Information leaflet

clinell™
SURFACE

The benefits of wet wipes

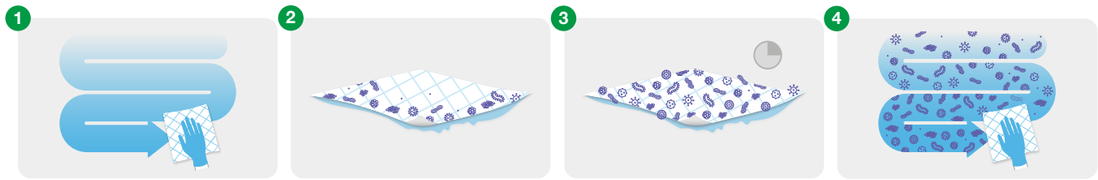
And the issues with reusable cloths, solutions and sprays.

Clinell wet wipes consistently deliver a stable, effective dose of disinfectant, which has been tested and proven to kill microorganisms within realistic contact times and conditions, unlike solutions, sprays and reusable cloths.

Issues with reusable cloths

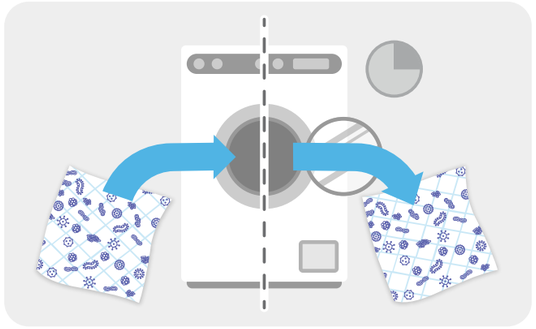
Over time, reusable damp cloths breed microorganisms. These are then transferred onto surfaces when the cloth is re-used.

When using the same cloth throughout the day the cloth usually remains damp in between usage, as drying out of the cloth is often incomplete. This leaves small areas of dampness within the cloth, which can lead to growth of mould and bacteria. These microorganisms can then be spread around surfaces when the cloth is re-used.

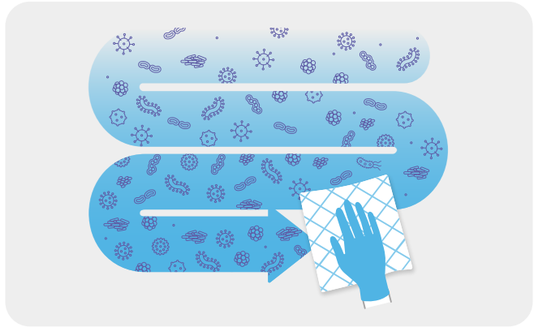


1. Microorganisms are cleaned from a surface
2. Microorganisms are retained in the wipe
3. Microorganisms grow in damp conditions
4. Microorganisms are spread by the cloth

It has recently been shown that hospital laundering practices are insufficient at removing microbial contaminants and may even add contaminants to reusable cleaning cloths[1].



Laundering does not remove microorganisms



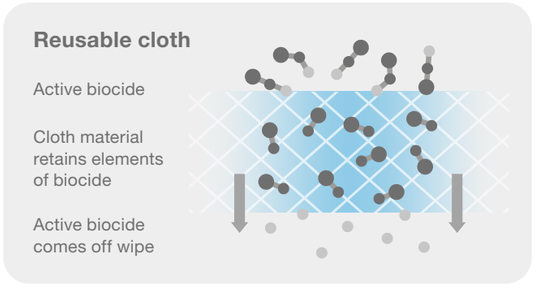
Microorganisms are spread by the cloth

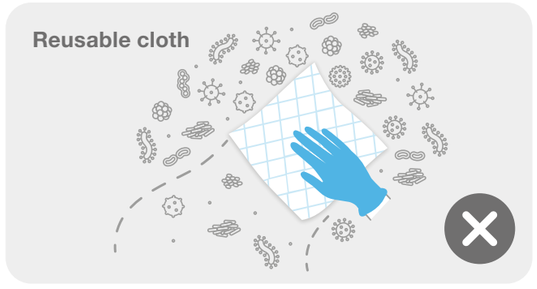
93% of all reusable cloths, tested after laundry, were found to have viable microorganisms[1]

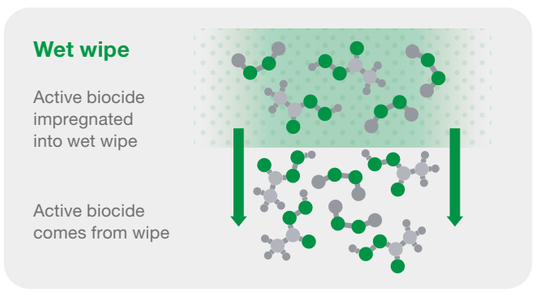
Is your disinfectant compatible with the cloth you are using?

The molecular structure of the cloth can alter the formulation of the disinfectant.

