and immediately begins to build up anti-bodies toward them. Not all enzymatic products are bacteriostatic thus creating an environment which may allow, and actually promote, because of elevated temperatures, the growth of pathogens. This can put staff at risk and further contaminate the device being cleaned. Another area of concern is in the disposal of these products and their impact on our environment.

There are alternatives to enzymatics which are also based upon surfactants. These products will lift soil off surfaces,

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but on their own are not very effective on getting into small lumens to lift hard to remove organic or inorganic soils. Non-enzymatic detergents are generally unable to break down these contaminants on their own. Non-enzymatic detergents are rarely used on instruments or topographically challenged surfaces for this reason. Most detergents are effective on smooth surfaces containing easy to remove visible soils. Non-Enzymatic Detergents are more often than not limited to manual cleaning applications such as basic dishwashing soap.

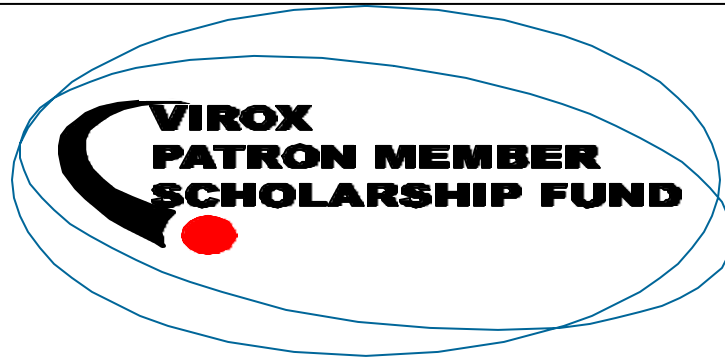
Virox Technologies Inc. has created a new alternative for instrument cleaning based upon Accelerated Hydrogen Peroxide (AHP) Non-enzymatic AHP solutions clean as well as or better than enzymatic detergents while having the added benefit of being volatile organic compound (VOC) free, non-toxic at in-use, non-irritating to skin and eyes, bacteriostatic and bactericidal (KDS) (Alfa 2001 AJIC). AHP non-enzymatic solutions are also effective in room temperature water unlike many enzymatic detergents that require higher temperatures to function effectively. The synergistic action of the ingredients of AHP provide for a powerful combination of surface active detergents that are assisted with the oxidizing action of hydrogen peroxide. Soils are broken down into simpler compounds that are easily rinsed away. This includes soils such as protein, carbohydrates, lipids, endotoxins and hemoglobin. This suggests that AHP is an optimal detergent that assists in the protection of Healthcare Workers and at the same time provides excellent cleaning efficacy.

A Norwalk Update

Norwalk like viral outbreaks on cruise ships and in Canada's health care system have caused considerable havoc. The contagious nature of this virus and resistance to chemical germicides makes it a difficult pathogen to contain and defeat. One of the most effective practices to prevent the spread of this virus is the frequent washing of hands. Good housekeeping is also an important component. Previously recognized



and approved practices for environmental surfaces have been the use of 1:10 bleach solutions, in a double cleaning method. There is now a recognized alternative, the use of Accelerated Hydrogen Peroxide (AHP) Both the CDC and Health Canada have approved the use of AHP in the instance of Norwalk cases. AHP provides a 5 min contact time and is much safer and simpler to use than Bleach. For more information visit our web site www.viroxtech.com



Virox Technologies Inc. is committed to furthering educational opportunities for the Infection Control Professional (ICP) in Canada. The Community and Hospitals Infection Control Association – Canada (CHICA-Canada) National Education Conference is an excellent opportunity to bring ICPs together in a forum of learning. The Virox Patron Membership National Conference Scholarship Program is intended to provide financial assistance to eligible ICPs to attend the annual National Conference of CHICA-Canada. With the introduction of this scholarship Virox Technologies Inc. is making available up to \$2000.00 to each recipient for the reimbursement of eligible costs related to the participation at the CHICA-Canada National Conference For further information and application form, contact your local CHICA chapter or visit www.viroxtech.com

Health & Beauty Launch

Accel, a new Virox brand name for the medical market, has been very well received since its introduction in the Fall of 2002. It is now being made available to the Health and Beauty Industry for environmental surface cleaning as well as instrument cleaning and disinfection. This industry is looking for an alternative to existing technologies and is poised to increase its commitment to infection control. Contact Kim Tanner & Associates at 905-838-5315.

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