

A Solution for CHG Stains

A team effort clears the way for 'Magi-Cleans,' which eliminates a common stain in healthcare linens



“While working at a client’s laundry where CHG stains were quite prevalent, I began to think more in depth about this classic problem. I had a hunch of what might help mitigate the stains and performed some basic experiments in the field which led me to believe there was a viable solution to the CHG staining problem.”

Sam Garofalo,
industry consultant.

By Steve Tinker

Few can remember the year 1954, but there were certainly memorable events that transpired 59 years ago. President Dwight D. Eisenhower was in the White House; Hollywood icon Marilyn Monroe married New York Yankees center fielder Joe DiMaggio; the First Indochina War concluded with the defeat of the French Army; RCA manufactured the first color television and ABC first broadcast the Miss America pageant; the Dow Jones Industrial Average closed at an all-time high of 382.74 points; and the average cost of a new car was \$1,700 and could be filled with gas for 22 cents per gallon. And while many outside the industrial laundry industry wouldn’t necessarily commemorate it, laundry operators may want to note another significant moment that occurred in 1954; the discovery of chlorhexidene gluconate by Imperial Chemical Industries Ltd. in Manchester, England, as a powerful antimicrobial compound.

CHG—TEXTILE SIDE EFFECTS

Chlorhexidene gluconate or CHG was first introduced as a topical antiseptic and disinfectant in the United Kingdom in the 1950s. It wasn’t available commercially in the United States until the early 1970s and quickly found more uses, including antiseptic mouth rinses, pre-operative skin preparation sponges and cloths, and integration into medical device materials. With

the increased popularity of CHG-based products, healthcare laundries also began to notice an increase in permanent stains on their textiles. These stains were a light orange-to-dark-brown color, and they were impervious to traditional stain-removal treatments. Even more discouraging was the fact that the launderer’s most reliable stain-removing compound—chlorine bleach—not only didn’t remove the stain, but it made it appear darker!

Fast-forward nearly 60 years and the infamous, permanent brown stains are still a problem, but more is known about these particular stains. First, the increase in brown stains was linked to CHG-based antiseptic and topical products coming into contact with textiles, which are then laundered with chlorine bleach as the stain remover. Next, there was an ever-increasing spectrum of products used in hospitals and healthcare facilities that contained CHG. These include (but aren’t limited to) Hibiclens, Savinox Plus, Surgiprep-CHX, Hibiscrub, Dexidin, Hexigard 4 and Dermol. Also, it eventually was discovered that the use of oxygen-based stain removers would not permanently set the CHG stains and would render the stains colorless. However, the stain was not completely removed.

In fact, any CHG stain that was ‘removed’ with oxygen bleach would reappear once it was exposed to chlorine bleach. These stains have been

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dubbed the ‘invisible CHG stains’ as a seemingly brown-stain-free textile can be laundered on a chlorine bleach reclaim wash formula and come out with more stains than it had before it was washed! Most laundries have thrown in the proverbial towel and have accepted the fact that laundering healthcare textiles with chlorine bleach invariably leads to CHG-stained linen, greater linen ragout and higher replacement costs.

ANATOMY OF A SOLUTION

While it can be said that the more things change, the more they stay the same—the Dow Jones Industrial Average is once again testing all-time highs, members of the New York Yankees can still be found in the company of Hollywood starlets and ABC continues to broadcast the Miss America pageant annually—the problem of creating permanent, brown CHG stains with chlorine bleach can be cast into the dustbin of history. Just ask Sam Garofalo, president of Technical Consulting (a consulting firm for the fabricare industry) and co-inventor of MagiClens, a patent-pending product and laundering method that effectively removes CHG from textiles, thus allowing them to be laundered in chlorine bleach without creating a permanent brown stain.

“I have encountered chlorhexidene stains at my client’s facilities across the country for years,” Garofalo says.

“While working at a client’s laundry where CHG stains were quite prevalent, I began to think more in depth about this classic problem. I had a hunch of what might help mitigate the stains and performed some basic experiments in the field which led me to believe there was a viable solution to the CHG-staining problem. Understanding that I didn’t have the ability to take the concept further, I made a phone call.”

The person on the other end of that call was Greg Gurtler, president of Gurtler Industries Inc.