By binding certain components and rendering them inactive, the solution that comes off the cloth may not be the same as what goes on.







Efficacy testing on disinfectant sprays and solutions has been performed on the liquid. Reusable cleaning cloths are made of either synthetic or natural materials, which can bind to some of the molecules within the biocide, changing the properties of the active disinfectant and rendering it inactive.

This means that the liquid coming off the cloth may not be the same composition as the liquid that went into the cloth. For example, it has been shown that the combination of quaternary ammonium compounds (QACS) with an inappropriate type of fabric will effectively abolish its antimicrobial activity[2].

Hospital laundering practices appear insufficient to remove microbial contaminants and may even add contaminants to the towels[1]. In addition, dry cloths can interfere with the action of common hospital disinfectants[2].

Either independently, or in combination, these two factors may increase the risk of transmission of pathogens in hospitals. Observations indicate the need to critically re-evaluate current hospital cleaning practices associated with the re-use of cloth towels[1].

If you do use cloths with disinfectants always ensure the manufacturer has tested their disinfectant to be compatible with the cloth you are using.

Dry cloths can interfere with the action of common hospital disinfectants[2]

Sprays and wipes

Irregular spray patterns lead to areas of low biocide concentration. Wet wipes always deliver the correct dose.

When using sprays and dry wipes, it is common to end up with a suboptimal (low) concentration of the biocides. It has been shown that impregnated wet wipes are significantly better at removing microbial bioburden than when using a spray and dry wipe[3].

1	2	3	4
Sprays don't provide even coverage	Inconsistent biocide coverage is ineffective	Low biocide concentration may create resistance	Uniform concentration of biocide with a wet wipe

Studies have shown that low concentrations of biocides can cause microorganisms to develop cross-resistance to antibiotics[4,5]. A wet wipe has the advantage of always having a pre-measured dose of biocides at the correct concentration, thereby avoiding the risk of low doses that than can lead to resistance[4,5].

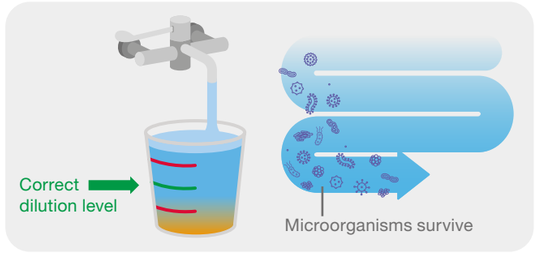
Provided there is proper use of efficacious surface disinfectants, avoiding low concentrations of biocides, the present scientific data does not suggest that resistance problems will emerge[6,7].

Wet wipes are significantly better at removing microbial bioburden than spray and dry wipe[3]

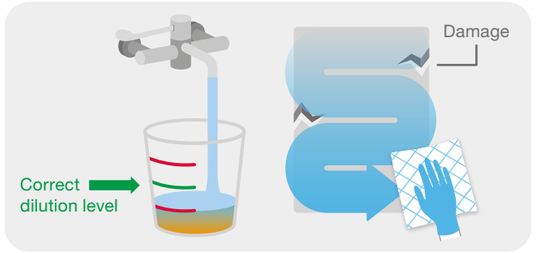
Dilution errors with chlorine liquids, powders & tablets

Over-dilution creates an ineffective solution. Under-dilution damages equipment.

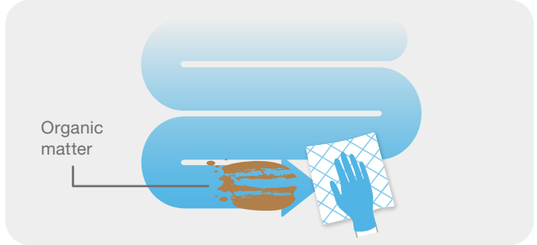
Dirt within the solution and on the surface makes chlorine ineffective.



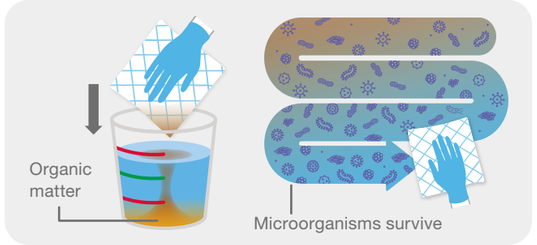
Over-diluted solutions are weak and ineffective



Under-diluted solutions are toxic and can cause damage to materials



Organic matter makes chlorine ineffective



Organic matter breaks down chlorine

Dilution errors can occur when preparing disinfectant solutions directly in buckets and without good quality dilution bottles. An error of using too much water when mixing up a solution can result in a disinfectant that is too weak and ineffective. Conversely, using too little water results in a solution that is too strong, toxic and harmful to materials and to the user.

Chlorine breaks down over time and since it is common practice to leave the mixed-up solution for many hours before using it, this often means using an ineffective solution. Chlorine is ineffective in dirty conditions, therefore a dirty surface will need to be pre-cleaned. Universal wet wipes contain detergent and biocides and so cleans and disinfects in one step.

