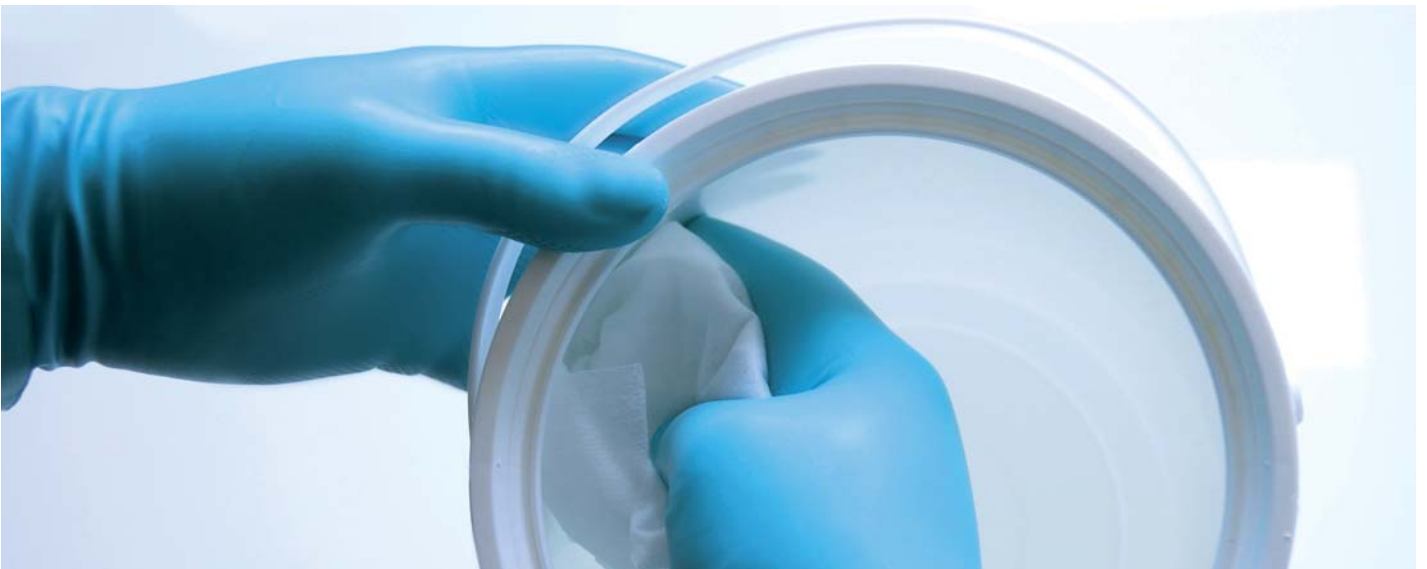


## Overview: Safe reprocessing of wipes dispensers for surface disinfectants.



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Speech and poster given at the 10<sup>th</sup> Ulm Symposium on Nosocomial Infection, March 2013,  
and the 2<sup>nd</sup> International Conference on Prevention & Infection Control (ICPIC), Geneva, 2013.

# Overview

## Safe reprocessing of wipes dispensers for surface disinfectants.



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Wipes dispensers for surface disinfection that are not reprocessed properly before reuse may promote contamination of the use-solution. That is what the Disinfectant Commission in the German Association for Applied Hygiene (VAH) pinpoints in its "Recommendations for monitoring critical points when using dispenser systems for pre-soaked surface disinfection wipes" from November 2012 [1].

### Requirements of the VAH

To prevent infections and nosocomial outbreaks the Disinfectant Commission in the German Association for Applied Hygiene (VAH) has defined critical points that need to be considered when applying dispenser systems for pre-soaked wipes. This includes, for example, regular microbiological examinations of wipes dispensers (solution and wipe, if applicable). Additionally, the containers shall be thoroughly disinfected and dried after wipes have been used up and before they are refilled with wipes and disinfection solution to prevent selection of disinfectant-tolerant microorganisms.

### Materials and methods

Microbial contamination of the use-solution in wipes dispensers primarily is caused by Gram-negative pathogens as examinations of the BODE SCIENCE CENTER show. Without exception, this microbial contamination is linked to surface disinfectants that are based on surface-active substances and contain no additional aldehyde as active ingredient (e.g. QAC, amines, amphoteric surfactants, glucoprotamine, etc.). According to present knowledge, aldehyde-based or alcohol-based products are not affected.

### Contamination – a common problem in daily routine

Studies on the frequency of contaminated solutions in clinical practice brought the following results: on average, more than 40 per cent of the examined use-solutions in dispensers coming from hospitals and practices proved to be highly contaminated (approx.  $10^6$  –  $10^7$  bacteria per ml). *Achromobacter* spp. was identified almost always, but the different clones suggest that a common source is very unlikely. Under the selection pressure, the microorganisms had adapted to the disinfectant solution: Even after five passages on agar plates, the same isolates were much more sensitive to the use-solution with the same disinfectant (increase in efficacy by 2 to 5 log<sub>10</sub> steps). Even independent of passaging, the isolates were able to proliferate in different freshly prepared disinfectant solutions (different manufacturers) at room temperature within 1 to 2 weeks.

Especially the examination of disinfectant solutions actually in use delivered new insights on their contamination and the consequences for the reprocessing of wipes dispensers:

- All contaminated use-solutions belonged to the product group of surface-active ingredients without additional aldehyde.
- Contaminated solutions were found in dispenser systems in different clinics in different Federal states, independent of manufacturer or formulation.
- It is highly likely that the isolated microorganisms do not come from the same source – no clonal identity was determined between isolates from different clinics.
- All dispenser systems had been reprocessed insufficiently.

