Evans Vanodine International
GLOBAL HYGIENE SOLUTIONS

MICROBIOLOGICAL PROFILE

Supa-Max™

Ready-to-use chlorhexidine gluconate and lactic acid teat disinfectant

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Evans Vanodine International plc

SUPA-MAX MICROBIOLOGICAL PROFILE

INTRODUCTION

SUPA-MAX is a ready-to-use chlorhexidine gluconate and lactic acid teat disinfectant.

SUPA-MAX is bactericidal and yeasticidal.

SUPA-MAX can be used for both pre and post milking.

SUPA-MAX has a highly visible dark blue colour

SUPA-MAX is recommended for use as part of a Dairy Hygiene Programme.

Effective aid in the control of mastitis in dairy herds		**Can be used as a liquid or as a foam**
Skin conditioning and pH balancing emollient blend	**Reduces the risk of infection**	**Softens the skin to reduce cracks and crevices where bacteria may multiply**

SUPA-MAX - EFFICACY SUMMARY

SUPA-MAX 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 yeast.

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

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.

SUPA-MAX MICROBIOLOGICAL PROFILE

ACTIVITY AGAINST BACTERIA

BACTERIAL TEST PROFILE				
ORGANISMS	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
Escherichia coli	EN 1656	30	5	Post milking
Staphylococcus aureus				
Streptococcus uberis				
Escherichia coli		30	1	Pre milking
Staphylococcus aureus				
Streptococcus uberis				
Escherichia coli	EN 16437*	30	30 seconds	Pre milking
Staphylococcus aureus				
Escherichia coli			5	Post milking
Staphylococcus aureus				

*Modified see page 4

ACTIVITY AGAINST YEAST

YEAST TEST PROFILE				
ORGANISMS	TEST METHOD	TEMP (°C)	CONTACT TIME (MINUTES)	SOILING LEVEL
Candida albicans	EN 1657	30	1	Pre milking

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.

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

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

The interfering substances used in EN test methods are described as low or high level soiling for disinfectants and as pre and post milking for teat disinfectants in the veterinary test methods. They simulate levels of soiling encountered in practical, real-life situations.

EN TEST METHODS

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 16437	For bactericidal activity. Modified to use Vitro skin carriers.	Surface	Bacteria	Pre milking ≥3 log reduction Post milking ≥4 log reduction

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 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%