



OVERVIEW

Balancing the hygiene demands of the twenty-first century with growing budgetary problems, concerns for the environment, and concerns for employee and public safety is a difficult problem that all governmental agencies, businesses, and private consumers face. Increasingly, the concepts of personal safety and organizational efficiency seem to be mutually exclusive. Sagewash™ Sanitizer, the most effective sanitizing system available in the world, changes all of this. A scientist invented and patented Sagewash™ Sanitizer, a product so innovative, so unique, and so effective that it requires the rethinking of most sanitization systems. Sagewash™ Sanitizer users in both the workplace and home environment will benefit greatly by improving safety while cutting costs.

THE PROBLEM OF HYGIENE

It should be no surprise to anyone that we have exploding hygiene problems occurring around us. News reports update this topic almost daily. Hospitals are often less sanitary than the outside world they serve. Schools have become virtual laboratories of disease in classrooms and on playground equipment. Prison healthcare is in crisis due to increasingly resistant strains of staphylococcus as well as alarming rates of hepatitis, tuberculosis, and HIV infections.

The boarding kennel industry, with its exploding pet populations and tight budgets, presently faces significant challenges in trying to keep facilities safely sanitized without “breaking the bank”. Many of the very foods we cherish, such as dairy products and vegetables, have become vectors for deadly bacteria and viruses like salmonella, listeria and E. coli, to name only a few. Even the patios, decks and play areas of private residences are teeming with pathogens dangerous to the residents, especially children, who live and play in these homes.

To further complicate this situation, the pervasive use of antibacterial soaps has contributed to the explosion of antibiotic resistant bacteria and viruses—microbes that can prove especially deadly to individuals with compromised immune systems. Unfortunately, the almost universal choice of batch mixing and spraying liquid bleach to combat these maladies is unsafe, ineffective, and leads to a false sense of sanitary safety (see below, “Sagewash™ Sanitizer Versus Household Bleach”).

The process of cleaning, although critically important to social welfare, remains in the Dark Ages for most who attempt it. A lack of understanding is at the root of the problem. Those who use a dirty mop and bleach water to sanitize surfaces are exposing themselves to unnecessary risk, wasting time, and failing to sanitize their target environment. Only one product on the market today combines an exceptionally high rate of effectiveness with notable economy. Sagewash™ Sanitizer is that product.

WHAT IS SAGEWASH™ SANITIZER?

Sagewash™ Sanitizer is the ultimate cleaning solution. Sagewash™ Sanitizer, the patented chlorine delivery system for use with solid calcium hypochlorite tablets, literally turns water into magic. Just attach the Sagewash™ Sanitizer to any garden hose end, point, and spray the area targeted for cleaning. Your job is completed and concerns are washed away without any additional cleanup or rinsing! The scientifically designed Sagewash™ Sanitizer accurately delivers USDA approved levels of active chlorine at the end of any water hose in a safe and easy to use manner. When used properly, Sagewash™ Sanitizer does not stain or bleach clothing, does not require the batch mixing of dangerous chemicals, is non-corrosive to equipment, is not hazardous to skin, and is extremely cost effective. The Sagewash™ Sanitizer system is quite portable and easily stored, and there is no need to worry about harmful residual substances left on the sanitized area. Based in solid dispensing technology, Sagewash™ Sanitizer reduces shipping costs, reduces spillage risks, reduces environmental pollutants, reduces storage space requirements, and reduces the number of hazardous materials stored around the workplace and home.

Hypochlorous acid, which is contained in chlorine, is the most effective and affordable sanitizer available anywhere, and is the key sanitizing agent used in Sagewash™ Sanitizer. Hypochlorous acid is highly effective against most dangerous pathogens, including bacteria, viruses, fungi, and protozoa, none of which become resistant to the incredibly effective hypochlorous acid. Household bleach solutions, however, the product used universally to

sanitize businesses and homes contains little to NO hypochlorous acid, making it 80 to 120 times less effective than Sagewash™ Sanitizer! Until the invention of Sagewash™ Sanitizer, users of chlorine products faced two challenges: (1) gaining an understanding of its chemistry; and (2) finding a practical and safe delivery system. Sagewash™ Sanitizer answers these challenges for its user by both simplifying the chemistry and providing a practical and safe delivery system.

SAGEWASH™ SANITIZER SOLVES PROBLEMS

Sagewash™ Sanitizer improves user safety because it requires no mixing of dangerous chemicals! As a result, eye and skin safety is greatly enhanced. Sagewash™ Sanitizer is so easy to use that workers will use it more frequently, resulting in a cleaner and safer work environment. The home user will benefit as well from its magical simplicity and easy storage.

