



**PCS**  
PROCESS CLEANING SOLUTIONS  
*Bringing Science to the Art of Cleaning*

## CLEANING TO PROTECT PUBLIC HEALTH IN AN ERA OF BIOCIDES AND ANTIBIOTIC RESISTANT PATHOGENS.

**PCS NON HAZARDOUS LOW CONCENTRATION, OF NON CAUSTIC, NON TOXIC, NEUTRAL PH SODIUM HYPOCHLORITE SOLUTION.**

### Neutral pH PCS 7000 Oxidizing Cleaner

Apply Neutral PH PCS 7000 Oxidizing Cleaner to surface and immediately wipe dry with PCS microfibre cloth.

#### 1. BACTERIAL BIOFILM AND ASSOCIATED INFECTIONS

The National Institutes of Health (NIH) revealed that among all microbial and chronic infections, 65% and 80%, respectively, are associated with biofilm formation.

Pathogens imbedded in dry surface biofilms accumulate over months and even years and are not removed with our most powerful disinfectants.

Assessment of PCS 5000 Oxidizing Disinfectant Cleaner Wipes for Decontaminating Hard, Non-Porous Environmental Surfaces: Testing against 40 days Age Dry Biofilms

Using cleaning processes that leaves surfaces damp encourages bacteria to form biofilms.

Apply Neutral PH PCS 7000 Oxidizing Cleaner to surface and immediately wipe dry with PCS microfibre cloth.

PCS Apply and Dry cleaning process to prevent biofilms from forming.

#### 2. C. DIFFICILE A LEADING CAUSE OF HEALTH CARE ASSOCIATED INFECTIONS IS NOW A COMMUNITY PROBLEM

Dec. 17, 2019 (Health Day News) Nearly one in 10 patients admitted to a hospital with no symptoms of diarrhea may be a carrier of *Clostridioides difficile*, according to a study published on line Dec. 11 in Infection Control & Hospital Epidemiology.

The researchers found that 9.6 percent of patients were *C. difficile* carriers, including 10.2 percent of the nursing facility residents and 7.7 percent of the community residents.

Washroom cleaning practices should be effective at removing *C. difficile* spores as it is spread by fecal contamination.

Health care facilities rely on sporicidal disinfectants like PCS 5000 ppm sodium hypochlorite to Clean *C. difficile* patient rooms.

Recent American Journal of Infection Control 47 (2019) article reported generic sodium hypochlorite at 200 ppm demonstrated a 5 log reduction of *C. difficile* spores from contaminated cotton fabric with an 8 minute soak.

Alkaline detergent, 640 ppm hydrogen peroxide, 300 ppm of Peracetic acid pH 3 and 300 ppm of Peracetic acid at pH 9 all had no effect on *C. difficile* spores.

PCS Apply and Dry cleaning with PCS microfibre cloths and Neutral pH PCS 7000 Oxidizing Cleaner has proven to remove large numbers of *C. difficile* spores, norovirus as well as vegetative bacteria and prevent their transfer to cleaned surfaces.

#### 3. BIOCIDAL AGENTS USED FOR DISINFECTION CAN ENHANCE ANTIBIOTIC RESISTANCE IN GRAM-NEGATIVE SPECIES

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Conclusions: Antibiotic resistance may occur after exposure of various Gram-negative species to sublethal concentrations of some biocidal agents such as benzalkonium chloride, chlorhexidine or triclosan.

Their use as an antiseptic agent should be restricted to applications with a proven health benefit.

General preference should be given to biocidal agents without or with a low selection pressure assuming that their antimicrobial activity, material compatibility, and user safety is at least as good for the intended use.

PCS Apply and Dry cleaning with PCS microfibre cloths and Neutral pH PCS 7000 Oxidizing Cleaner proven to remove large numbers of bacteria.

Cleaning without applying selection pressure which occurs with antimicrobials products that leave residues in the environment.