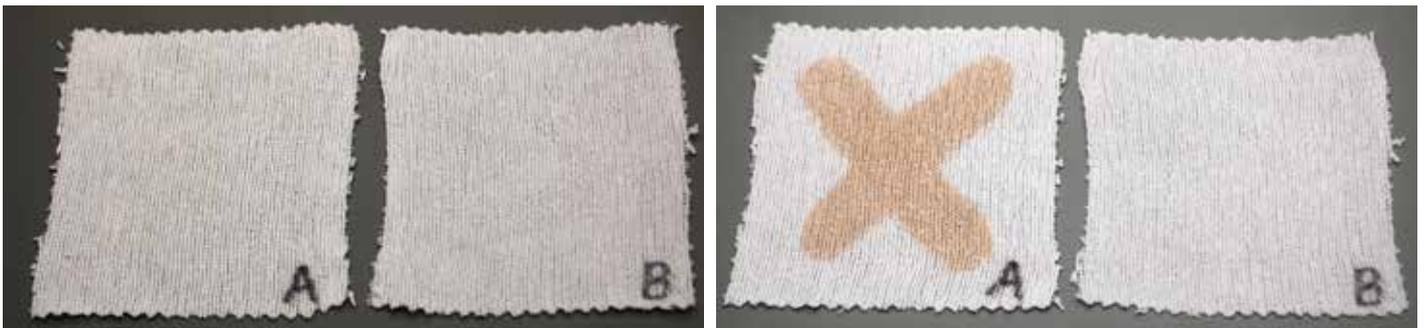
“Sam brought us a very exciting concept that needed to be refined into what we foresaw as a revolutionary product for the laundry industry,” Gurtler says. “MagiClens is the result of countless hours of research, lab testing and field studies and it embodies our commitment to solving laundry problems.”

MagiClens is a patent-pending, liquid stain treatment that is applied in the first operation of the wash cycle. The pre-wash with MagiClens removes the CHG stains, allowing the textiles to be laundered with chlorine bleach without the fear of creating permanent brown stains. It won’t remove a CHG stain that has been previously set with chlorine, but it will remove CHG stains from textiles that have not been laundered with chlorine bleach. When used at a laundry where oxygen bleach is used for normal laundering and chlorine bleach for reclaim wash formulas, MagiClens will prevent the ‘invisible’ CHG stains from appearing after a stain-reclaim wash.

Over the last 59 years, the laundry industry has seen its share of products that claim to solve launderer’s problems; from powerful magnets placed in a wash wheel to enhance soil removal, to chemicals that “super activate” the water and reduce wash times, temperature, cost (and quality), a laundry operator is within reason to be skeptical of new washing technology. Enter Mark Lennart and Mark Smoyer.

Lennart is the general manager of Hospital Laundry Services, a 10+ million lb. per year healthcare laundry in Ft. Wayne, IN. The laundry uses Milnor PulseFlow® continuous batch washers and an assortment of conventional washer/extractors. Smoyer is the general manager of Shared Hospital Services, another 10+ million lb. per year healthcare laundry in

The sample swatches below were stained with chlorhexidene gluconate before laundering. Sample A was washed in a typical alkaline detergent wash, while sample B was laundered in a Magi-Clens prewash cycle. Both samples then were washed in chlorine bleach. The “invisible” CHG stain returned in sample A, but not in sample B.



Portsmouth, VA. This facility washes with Kannegiesser PowerTrans continuous batch washers. Both plants participated in trials of MagiClens during its introduction to the market.

“I think there is an advantage to having the option to launder healthcare textiles with chlorine bleach,” says Lennart.

The U.S. Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services (CMS) both include specific laundry recommendations for chlorine bleach use, whereas nonchlorine bleach and low-temperature washing processes are less well defined, even if adequate for healthcare laundering. Regardless of the oxidizer and wash process, there is a traditional bias toward the use of chlorine. But there’s an even greater predisposition for everyone handling textiles; they must be clean and stain free!

“The MagiClens product and wash process removed the CHG stains and allows us to bleach with chlorine,” Lennart adds.

Smoyer saw another benefit to the use of MagiClens and chlorine bleach in reduced energy costs.

“There are real savings in reducing the overall temperature profile on a continuous batch washer,” he says.

“We found our linen to look just as white and as stain free with the MagiClens and chlorine process compared to our oxygen-bleaching process. Being able to reduce hot water demand and dial back our boiler at the same time is a great advantage.”

SUCCESS FUELED BY UNITY

As one of the laundry industry’s age-old problems is laid to rest, the future of laundering hasn’t been brighter—both

in terms of additional business opportunities for laundry operators and the elimination of a characteristic and troublesome stain. MagiClens is just one example of how colleagues from all facets of commercial laundering collaborate to solve an industrywide problem, advancing the science of textile processing. While few may recall the events of 1954, the MagiClens solution to eliminating CHG stains while bleaching with chlorine will not soon be forgotten! **TS**

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