

REMOVAL VERSUS CHEMICAL INACTIVATION OF HOSPITAL PATHOGENS



Centers for Disease Control

Environmental Cleaning & Disinfecting for MRSA

What's the difference between cleaners, sanitizers, and disinfectants?

- Cleaners or detergents are products that are used to remove soil, dirt, dust, organic matter, and germs (like bacteria, viruses, and fungi). Cleaners or detergents work by washing the surface to lift dirt and germs off surfaces so they can be rinsed away with water. The same thing happens when you wash your hands with soap and water or when you wash dishes. Rinsing is an important part of the cleaning process. Use these products for routine cleaning of surfaces.
- Sanitizers are used to reduce germs from surfaces but not totally get rid of them. Sanitizers reduce the germs from surfaces to levels that are considered safe.
- Disinfectants are chemical products that destroy or inactivate germs and prevent them from growing. Disinfectants have no effect on dirt, soil, or dust. Disinfectants are regulated by the U.S. Environmental Protection Agency (EPA). You can use a disinfectant after cleaning for surfaces that have visible blood or drainage from infected skin.

Facility Cleaning & Disinfection after a MRSA Infection

When MRSA skin infections occur, cleaning and disinfection should be performed on surfaces that are likely to contact uncovered or poorly covered infections.

- Cleaning surfaces with detergent-based cleaners or Environmental Protection Agency (EPA)-registered disinfectants is effective at removing MRSA from the environment.

Missing a trick? Response to: 'Disinfectant wipes are appropriate to control microbial bioburden from surfaces'

2015 Published by Elsevier Ltd on behalf of the Healthcare Infection Society.

I wish to comment on the recent paper examining the efficacy of disinfectant wipes by Sattar et al. The authors state in the summary that, 'Disinfectant pre-soaked wipes are rarely tested using conditions simulating their field use, and the label claims of environmental surface disinfectants seldom include wiping action.' This is absolutely correct, but while the paper goes on to demonstrate the kill potency of different commercial wipes using rigorous methodology, it does not adequately explore the data presumed attributable to the wiping action alone (see control values in Figure 1). Indeed, there is no discussion of the effect from physical wiping without disinfectant.

The authors can correct me if I am wrong but it seems that wiping alone with control cloths reduced *Staphylococcus aureus* and *Acinetobacter baumannii* inocula by 3 log₁₀ colony-forming units after 10 s of wiping. It is possible that the authors have 'missed a trick' here, as they say.

Why is mechanical removal of microbial soil important? Perhaps the most pertinent point to make is that routine cleaning of healthcare surfaces with a range of wipes and cloths in the UK National Health Service is performed with detergent only, and this doesn't appear to have done too much harm given the situation described worldwide.

Furthermore, the reduced toxicity of environmentally friendly cleaning deserves support from such studies. This evidence may encourage other hospitals and healthcare regions to discard routine use of disinfectants and adopt a more 'green' (and exceedingly cheaper) approach.

It is true to say that environmental surface screening, whether during an outbreak or non-outbreak situation, often fails to detect healthcare pathogens of interest despite targeting known reservoirs. There are several reasons for this, but even resilient pathogens are surprisingly few in number on high risk near-patient surfaces.^{3,4} Rarely do screening programmes actually quantify cfu values on these surfaces, but, when they do, organisms such as *S. aureus* and *Clostridium difficile* are <1 log₁₀.^{3,4} If that is the case, then for these organisms at least, a physical wipe that reduces microbial contamination by 3 log₁₀ is more than sufficient to deal with scanty survivors.

Shouldn't the in-vitro impact of physical wiping alone have been explored further? Perhaps the authors missed this particular trick but, on the other hand, they have produced a truly excellent paper, which offers a standard for disinfectant and detergent wipe testing, now and for the future.

Efficacy of Different Cleaning and Disinfection Methods against *Clostridium difficile* Spores: Importance of Physical Removal versus Sporicidal Inactivation

Infection Control & Hospital Epidemiology 2012, VOL 33, NO. 12
William A. Rutala, PhD, MPH; Maria F. Gergen, MT (ASCP);
David J. Weber, MD, MPH¹²

We tested the effectiveness of disinfectants and wipe methods against *Clostridium difficile* spores. Wiping with non sporicidal agents (physical removal) was effective in removing more than 2.9 log₁₀ *C. difficile* spores. Wiping with sporicidal agents eliminated more than 3.90 log₁₀ *C. difficile* spores (physical removal and/or inactivation). Spraying with a sporicide eliminated more than 3.44 log₁₀ *C. difficile* spores but would not remove debris. Infect Control Hosp Epidemiol 2012;33(12):1255-

RESULTS

Results are summarized in Table 2. Any method that included wiping the Formica surface resulted in a greater than 2.90 log₁₀ reduction in *C. difficile* spores. Even wiping with a non germicidal product, QC-53, was effective in eliminating more than 2.90 log₁₀ *C. difficile* spores. Thus, physical removal can eliminate approximately 3 log₁₀ *C. difficile* spores from environmental surfaces.