In the time it takes to snap the Sagewash™ Sanitizer to a garden hose, Sagewash™ Sanitizer users begin safely eliminating dangerous pathogens. Its point and spray system makes it a snap to clean and sanitize virtually anything. Sagewash™ Sanitizer users routinely comment that at a minimum the unit has reduced cleaning times by half. Our belief, based on our own tests, is that the actual reduction in cleaning time is closer to two thirds or more; saving time means saving money! Sagewash™ Sanitizer will insure businesses of a substantial increase in their return on investment due to increased productivity, reduced injuries, and dramatically decreased material costs.

The biodegradable cleaning solution used with the Sagewash™ Sanitizer system is also ultra safe to the environment, so there is no need to worry about dangerous residual material that can cause harm. Hypochlorous acid has been used for decades to safely sanitize drinking water, swimming pools, and processed food, so users can trust Sagewash™ Sanitizer to eliminate pathogens without endangering people, pets or the environment.

COMMERCIAL USES

Daycare Playgrounds and Equipment
Amusement Parks
Hotel and Motel Pool Areas
Public Restrooms
Commercial Kitchens
Penitentiary/Jail Facilities
Zoo Facilities
Kennels
Humane Societies
Veterinary Clinics
Animal Housing and Pens
Commercial produce trucks
Athletic Facilities
Campgrounds
Military/Government facilities
Greyhound and Horse Tracks
Fresh and Frozen Fish Facilities
Farm Produce Warehousing
Cooling Towers and systems

RESIDENTIAL USES

Dog houses, gravel yards, bedding, trays
Mops, scrub brushes, and door mats
Garbage cans, ice chests
Children's play areas
Home greenhouses
Decks
Pool and spa surface areas
Garden produce & tools
Gutters and drains
Boats and Fishing Equipment

Using the Sagewash™ Sanitizer System ELIMINATES:	
Canine Parvovirus	Avian Influenza (Bird Flu)
Corona Virus	MRSA
HIV Virus	Staphylococcus
Hepatitis Virus	Streptococcus
Salmonella	Pseudorabies
Tuberculosis	Swine Parvovirus
Distemper	E. Coli
Rabies	Camphlobacter
Candida	Norovirus
Listeria	

PRODUCT	COST PER GALLON
SAGEWASH™ SANITIZER	\$0.02
Dakil	\$0.10
Lemon 256	\$0.10
DC&R Disinfectant	\$0.11
Maxima 12B	\$0.14
ProZema Plus	\$0.18
Chlorohexiderm	\$0.19
Roccal-D-Plus	\$0.29
Synphenol-3	\$0.33
Therapet Lemon Yellow	\$0.41
Envirocide	\$0.51
Nolvasan Solution	\$0.69
Nolvasan-S	\$0.73
KenCare	\$0.78
Quatricide	\$0.94
Trail Instant Odor Control	\$1.56

TECHNICAL

Chlorine has been used in one way or another for over one hundred years as an effective yet affordable sanitizer. Chlorine used for disinfection is available in three different physical forms: solid (calcium hypochlorite), liquid (sodium hypochlorite), and gas (chlorine gas). The solid form (calcium hypochlorite—the compound used in Sagewash™ Sanitizer) is much less corrosive and exponentially more effective than liquid bleach (sodium hypochlorite) for reasons described below and causes less damage to agricultural produce and mechanical equipment than the other two forms. The gaseous form (chlorine gas), while effective, is quite dangerous and more complicated to use than the other two forms.

Sagewash™ Sanitizer utilizes hypochlorous acid, the most powerful active ingredient in chlorine solutions. It undergoes oxidation to affect the reproduction and metabolism of microorganisms. This results in immediate disinfection through the elimination of pathogens.

Chlorine in each of its three physical forms kills microorganisms through a fairly simple chemical reaction. After chlorine is added to water, it breaks down into many different chemicals, including hypochlorous acid (HOCl) and the hypochlorite ion (OCl). Both substances kill microorganisms and bacteria by attacking the lipids in the cell walls and destroying the enzymes and structures inside the cell, thus rendering them oxidized and harmless. The difference between hypochlorous acid and hypochlorite ions is the speed at which they oxidize. Hypochlorous acid is able to oxidize the organisms in several seconds, while the hypochlorite ion may take up to 30 minutes or longer.

The levels of hypochlorous acid and hypochlorite ions vary with the solution's pH level. If the pH is too high, not enough hypochlorous acid is present and disinfection can take much longer than with a lower pH. Ideally, the level of pH in the solution should be between 7 and 8, which is typical for a water hose. Once the hypochlorous acid and hypochlorite ions are finished sanitizing, they combine naturally with another chemical in the environment, such as ammonia, or are broken down into single atoms. Both of these processes render the chlorine harmless, thus making Sagewash™ Sanitizer completely biodegradable!

For a thorough analysis of chlorination and disinfection, please refer to:

Block, S.S (2000) *Disinfection, Sterilization, and Preservation, 5th Edition* NY: Lippincott, Williams & Wilkins.

