Evans Vanodine International
GLOBAL HYGIENE SOLUTIONS

MICROBIOLOGICAL PROFILE

Peroxy Disinfectant

Powder disinfectant

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PEROXY DISINFECTANT MICROBIOLOGICAL PROFILE

INTRODUCTION

PEROXY DISINFECTANT is a concentrated powder disinfectant.

PEROXY DISINFECTANT has a broad spectrum of activity. It is bactericidal, fungicidal and virucidal.

PEROXY DISINFECTANT is DEFRA approved.

PEROXY DISINFECTANT is suitable for use as an aerial, surface, fogging or water system disinfectant

PEROXY DISINFECTANT is designed for use as part of an effective cleaning and disinfection (hygiene) programme.

Effective in hard water, low temperatures and high soiling		**Easily dissolves in tepid water**
Effective against biofilms	**Powerful and fast-acting**	**Effective against viruses, yeast and bacteria**

PEROXY DISINFECTANT - EFFICACY SUMMARY

PEROXY DISINFECTANT 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, viruses and yeast.

The UKAS accredited Microbiology Laboratory at Evans Vanodine International plc. (Testing number 1108) performed tests with bacteria and yeast. In addition, virus tests have been performed by an independent expert laboratory using appropriate methods.

PEROXY DISINFECTANT is approved in the UK by the Department for Environment, Food and Rural Affairs (DEFRA), for disinfection where an approved product is required https://www.gov.uk/guidance/get-your-disinfectant-approved-by-defra. This approval is also mirrored in Northern Ireland and Ireland by DARDNI and DAERA, respectively.

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

*EN - European Norm
Published in the UK as BS EN by the British Standards Institution.

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SUMMARY OF TEST RESULTS FOR VETERINARY AREAS

BACTERIAL TEST PROFILE

ORGANISMS	DILUTION	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
Campylobacter jejuni	1:200	EN 1656	10	30	High
Enterococcus hirae	1:100				Low
Escherichia coli	1:200				High
Listeria monocytogenes	1:100				High
Proteus vulgaris	1:400				Low
Pseudomonas aeruginosa	1:400				Low
Salmonella enteritidis	1:100				High
Salmonella pullorum	1:100				High
Staphylococcus aureus	1:100				Low
Salmonella enteritidis	1:100	DEFRA	4	30	5% Yeast

VIRUS TEST PROFILE

VIRUS	DILUTION	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
Canine parvovirus	1:100	EN 14675	10	30	Low
Foot and Mouth Disease Virus 0l British field strain 1860/UK167	1:1200	DEFRA	4	30	1% Foetal bovine serum
Newcastle Disease virus	1:200				5% yeast

FUNGI TEST PROFILE

ORGANISMS	DILUTION	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
Candida albicans	1:25	EN 1657	10	30	Low

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SUMMARY OF TEST RESULTS FOR FOOD, INDUSTRIAL, INSTITUTIONAL AND DOMESTIC AREAS

BACTERIAL TEST PROFILE					
ORGANISMS	**DILUTION**	**TEST METHOD**	**TEMP (°C)**	**CONTACT TIME (MINUTES)**	**SOIL LEVEL**
Enterococcus hirae	1:100	EN 1276	20	1	Dirty
Escherichia coli	1:200				
Pseudomonas aeruginosa	1:200				
Staphylococcus aureus	1:100				
Enterococcus hirae	1:100	EN 16615 modified*	Room temp	1	Dirty
Escherichia coli	1:1600				
Pseudomonas aeruginosa	1:800				
Staphylococcus aureus	1:100				

FUNGI TEST PROFILE					
ORGANISMS	**DILUTION**	**TEST METHOD**	**TEMP (°C)**	**CONTACT TIME (MINUTES)**	**SOIL LEVEL**
Candida albicans	1:25	EN 1657	10	30	Low
	1:400	EN 16615 modified*	Room temp	1	Dirty

* Modified see page 6

SUMMARY OF TEST RESULTS FOR MEDICAL AREAS

BACTERIAL TEST PROFILE					
ORGANISMS	**DILUTION**	**TEST METHOD**	**TEMP (°C)**	**CONTACT TIME (MINUTES)**	**SOIL LEVEL**
Enterococcus hirae	1:800	EN 13727	20	1	Dirty
Escherichia coli K12	1:200				
Pseudomonas aeruginosa	1:200				
Staphylococcus aureus	1:100				

VIRUS TEST PROFILE					
ORGANISMS	**DILUTION**	**TEST METHOD**	**TEMP (°C)**	**CONTACT TIME (MINUTES)**	**SOIL LEVEL**
Vaccinia virus	1:100	EN 14476	20	5	Low

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EN TEST METHODS

There are two types of laboratory test method for disinfectants i.e. suspension methods and surface methods.

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.

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

There are 3 different claims that can be made when virus tests are used, either for full virucidal activity, limited spectrum virucidal activity or activity against enveloped viruses. It will depend on the viruses tested which claim can be applied.

VETERINARY DISINFECTANT TEST METHODS

Veterinary disinfectants can be used in a variety of areas e.g. the breeding, husbandry, production, transport and disposal of all animals except when in the food chain following death and entry to the processing industry.

As a minimum for general hygiene purposes, products should be effective against bacteria and yeast.

The scope of veterinary RN test methods does not specify application of the product but would include disinfection by immersion and surface disinfection by wiping, spraying, foaming or other means. It does not include aerial disinfection.

TEST REFERENCE		TEST TYPE	ORGANISM	TEST PASS CRITERIA
EN 1656	For bactericidal activity.	Suspension	Bacteria	≥5 log reduction
EN 1657	For fungicidal and/or yeasticidal activity.	Suspension	Fungi/Yeast	≥4 log reduction
EN 14675	For virucidal activity.	Suspension	Virus	≥4 log reduction

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MEDICAL AREA PRODUCT TEST METHODS

For the Biocidal Product Regulation (BPR) there is one product type applicable. Product Type 2; Disinfectants used for the disinfection of surfaces materials, equipment and furniture which are not used for direct contact with food or feeding stuffs.

As a minimum for general hygiene purposes products should be effective against bacteria and yeast.

The scope of medical area EN test methods apply to hygienic and surgical, handwash and handrubs and instrument disinfection by immersion and surface disinfection by wiping, spraying, flooding or other means.

Areas and situations where disinfection or antisepsis is medically indicated for patient care e.g. hospitals, community medical facilities, dental institutions, clinics of schools, nurseries and nursing homes.

TEST REFERENCE		TEST TYPE	ORGANISM	TEST PASS CRITERIA
EN 13727	For bactericidal activity in the medical area.	Suspension	Bacteria	≥5 log reduction
EN 14476	For virucidal activity in the medical area.	Suspension	Virus	≥4 log reduction

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.

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 of 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 test methods applies to disinfectants used in food, industrial, domestic and 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.

TEST REFERENCE		TEST TYPE	ORGANISM	TEST PASS CRITERIA
EN 1276	For bactericidal activity.	Suspension	Bacteria	≥5 log reduction
EN 16615	For bactericidal and/or yeasticidal activity in the medical area. For products used to disinfect non-porous surface with a mechanical action. Modified to use stainless steel carriers, interfering substance and *Escherichia coli* parameters from food, industrial, domestic and institutional areas.	Surface	Bacteria	≥5 log reduction
		Surface	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%