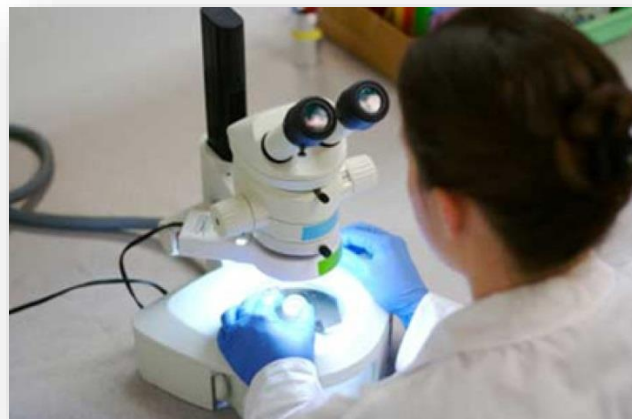




Evans Vanodine International plc

GLOBAL HYGIENE SOLUTIONS

VANOQUAT



MICROBIOLOGICAL PROFILE

VANOQUAT MICROBIOLOGICAL PROFILE

INTRODUCTION

VANOQUAT is a bactericidal disinfectant with limited virucidal activity. It may be used to disinfect food contact surfaces in food processing applications where good hygiene practices are essential.

For food process applications VANOQUAT may be applied by brushing, soaking or spraying in single or two stage cleaning disinfection programmes to kill pathogenic and spoilage organisms.

VANOQUAT has been tested using European Standard or modified EN test methods to demonstrate bactericidal, fungicidal and virucidal activity. EN tests have been carried out in the UKAS accredited Microbiology Laboratory of Evans Vanodine International PLC or at independent UKAS accredited laboratories or at independent expert laboratories, in the case of virus tests.

It has also been tested in independent laboratories against *Ralstonia solanacearum* and the fungal pathogen *Fusarium oxysporum*, both organisms that cause banana wilt.

Results are presented in tables following with effective dilution rates expressed as one part of VANOQUAT in 'x' parts of water. (1:x)

PLEASE REFER TO PRODUCT LABEL FOR HOW TO USE AND FOR ALL RECOMMENDED USE DILUTION RATES

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BACTERICIDAL ACTIVITY

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The following bacteria tested

Campylobacter jejunii

Enterococcus hirae

Escherichia coli

Escherichia coli "0157"

Listeria monocytogenes

Pseudomonas aeruginosa

Ralstonia solanacearum

Salmonella enteritidis

Salmonella typhimurium

Staphylococcus aureus

CEFAS Aquaculture Disinfectant Listing Scheme

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FUNGICIDAL ACTIVITY

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The following fungi tested

Aspergillus brasiliensis

Candida albicans

Fusarium oxysporum f.sp.cubense

VIRUCIDAL ACTIVITY

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The following viruses tested

Influenza A H1N1

Vaccinia virus

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BACTERICIDAL ACTIVITY IN SUSPENSION

Test conditions: 5 minute contact time, 20°C, hard water, dirty conditions		
BACTERIA	DISEASE	BACTERICIDAL DILUTION
<i>Enterococcus hirae</i>	Urinary tract infections	1:800
<i>Escherichia coli</i>	Food poisoning	1:200
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen wound, burn infections	1:100
<i>Staphylococcus aureus</i>	Boils, wound infections	1:800
<i>Campylobacter jejunii</i>	Food poisoning	1:800
<i>Escherichia coli</i> "0157"	Food poisoning	1:100
<i>Listeria monocytogenes</i>	Food poisoning	1:800
<i>Salmonella enteritidis</i>	Food poisoning	1:100
<i>Salmonella typhimurium</i>	Food poisoning	1:100
Test conditions: 5 minute contact time, 20°C, hard water, clean conditions		
<i>Enterococcus hirae</i>	Urinary tract infections	1:800
<i>Escherichia coli</i>	Food poisoning	1:200
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen wound, burn infections	1:100
<i>Staphylococcus aureus</i>	Boils, wound infections	1:800
Test conditions: 5 minute contact time, 30°C, hard water, dirty conditions		
<i>Ralstonia solanacearum</i>	Banana wilt	1:200

EN 1276

Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic, and institutional areas.

This method is designed to test bactericidal products specifically for use in the Food and Catering Industry. It may be carried out under dirty (representative of surfaces which are known to or may contain, organic and/or inorganic materials) and clean (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

In order to pass the test at least a 5 log reduction (99.999% reduction) must be achieved with four obligatory bacteria.

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CEFAS AQUACULTURE DISINFECTANT LISTING SCHEME

The Centre for Environment, Fisheries and Aquaculture Science (CEFAS) is an executive agency of DEFRA responsible for marine science.