When a cloth is dipped back into the bucket, organic matter (dirt) is introduced into the bucket and this accelerates the breakdown of chlorine.

These issues can all lead to a significant variation in the concentration of chlorine. With a wet wipe you get a standard consistent dose that is always correct. The type of cloth you use can also affect the cleaning efficacy. Chlorine solution is tested in the laboratory for its effectiveness but testing is not done on the solution in conjunction with the cloth.

As previously mentioned, different cloth materials affect the solution that is released from the cloth. Therefore, you can never be sure that the solution coming off the cloth is the same as the solution that went into the cloth[1,2].

With Clinell wet wipes we test the actual wipe and also the liquid coming off the wipe, so that you can be 100% certain that the solution on the surface works effectively.

Health issues

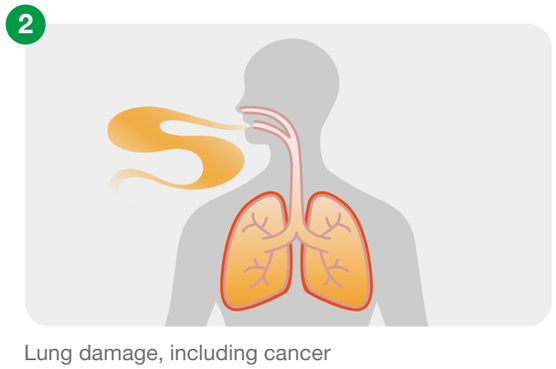
Toxic fumes from chlorine can affect the lungs, eyes, nose and throat.

There is evidence that chronic inhalation of chlorine can increase the risk of lung cancer[10].

1

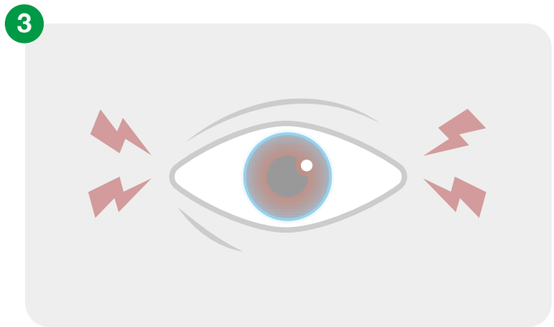
Toxic fumes from chlorine based products

2



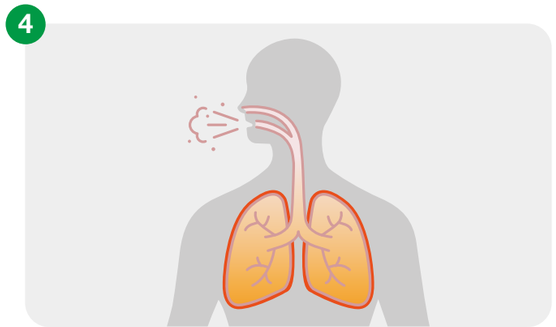
Lung damage, including cancer

3



Eye irritation

4



Nose and throat damage, causing coughs and shortness of breath

All disinfecting procedures must include a risk assessment of potential toxicological hazards[6]. Chlorine is very toxic to both the user and the patients, emitting toxic, carcinogenic fumes and by-products. Chlorine use has been shown to cause obstructive lung disease[8], shortness of breath, eye irritation, nasal complaints, cough and skin complaints[9].

There is always a risk of user error when making up a chlorine solution every day.

References:

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2. Bloss R et al. Adsorption of active ingredients of surface disinfectants depends on the type of fabric used for surface treatment. *Journal of Hospital Infection* 75 (2010) 56–61
3. Panousi M et al. Evaluation of alcohol wipes used during aseptic manufacturing. *Lett Appl Microbiol.* 2009 May;48(5):648-51. doi: 10.1111/j.1472-765X.2009.02574.x. Epub 2009 Feb 18.
4. Maillard JY et al Emerging bacterial resistance following biocide exposure: should we be concerned? Chemica Oggi. 2009;27(3):26-8.
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7. Meyer B, Cookson B. Does microbial resistance or adaptation to biocides create a hazard in infection prevention and control? *J Hosp Infect.* 2010 Nov;76(3):200-DOI: 10.1016/j.jhin.2010.05.020
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9. LoVecchio F et al. Outcomes of chlorine exposure: a 5-year poison center experience in 598 patients. European Journal of Emergency Medicine: June 2005 - Volume 12 - Issue 3 - pp 109-110
10. Jappinen P et al. Cancer incidence among pulp and paper workers exposed to organic chlorinated compounds formed during chlorine pulp bleaching. *Scand J Work Environ Health.* 1991 Oct;17(5):356-9.

Use disinfectants safely.

Always read the label and product information before use.

Always follow medical equipment manufacturer's cleaning procedures and guidelines.

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