## 4.

### BACTERIAL BIOCIDES RESISTANCE: A NEW SCOURGE OF THE INFECTIOUS DISEASE WORLD?

Lucy Jane Bock - Public Health England

Should biocides fail, we may once again live in a more hostile world, in which deaths linked to caesarean sections, preterm births, invasive procedures, burns and accidents are commonplace.

Our dependence on biocides has once again increased in importance in the light of potentially untreatable infections caused by multidrug-resistant (MDR) organisms, as prevention of infections (by using biocides) is once again better than cure (use of failing antibiotics).

However, there is mounting evidence of bacteria also becoming resistant to biocides when used at in-use concentrations for the recommended length of time.

From laboratory studies, we are also aware of a growing body of evidence of cross-resistance to antibiotics. These worrying observations are being studied to understand the relevance of observational studies

and laboratory findings to infection prevention procedures in the clinic and whether the use of certain biocides can lead to inadvertent selection of bacteria that are also more resistant to frontline antibiotics.

There is no coherent strategy concerning the use of biocides in healthcare.

Based on the limited findings so far, the question remains if and when to change the way biocides are currently used to avoid breakdown in infection prevention in the future?

PCS Apply and Dry cleaning with PCS microfibre cloths and Neutral pH PCS 7000 Oxidizing Cleaner.

Proven in multiple hospital studies to reduce bacterial surface contamination to a level low enough to avoid infection.

## 5.

### ASSESSMENT OF THE OVERALL AND MULTIDRUG-RESISTANT ORGANISM BIOBURDEN ON ENVIRONMENTAL SURFACES IN HEALTHCARE FACILITIES

To determine the typical microbial bioburden (overall bacterial and multidrug-resistant organisms [MDROs]) on high-touch healthcare environmental surfaces after routine or terminal cleaning.

Prospective 2.5-year microbiological survey of large surface areas (>1,000 cm<sup>2</sup>). MDRO contact-precaution rooms from 9 acute-care hospitals and 2 long-term care facilities in 4 states.

Samples from 166 rooms (113 routine cleaned and 53 terminal cleaned rooms).

Results. The mean microbial bioburden from routine cleaned room composites were higher 27 colony-forming units cm<sup>2</sup>; than from terminal cleaned room composites 3.5 CFU cm<sup>2</sup>;

MDROs were recovered from 40% of rooms; VRE was the most common (19%).

This multicenter bioburden summary provides a first step to determining microbial bioburden on healthcare surfaces, which may help provide a basis for developing standards to evaluate cleaning and disinfection as well as a framework for studies using an evidentiary hierarchy for envi-

ronmental infection control.

This study provides compelling evidence that current cleaning practices are not accomplishing a level of microbial cleanliness that prevents the spread of antibiotic resistant bacteria.

PCS Apply and Dry cleaning with PCS microfibre cloths and Neutral pH PCS 7000 Oxidizing Cleaner.

Proven in three separate hospital trials to lower average residual microbial bioburden to less than 1 colony forming unit per square centimetre after cleaning as compared to current hospital cleaning practices that averaged 2.797 CFU per square centimetre. \*Industry leaders have proposed a standard of less than 1 CFU per square centimetre after cleaning.

Our future may very well depend on us finding ways to prevent transmission of MDRO multi drug resistant organisms through Cleaning to Protect Public Health.

### REFERENCE DOCUMENTS - CLICK LINK TO DOWNLOAD

#### 1.

Bacterial biofilm and associated infections

Assessment of PCS 5000 Oxidizing Disinfectant Cleaner Wipes for Decontaminating Hard, Non-Porous Environmental Surfaces: Testing against 40 days Age Dry Biofilms.

#### 2.

Physicians Weekly - One in 10 Hospital Patients May Carry C. Diff at Admission

The efficacy of a simulated tunnel washer process on removal and destruction of *Clostridioides difficile* spores from healthcare textiles.

#### 3.

Biocidal Agents Used for Disinfection Can Enhance Antibiotic Resistance in Gram-Negative Species

#### 4.

Bacterial biocide resistance: a new scourge of the infectious disease world?

#### 5.

Assessment of the Overall and Multidrug-Resistant Organism Bioburden on Environmental Surfaces in Healthcare Facilities