



Evans Vanodine International
GLOBAL HYGIENE SOLUTIONS

MICROBIOLOGICAL PROFILE



E-Phos™

Perfumed toilet cleaner & sanitiser

Edition 2: May 2021

Evans Vanodine International plc

E-PHOS MICROBIOLOGICAL PROFILE

INTRODUCTION

E-PHOS is a multi-purpose, acidic bactericidal washroom cleaner.

E-PHOS is thickened and highly perfumed.

E-PHOS is suitable for cleaning toilets, urinals, washbasins, showers and tiled surfaces.

E-PHOS removes limescale, body fat and general soil from porcelain, stainless steel, chrome, ceramic and quarry tiles.

Contains a long-lasting perfume	Read- to-use formulation	Quick and efficient cleaning action
Thickened - clings to surfaces allowing a longer contact time		Available in 5 litres and 1 litre bottles

E-PHOS - EFFICACY SUMMARY

E-PHOS 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.

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

*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.



Evans Vanodine International plc

E-PHOS MICROBIOLOGICAL PROFILE

ACTIVITY AGAINST BACTERIA

BACTERIA TEST PROFILE					
ORGANISMS	DILUTION	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
<i>Enterococcus hirae</i>	Undiluted	EN 1276	20	2	Dirty
<i>Escherichia coli</i>					
<i>Pseudomonas aeruginosa</i>					
<i>Staphylococcus aureus</i>					

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.

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.

All EN test methods define test conditions specific for the areas where disinfectant will be applied.

Contact times in general are between 1 minute and 60 minutes depending on the application of the product e.g. products to be sprayed and wiped off will have shorter contact times.

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.

Generally disinfectant activity improves at higher temperatures, under clean conditions. If the temperature is less than 20°C with dirty conditions a longer contact time may be necessary.

There are two types of laboratory test methods for disinfectants i.e. suspension methods and surface methods. They are both quantitative and involve adding a test inoculum (mixture of test organism and interfering substance) adding the disinfectant, sampling at specified times, neutralising the sample and then calculating the number of surviving organisms.

Surface methods use different carriers depending on the application area, e.g. stainless steel discs (food), PVC tiles (medical), wood (veterinary), synthetic skin (veterinary). The inoculum is dried on to the surface before the disinfectant is applied, mechanical action is also employed in one method by using wipes.

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

Evans Vanodine International plc

E-PHOS MICROBIOLOGICAL PROFILE

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%