### Observed frequency of contaminated solutions

Type of product (Federal states)	Hospitals / Dispenser (n)	Contaminated solutions	Species	Cell count
Surface-active substances (4)	13 hospitals	8 (62 %)	<i>Achromobacter species 3</i> (10)	$10^6$ - $10^7$
	65 dispensers	28 (43 %)	<i>Achromobacter xylosoxidans</i> (2) <i>Serratia marcescens</i> (1)*	
Alcohols / aldehydes (2)	3 hospitals 5 dispensers	0	–	–



\* Co-contamination with *Achromobacter species 3*

Additionally, the examinations showed that it is much more difficult to reliably reprocess wipes dispensers that had been used with the above mentioned formulations for months or years already and reprocessed inadequately than new dispensers that had been contaminated in the lab artificially. The reason supposedly is the formation of biofilm and niches in the dispenser (signs of wear and tear).

In order to recommend reprocessing procedures that prevent recontamination of wipes dispensers over the standing time of 28 days, the BODE SCIENCE CENTER has investigated different procedures for several months.

### Materials and methods

All reprocessing methods were conducted with at least three dispensers. The study examined both contaminated dispensers from clinical practice and artificially contaminated dispensers.

For each procedure, the dispenser was emptied completely. And after each reprocessing procedure, the dispenser was refilled with a new fleece roll and disinfectant solution consisting of a surface disinfectant based on surface-active substances without aldehyde (Microbac forte 0.5 %). The dispenser system was then stored at room temperature for 28 days. Each week, three wipes were dispensed. The disinfection solution was sampled for microbial examination on the 7<sup>th</sup>, 14<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup> day.

### Simple manual reprocessing procedure has been evaluated

In addition to other procedures, a simple manual reprocessing proved to be effective in preventing recontamination over a standing time of 28 days. For this, the dispenser is thoroughly rinsed with hot tap water\*, dried and then disinfected with an alcohol-based rapid disinfectant (see page 4 for details).

This simple and effective manual reprocessing procedure is suitable for all wipes dispensers, independent of the active ingredient the surface disinfectant used is based on. For reprocessing, it is now no longer necessary to distinguish surface disinfectants based on surface-active substances without aldehyde and those based on aldehydes or alcohols.

### Recommendation

Hence, the evaluated manual procedure facilitates clinical practice. Please visit [www.bode-science-center.com](http://www.bode-science-center.com) to download detailed descriptions under Center / Surface Hygiene. There you will also find the manual and automated procedures that had been assessed as effective before. These remain a safe alternative for the reprocessing of wipes dispensers.

1 Empfehlung zur Kontrolle kritischer Punkte bei der Anwendung von Tuchspendersystemen im Vortränkssystem für die Flächendesinfektion. Aktuelle Mitteilung Desinfektionsmittel-Kommission im Verbund für Angewandte Hygiene e.V. In: Hygiene & Medizin, 38 (2012), H. 11, S. 468-470.

Source: Speech and poster given at the 10th Ulm Symposium on Nosocomial Infection, March 2013, and the 2nd International Conference on Prevention & Infection Control (ICPIC), Geneva, 2013.



\* **Please note:** Proceed with caution when using hot water; risk of scalding. The term "hot water" refers to German technical rules on domestic water heating. In large water supply plants, as they are used for hospitals and other facilities, the water's temperature in the entire system must not be below > 55 °C in order to reduce the growth of legionellae.

Source: Technical Rule, Worksheet W551. Domestic water heating and drinking water tubing systems; technical measures to reduce legionellae growth; planning, installation, operation and modernisation of drinking water installations. German Association for Gas and Water, a registered technical-scientific association (DVGW); Bonn, 04/2004, page 12



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## Reprocessing procedures for wipes dispensers

The procedures may be used for all wipes dispenser systems – independent of whether they are filled with surface disinfectants based on surface-active substances without aldehyde or with surface disinfectants based on aldehydes or alcohols.

For all procedures it is imperative to remove and discard any fleece roll and liquid residue first.

### Manual reprocessing procedures

Thoroughly rinse dispenser and lid with hot tap water\* and dry.

Afterwards, wipe disinfect all surfaces with Bacillol AF (or any other surface disinfectant with a high alcohol content that dries without leaving any residue). Pay attention to the exposure time of at least 30 seconds.

After all surfaces are completely dry, refill the dispenser with a new fleece roll and freshly prepared disinfection solution to be used for up to 28 days.

### Automated reprocessing procedure

In professional machines only.

At 60 °C and with an exposure time of at least 5 minutes.

Reprocessing with mildly alkaline / highly alkaline or without cleaner.

Refill with new fleece roll and use-solution.

\* see note on page 3

**PLEASE NOTE:** The manual procedures – manual reprocessing with Bodedex forte and Bacillol AF and manual reprocessing with Dismozon plus or Dismozon pur – that had been assessed as effective before remain safe and valid.

Please visit [www.bode-science-center.com](http://www.bode-science-center.com) and go to Center / Surface Hygiene to download detailed descriptions of all reprocessing procedures.

Staff and patient protection lies at the core of our scientific commitment, basing on comprehensive efficacy testing, the examination of infection risks and the development of quality products and targeted prevention methods.

Research for infection protection. [www.bode-science-center.com](http://www.bode-science-center.com)

