

Think Globally But Buy Local

PCS Hypochlorous Water

Surface cleaning without disturbing dry surface biofilms



Our Indoor Microbiome Includes Difficult to Remove Biofilms on Dry Surfaces

Biofilms can be thought of as a 'microbial village', with an identifiable infrastructure supporting a disparate mesh of bacteria, viruses, fungi, protozoa and spores embedded in exopolymeric substances (EPS) comprising 90% of biofilm.

A community of microorganisms that inhabit most environments.

In Canada, registered disinfectants make no claim to disinfect bacteria encased in dry surface biofilms. According to Professor Stephanie Dancer, Dry Surface Biofilms indoors are on most, if not all, surfaces. Professor Dancer visited Canada's High Arctic and was able to resuscitate 30,000 years old bacteria from a glacier. We may want to pay attention when Professor Dancer suggested cleaning without toxic cleaners or disinfectants to encourage harmless bacteria to populate our Dry Surface Biofilms.

PCS Cleaning Without Harming. PCS Hypochlorous Water diluted to 50 ppm Hypochlorous Acid proven to remove 90% to 99% of harmful pathogens (4). Hypochlorous Acid at 0.01% has demonstrated the ability to physically remove large numbers of bacteria from eyelids by wiping and not change the natural microbial flora (2-3). A 18 ward crossover clinical trial over 15 months, comparing cleaning with a disinfectant, cleaning with a detergent and cleaning with a probiotic cleaner with the number of HAI occurrences concluded.

"In non-ICU wards, routine surface disinfection proved not superior to soap-based or probiotic cleaning in terms of HAI prevention." (1).

PCS Hypochlorous Water surface cleaning without disturbing dry surface biofilms.

PCS Hypochlorous Water remove soils, including bacteria not attached to surfaces from dry surface biofilms, without harming the biofilm integrity. Disinfectants and harsh cleaners damage dry surface biofilms causing them to release large numbers of microbes to the biofilm surface. Posing a health risk of infection by touching surfaces cleaned/disinfected.

Dry surface biofilms, when not disrupted, release very few microbes to the surface of the biofilm and pose a low risk to health.

PCS Hypochlorous Water contain very low levels of stabilized hypochlorous acid, acetic acid and buffering agents. PCS Hypochlorous Water contain at use concentrations insufficient chemical concentration to harm microbes encased in dry surface biofilms or to attack or remove biofilm matrix. Use PCS Hypochlorous Water to clean frequently touched surfaces, floors, walls, equipment, and most surfaces not damaged by water.

We need to encourage dry surface biofilms to include beneficial bacterial populations.

PCS Hypochlorous Water is not hazardous under WHIMIS and requires no use of PPE's is not corrosive to surfaces; the ready-to-use solution has almost no detectable odour, will not stain cloths or require rinsing. Can be used with most currently used cleaning techniques.

PCS Hypochlorous Water's ready to use stabilized formulation remains effective for years in sealed unopened containers. PCS Hypochlorous Water is available in ready-to-use 946ml and 3.78L packages and in a concentrate that dilutes 32 parts water and 1 part cleaner.

Ready-to-Use

Code	Description
6080-4	(Open stock) 3.78L x 4
6080-6	946ml x 6

Concentrate

Code	Description
6081-2	(Closed loop) 3.78L x 4
6081-4	(Open Stock) 3.78L x 4
6081-6	946ml x 6
6081-CS	4.73L x 2 (1 tap per case).

PCS 1000 Plus Oxidizing Disinfectant Concentrate

5948-2	(Closed loop) 3.78L x 4
13121	Burgandy dispenser Dilute 1 to 256 parts water to create 50 PPM Hypochlorous water



REFERENCES

[\(1\) Environmental cleaning to prevent hospital-acquired infections on non-intensive care units: a pragmatic, single centre, cluster randomized controlled, crossover trial comparing soap-based, disinfection and probiotic cleaning.](#)

Summary

Background. The impact of environmental hygiene on the occurrence of hospital-acquired infections (HAIs) remains a subject of debate. We determined the effect of three different surface-cleaning strategies on the incidence of HAIs.

Methods. Between June 2017 and August 2018 we conducted a pragmatic, cluster-randomized controlled crossover trial at 18 non-ICU wards in the university hospital of Berlin, Germany. Surfaces in patient rooms on the study wards were routinely cleaned using one of three agents: Soap-based (reference), disinfectant and probiotic. Each strategy was used on each ward for four consecutive months (4m-4m-4m). There was a one-month wash-in period at the beginning of the study and after each change in strategy. The order of strategies used was randomized for each ward. Primary outcome was the incidence of HAIs. The trial was registered with the German Clinical Trials Register, DRKS00012675.

Interpretation In non-ICU wards, routine surface disinfection proved not superior to soap-based or probiotic cleaning in terms of HAI prevention. Thus, probiotic cleaning could be an interesting alternative, especially in terms of environmental protection.

[\(2\) Reduction in bacterial load using Hypochlorous Acid hygiene solution on ocular skin.](#)

Conclusion: The application of a saline hygiene solution preserved with pure HOCl acid reduced the bacterial load significantly without altering the diversity of bacterial species remaining on the skin under the lower eyelid.

[\(3\) Research Article.](#)

The Microbiome of Meibomian Gland Secretions from Patients with Internal Hordeolum Treated with Hypochlorous Acid Eyelid Wipes.

"Hypochlorous Acid eyelid wipes do not change the microbial diversity of meibomian gland secretions before and after eyelid margin cleaning."

[\(4\) CREMCO.](#)

[Study No.: PCS230215-SA-01](#)

Assessment of the Combined Activity of Spraying PCS Hypochlorous Water and Wiping of PCS Microfiber Cloth for Cleaning Hard, Non-Porous Environmental Surfaces and its Microbicidal Activity: Testing with *Staphylococcus aureus* as a Healthcare-Associated Pathogen

Product	Control CFU/cm2	Contaminated CFU/cm2	Transfer CFU/cm2	Percentage Reduction	Precent Transferred
Test 1	19,554	181	0	99.07	0.00
Test 2	7,852	48	100	99.39	1.27
Average	13,703.1	114	50	99.17	0.36

[Study No.: PCS230215-CD-01](#)

Assessment of the Combined Activity of Spraying Diluted PCS Hypochlorous Water and Wiping of PCS Microfibre Cloth for Cleaning Hard, Non-Porous Environmental Surfaces: Testing with *Clostridioides difficile* spores (ATCC 43598) as a Healthcare-Associated Pathogen

Product	Control CFU/cm2	Contaminated CFU/cm2	Transfer CFU/cm2	Percentage Reduction	Precent Transferred
Test 1	7,178	516	31	92.80	0.43

[\(5\) 2023 United Nations Environment Programme](#)

The environmental dimensions of AMR include pollution from hospital and community wastewater, effluent from pharmaceutical production, run-off originating from plant and animal agriculture and other forms of waste and releases. These matrices may contain not only resistant microorganisms, but also antimicrobials, various pharmaceuticals, microplastics, metals and other chemicals, which all increase the risk of AMR in the environment. Polluted waterways, particularly those that have been polluted for some time, are likely to harbour microorganisms that increase AMR development and distribution in the environment. With increasing pollution and lack of management of sources of pollution, combined with AMR in clinical and hospital settings and agriculture, risks are increasing.

