

# TNO TEST

## EU NORM TEST SUMMARY

### FREEBAC TESTED AGAINST SILVER-PEROXIDE

#### Introduction

Suspension tests have been carried out to examine the disinfection capability of a sample of Freebac® (the Freebac tested contained 33% peroxide) and a sample of silver-peroxide (from a well know silver- peroxide producer) containing 50% peroxide.

#### Method

The product is put in contact with suspension of a micro-organism and organic pollution (clean = 0.03% BSA, dirty = 0.3% BSA). After a certain contact time a part of the mixture is neutralised, whereupon the number of surviving micro-organisms is determined. This allows to determine the inactivating effect (bactericide, fungicide) of a disinfectant under controlled circumstances. The requirement for EU norms is an inactivation of the yeasts and moulds by  $\geq 4$  (4D) and bacteria by  $\geq 5$  (5D).

#### Results

The results of the tests are described in tables C, D, E en F.

**Table C** Results of disinfection with FREEBAC on *Enterococcus hirae* (initial 7,8 log)

Product concentration	Contact time (minutes)	Egg white pollution	Count (dilution: cfu)	log N (test mixture)	log reduction
5%	5	clean	0: 3	1.5	6.3
5%	5	dirty	0: 3	1.5	6.3
7%	5	dirty	0: 27	2.4	5.3
10%	5	dirty	0: 0	< 1	> 6.8

Comment: Fulfills the test requirement

**Table D** Results of disinfection with SILVER-PEROXIDE on *Enterococcus hirae* (initial 7,8 log)

Product concentration	Contact time (minutes)	Egg white pollution	Count (dilution: cfu)	log N (test mixture)	log reduction
5%	5	clean	-2: > 300	> 5.5	< 2
5%	5	dirty	-2: > 300	> 5.5	< 2
7%	5	dirty	-2: > 300	> 5.5	< 2
10%	5	dirty	-2: > 300	> 5.5	< 2

Comment: **DOES NOT** fulfill the test requirement

**Table E Results of disinfection with FREEBAC on *Candida albicans* (initial 7,0 log)**

Product concentration	Contact time (minutes)	Egg white pollution	Count (dilution: cfu)	log N (test mixture)	log reduction
20%	5	clean	0: 0	< 1	> 6
20%	5	dirty	0: 0	< 1	> 6
20%	15	clean	0: 0	< 1	> 6
20%	15	dirty	0: 0	< 1	> 6

Comment: Fulfills the test requirement

**Table F Results of disinfection with SILVER-PEROXIDE on *Candida albicans* (initial 7,0 log)**

Product concentration	Contact time (minutes)	Egg white pollution	Count (dilution: cfu)	log N (test mixture)	log reduction
20%	5	clean	-2: > 300	> 5.5	< 1.5
20%	5	dirty	-2: > 300	> 5.5	< 1.5
20%	15	clean	-2: 58	4.8	2.2
20%	15	dirty	-2: 74	4.9	2.1

Comment: **DOES NOT** fulfill the test requirement

**Conclusion:**

From the results it can be concluded, that according to the Draft European Standard tested here above, the antibacterial activity of **FREEBAC** tested met the efficacy requirement against *Enterococcus hirae* at a concentration of 5%, 7% and 10% in both clean and dirty circumstances. Against *Candida albicans* it meets the requirements of the Draft European Standard tested here above in both clean and dirty circumstances.

The **SILVER-PEROXIDE** tested did not meet the Draft European Standard tested here above under any concentration, time or clean/dirty circumstances