White, Geo Clifford (1998) *Handbook of Chlorination and Alternative Disinfectants, 4th Edition* NY: Van Nostrand Reinhold.

SAGEWASH™ SANITIZER VERSUS HOUSEHOLD BLEACH!!!!

Because of the pervasive misunderstanding and misuse of household (liquid) bleach, it is necessary to dispel two incorrect and dangerous assumptions associated with household bleach (sodium hypochlorite).

ASSUMPTION ONE:

Liquid bleach does not lose potency until you create a sodium hypochlorite solution.

Liquid bleach is already a sodium hypochlorite solution and therefore loses its chlorine content continuously from the moment of manufacture. Most users of household bleach believe that it does not lose its strength until it is combined with water. Liquid bleach is already combined with water. In reality users are diluting an already diluted sodium

hypochlorite solution when they add water to it. Most bottles of bleach have lost HALF or more of their original chlorine content by the time of purchase! However, calcium hypochlorite, the ingredient used in Sagewash™ Sanitizer, only loses 5% of its initial potency in eighteen months

ASSUMPTION TWO:

Liquid bleach is a powerful and effective disinfectant.

In reality, lye is the substance in bleach that makes bleach seem powerful because of all its negative effects. In order to stabilize the chlorine in the liquid solution, bleach manufacturers add lye to the solution, thus raising the pH of that solution to 11.5. Lye causes skin burns, noxious chloramine gas, and corrosion in equipment. Lye will kill some germs, but it requires a very long contact time, as well as a high concentration. Calcium hypochlorite, the ingredient in Sagewash™ Sanitizer, contains no lye!

For a chlorine solution to be an effective disinfectant, it must meet the chlorine demand. This is the amount of free available chlorine (FAC), often called hypochlorous acid or HOCl, needed to disinfect or oxidize organic matter before the FAC residual is achieved. If the required chlorine demand is not met, complete disinfection is not possible.

As mentioned above, the strong disinfectant in chlorine is hypochlorous acid, which exists in only trace amounts when a chlorine solution has a pH level greater than 9. What mostly exists in household bleach solutions is the hypochlorite ion, which is 80 to 120 times less effective than hypochlorous acid as a disinfectant. Numerous studies prove this, including Kapoor, S.K., University of Illinois (1968) based on the book Disinfections and Sterilization written by G. Sykes (1965). This is why bleach has documented failures in eliminating dangerous pathogens like hepatitis and parvovirus. Again, the most effective substance found in chlorine, hypochlorous acid, barely exists in household bleach solutions because of its pH level! Sagewash™ Sanitizer, a calcium hypochlorite solution, has a pH below 8.5, allowing for the maximum amount of hypochlorous acid, which results in a powerful sanitizer at an extremely cost effective price.

CONCLUSION

Balancing the many demands placed upon businesses and consumers by the microbial world with the budgetary realities and safety concerns of today is indeed a difficult task. Fortunately, that task is now made easier with the Sagewash™ Sanitizer system.

Sagewash™ Sanitizer, the patented chlorine delivery system for use with solid calcium hypochlorite tablets, enables anyone to deliver USDA approved levels of active chlorine at the end of any water hose in a safe and easy to use manner. It is indeed rare for a product of such innovation and effectiveness to arrive on the scene without requiring specialized training, certifications, or even electricity to begin safely using it. After reading the directions, the Sagewash™ Sanitizer user can literally pick up the unit and begin sanitizing immediately, with little or no risk to the user or the environment.

Based in solid dispensing technology, Sagewash™ Sanitizer reduces shipping costs, spillage risks, environmental pollutants, storage space requirements, and the number of hazardous materials stored around the workplace and home. Just attach the Sagewash™ Sanitizer to any garden hose end, point, and spray to deliver the most effective and affordable sanitizer available anywhere. Sagewash™ Sanitizer reduces cleaning times by at least half, which directly saves money for both businesses and private consumers. Finally, Sagewash™ Sanitizer is biodegradable, so there is no need to worry about dangerous residual material that can harm the environment. It is safe. It is simple. It is unsurpassed. It is time for you to wash your concerns away and enjoy the magic of Sagewash™ Sanitizer, the ultimate cleaning solution.

Published by Kenneth W Hungerford, B.A., J.D.

Sagewash™ Sanitizer

For additional information, contact SAGE SANITIZING SYSTEMS

The Barn, Westhills Lodge, Washpool Lane, Lydiard Millicent, Swindon, SN5 5PP

Telephone +44 (0) 1793773320 Fax: +44 (0) 1793773330

USA Toll Free: Tel: 1 866 264 8895 (Service) Tel: 1 866 264 8896 (Sales) Fax: 1 866 264 8897

e-mail: sagesales@sagesanitizingsystems.com www.sagesanitizingsystems.com