The Fish Health Inspectorate (FHI) – based at CEFAS operate the scheme in partnership with Marine Scotland Science (MSS) and the Agri-food and Biosciences Institute, Northern Ireland (AFBI).

VANOQUAT was tested against the following fish pathogens and found to be effective, *Aeromonas salmonicida*, *Carnobacterium maltaromaticum*, *Lactococcus garvieae*, and *Yersinia ruckeri*.

DILUTION LISTED
1:100

VANOQUAT MICROBIOLOGICAL PROFILE

FUNGICIDAL AND YEASTICIDAL ACTIVITY IN SUSPENSION

Test conditions: 15 minute contact time, 20°C, hard water, dirty conditions		
FUNGI	DISEASE	FUNGICIDAL DILUTION
<i>Aspergillus brasiliensis</i>	Aspergillosis	Undiluted
YEAST	DISEASE	YEASTICIDAL DILUTION
<i>Candida albicans</i>	Thrush	1:100
Test conditions: 5 minute contact time, 20°C, hard water, clean conditions		
YEAST	DISEASE	YEASTICIDAL DILUTION
<i>Candida albicans</i>	Thrush	1:200

EN 1650

Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in veterinary area.

Designed to test fungicidal products specifically for use in the Food and Catering Industry. It is carried out under “dirty” (representative of surfaces which are known to or may contain organic and/or inorganic materials) and “clean” (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

In order to pass the test as a fungicidal disinfectant, at least a 4 log reduction (99.99% reduction) must be achieved with *Aspergillus brasiliensis* and *Candida albicans*.

In order to pass the test as a yeasticidal disinfectant, at least a 4 log reduction must be achieved against *Candida albicans*.

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FUNGICIDAL ACTIVITY IN SUSPENSION

Modified Test conditions: 30 minute contact time, 20°C, hard water, high soiling conditions		
FUNGI	DISEASE	PASS DILUTION
<i>Fusarium oxysporum f.sp. cubense</i>	Fusarium wilt of bananas (Panama disease)	1:100

Modified EN 1657

Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in veterinary area.

This European Standard is applicable to products for use in the veterinary field, i.e. in the breeding, husbandry, production, transport and disposal of all animals except when in the food chain following death and entry to the processing industry.

This method was chosen and modified to allow the use of high soiling conditions as specified for the veterinary area i.e. higher soiling than dirty conditions in EN 1276 or EN 1650.

The test was carried out using the fungal pathogen *Fusarium oxysporum* instead of *Aspergillus brasiliensis*, and the temperature of the test was 20°C instead of 10°C as specified in the standard.

In order to pass the test at least a 4 log reduction (99.99% reduction) must be achieved.

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VIRUCIDAL ACTIVITY

Modified Test conditions: 5 minute contact time, 20°C, clean conditions		
VIRUS	DISEASE	EFFECTIVE DILUTION
Influenza A H1N1	Avian Influenza	1:50

Modified EN 14476

Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of virucidal activity in the medical area

EN 14476 was modified to test only Avian Influenza virus.

It was carried out under “clean” (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

One test was carried out using the virus Influenza A H1N1 instead of Poliovirus, Adenovirus or Murine Norovirus, as specified in the standard.

In order to pass the test at least a 4 log reduction (99.99% reduction) must be achieved.

Test conditions: 5 minute contact time, 20°C, clean conditions		
VIRUS		EFFECTIVE DILUTION
Vaccinia virus	Used as a surrogate for enveloped viruses	1:25

Vaccinia virus is used to assess virucidal activity against enveloped viruses. According to EN 14476 the test for virucidal activity against enveloped viruses will cover all enveloped viruses only. Annex A of EN 14476 includes Coronavirus in the examples of enveloped viruses. Other examples are given on page 7.

A pass in EN 14476 against vaccinia virus allows a claim for effectiveness against Coronavirus COVID-19. Therefore VANOQUAT at the dilution of 1:25 with a 5 minute contact time, used in the test, can be considered effective .

EN 14476

Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of virucidal activity in the medical area

Designed to test the virucidal activity of products specifically for use in the medical area (instruments, surfaces and hands). It was carried out under “clean” (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

Vaccinia virus For activity against enveloped viruses

In order to pass the test at least a 4 log reduction (99.99% reduction) must be achieved.

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Information taken from EN 14476: Annex A.

The following examples of human enveloped viruses may contaminate hands, instruments, other surfaces and textiles. The list is not exhaustive.

Coronavirus
Filoviridae
Flavivirus
Hepatitis B virus (HBV)
Hepatitis C virus (HCV)
Hepatitis delta virus (HDV)
Herpesviridae
Human Immunodeficiency virus (HIV)
Human T Cell Leukemia Virus (HTLV)
Influenza virus
Measles virus
Paramyxoviridae
Poxviridae
Rabies Virus
Rubella Virus