Our data demonstrated that wiping environmental surfaces, even with a non sporicidal product, can eliminate approximately 3 log₁₀ *C. difficile* spores. Most studies that have quantitated the level of *C. difficile* surface contamination have reported levels below 1 log₁₀ (<10 colony-forming units per Rodac). Thus, the level of *C. difficile* elimination demonstrated by our study would be sufficient to remove the expected level of contamination. Unfortunately, studies have repeatedly demonstrated that less than 50% of room surfaces are adequately cleaned.

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- PCS Process MicroClean for enhanced removal of organic soils including bacteria with microfibre cloths.

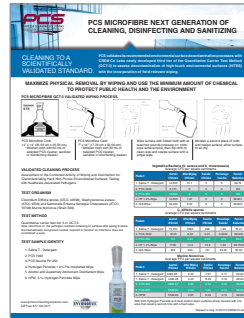
Neutral pH PCS 250 Oxidizing Disinfectant /Disinfectant Cleaner DIN: 02314843

Contains an equilibrium of approximately 50% hypochlorous acid and 50% sodium hypochlorite.

- Contains an equilibrium of approximately 50% hypochlorous acid and 50% sodium hypochlorite.
- Hospital disinfection with neutral pH and up to 95% less chemical.

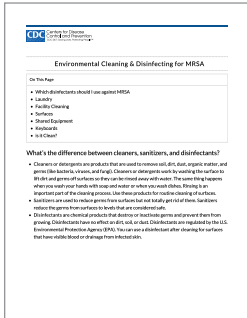


LINKS AND REFERENCES

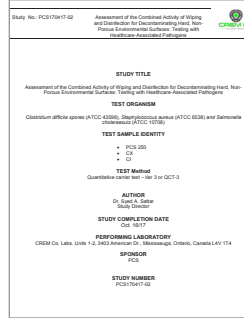


PCS validates its recommended environmental surface decontamination processes with CREM Co Labs newly developed third tier of the Quantitative Carrier Test Method (QCT-3) to assess decontamination of high-touch environmental surfaces (HITES) with the incorporation of field-relevant wiping.

CLEANING TO A SCIENTIFICALLY VALIDATED STANDARD.



Centers for Disease Control Environmental Cleaning & Disinfecting for MRSA



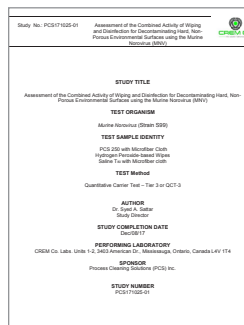
Neutral pH PCS 250 Oxidizing Disinfectant Cleaner Assessment of the Combined Activity of Wiping and Disinfection for Decontaminating Hard, Non-Porous Environmental Surfaces: Testing with Healthcare Associated Pathogens

TEST ORGANISM: Clostridium difficile spores (ATCC 43598), Staphylococcus aureus (ATCC 6538) and Salmonella choleraesuis (ATCC 10708)



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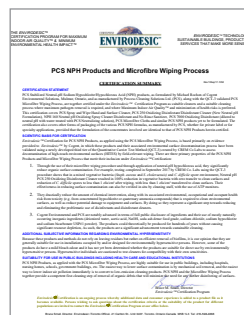


Neutral pH PCS 250 Oxidizing Disinfectant Cleaner Assessment of the Combined Activity of Wiping and Disinfection for Decontaminating Hard, Non-Porous Environmental Surfaces using the Murine Norovirus (MNV)

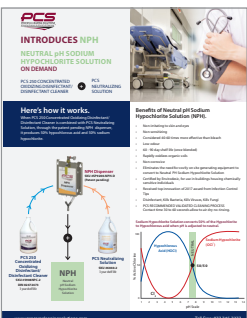
TEST ORGANISM: Murine Norovirus (Strain S99)



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The Envirodesic™ Certification Program for Maximum Indoor Air Quality & Minimum Environmental Health Impact



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Process MicroClean

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