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# MICROBIOLOGICAL PROFILE



## Chlor Liquid

General purpose

# CHLOR LIQUID MICROBIOLOGICAL PROFILE

## INTRODUCTION

**CHLOR LIQUID** is an extremely versatile general purpose cleaner and disinfectant.

**CHLOR LIQUID** keeps toilets, drains and sinks clear of bad odours, waste matter and bacteria.

**CHLOR LIQUID** is ideal for soaking cloths and mops.

**CHLOR LIQUID** easily removes tannin stains from teacups and teapots.

Unperfumed	Use in washrooms, toilets and kitchens	Suitable for wiping down hard surfaces
If used undiluted, product provides 50,000 parts per million available chlorine		Sanitises crockery

## CHLOR LIQUID - EFFICACY SUMMARY

**CHLOR LIQUID** has been tested and proven to be effective against a range of micro-organisms. European Standard (EN\*) test methods were used to prove efficacy against bacteria and fungi.

The UKAS accredited Microbiology Laboratory at Evans Vanodine International plc. (Testing number 1108) performed tests with bacteria and fungi.

\*EN - European Norm

Published in the UK as BS EN by the British Standards Institution.

The following tables include information of relevant, applicable test methods, conditions, organisms and contact times.



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## ACTIVITY AGAINST BACTERIA

BACTERIA TEST PROFILE					
ORGANISMS	DILUTION	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
<i>Enterococcus hirae</i>	1:400	EN 1276	20	5	Clean
	1:50				Dirty
<i>Escherichia coli</i>	1:400				Clean
	1:75				Dirty
<i>Pseudomonas aeruginosa</i>	1:400				Clean
	1:75				Dirty
<i>Staphylococcus aureus</i>	1:400				Clean
	1:100				Dirty

## ACTIVITY AGAINST YEAST

YEAST TEST PROFILE					
ORGANISMS	DILUTION	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
<i>Aspergillus brasiliensis</i>	1:25	EN 1650	20	15	Dirty
<i>Candida albicans</i>	1:25				

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## HARD SURFACE PRODUCT TEST METHODS

For the Biocidal Product Regulation (BPR) there are two product types applicable to hard surface disinfectants. Product Type 2; Disinfectants used for the disinfection of surfaces, materials, equipment and furniture which are not in direct contact with food or feeding stuffs and Product Type 4; Disinfectants used for the disinfection of equipment containers, consumption utensils, surfaces or pipework associated with the production, transport, storage or consumption of food or feed for humans and animals.

There are two types of laboratory test methods for disinfectants i.e. suspension methods and surface methods. As a minimum for general purposes products should be effective against bacteria and yeast.

The scope of food area EN methods applies to disinfectants used in food, industrial, domestic, institutional areas, excluding areas and situations where disinfection is medically indicated, and products used on living tissue except those for hand hygiene in the above areas.

The interfering substances used in EN test methods are described as dirty or clean in medical, food, industrial, domestic and institutional areas. They simulate levels of soiling encountered in practical and real-life situations.

## EN TEST METHODS

TEST REFERENCE		TEST TYPE	ORGANISM	TEST PASS CRITERIA
EN 1276	For bactericidal activity in the food, industrial, domestic and institutional areas.	Suspension	Bacteria	≥5 log reduction
EN 1650	For fungicidal or yeasticidal activity in the food, industrial, domestic and institutional areas.	Suspension	Fungi/Yeast	≥4 log reduction

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## LOG REDUCTION

Products claiming they will kill 99.9% of bacteria sounds extremely efficient, however it does not prove that a product is an effective disinfectant.

In order to demonstrate effectiveness disinfectants should be tested using European Standard Test Methods. Depending on the applicable area and test used, relevant log reductions are specified and must be achieved to claim effectiveness with a test method. This means a reduction in microbial numbers must be seen when compared to the number of organisms at the start of the test or, for surface tests, to a water control performed at the same time. As the numbers are large it is generally accepted that they are expressed as a logarithm. The reduction can be written as either a log value or a percentage i.e. a 5 log reduction is equivalent to a 99.999% reduction, a 3 log reduction is equivalent to 99.9% reduction.

Bacteria are microscopic free living single celled organisms. A surface contaminated with raw meat for example could have millions of bacteria per square centimetre e.g. a surface with 1,000,000 bacteria treated with a product that kills 99.9% of bacteria would still have 1000 bacteria remaining. **If the surface were treated with a product that kills 99.999% of bacteria only 10 bacteria would remain.**

Bacterial growth rates vary depending on the surface, type and degree of soiling, temperature and presence of water. For example, E.coli under ideal conditions multiplies every 15 minutes. If conditions are less than ideal (lowering the temperature or drying the surface) the growth rate slows down.

e.g. 1,000 bacteria would increase to 2,000 after 15 minutes, after 30 minutes it would be 4,000 and after 1 hour 16,000 and 256,000 after 2 hours, **10 bacteria would only have multiplied to 2560 in the same 2 hour period.**

The presence of bacteria does not automatically lead to infection, susceptibility to disease and the infectious dose (number of bacteria required to cause infection) are vitally important. Some bacteria will cause an infection with less than 100 cells ingested or introduced into cuts or wounds. For this reason, it is important to reduce numbers of harmful bacteria to the lowest number possible wherever the risk of infection is high.

THE FOLLOWING FIGURES APPLY IF THE NUMBER AT THE START POINT WAS 1,000,000		
LOG REDUCTION	NUMBER REMAINING	PERCENTAGE REDUCTION
1	100,000	90%
2	10,000	99%
3	1,000	99.9%
4	100	99.99%
5	10	99.999%