



Colep Laupheim GmbH & Co. KG
Neue Welt 37
88471 Laupheim

Expert Report

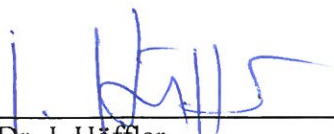
Fungicidal efficacy of the Disinfectant ECAS Anolyte

After examination of the fungicidal efficacy in the quantitative suspension test, test according to EN 1275 (status: March 2006) in the period from 2011-07-29 to 2011-08-08 (test product: ECAS Anolyte, batch number: 260711001) the efficacy (reduction ≥ 4 lg) on the test organisms *Candida albicans* ATCC 10231 and *Aspergillus niger* ATCC 16404 can be confirmed.

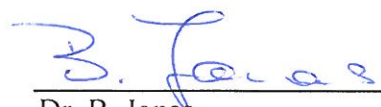
The effectiveness of the disinfectant
ECAS Anolyte
was proved to be sufficiently effective
within 15 minutes.

Technische Mikrobiologie
Dr. Jutta Höffler GmbH

Hamburg, 2011-08-08



Dr. J. Höffler
Head of laboratory



Dr. B. Jonas
Certified biologist

The test results correspond to the tested object only.



Test report
EN 1275, fungicidal activity
(obligatory conditions)

Customer

Colep Laupheim GmbH & Co. KG
Neue Welt 37
88471 Laupheim

Test laboratory

Technische Mikrobiologie
Dr. Jutta Höffler GmbH
Ahrensburger Straße 162
22045 Hamburg

Disinfectant sample

Name of the product..... **ECAS Analyte**
Batch number..... 260711001
Manufacturer..... Colep Laupheim GmbH & Co. KG
Neue Welt 37
88471 Laupheim
Date of delivery..... 2011-07-28
Laboratory number..... 28.07.11-2001
Storage conditions..... cool
Appearance of the product..... colorless, clear
Active substance(s) in 100g product..... 250 ppm hypochlorite
Diluent recommended by manufacturer..... water

Test method and its validation

Test period..... 2011-07-29 to 2011-08-08
Data..... see "test results" (enclosed)

The test results correspond to the tested object only.

Experimental conditions

Diluent used for product test solutions.....	distilled water
Product test concentration.....	for <i>Candida albicans</i> ATCC 10231 10.0, 40.0, and 80.0 % (v/v) for <i>Aspergillus niger</i> ATCC 16404 10.0, 60.0, 70.0, and 80.0 % (v/v)
Test organisms.....	<i>Candida albicans</i> ATCC10231 <i>Aspergillus niger</i> ATCC 16404
Temperature of incubation.....	30 °C ± 1 °C

Test conditions

Test temperature.....	20 °C ± 1 °C
Contact time(s).....	15 minutes

Special remarks

All tests and validations were between the basic limits.

The product shows at least at one concentration a reduction of 4 lg.

The product shows at least at one concentration a reduction less than 4 lg.

There was no precipitation during the test (the test suspensions were homogeneous).

Test results

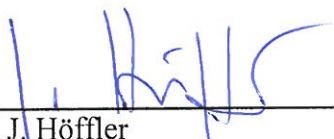
see enclosed sheets (pages 5 - 6)

Conclusion


According to EN 1275 (status: March 2006) the product
ECAS Anolyte (Chargennummer: 260711001)
possesses fungicidal efficacy (reduction ≥ 4 lg) at **60.0 % (v/v)**
at 20 °C after a contact time of 15 minutes
for the above mentioned test organisms.

Technische Mikrobiologie
Dr. Jutta Höffler GmbH

Hamburg, 2011-08-08



Dr. J. Höffler
Head of laboratory



Dr. B. Jonas
Certified biologist

Test results (fungicidal suspension test)

EN 1275 Name of the product: **ECAS Anolyte** Batch number: 260711001
 (phase 1) Laboratory number: 28.07.11-2001

Remarks: none

Diluent for product test solutions: distilled water

Appearance of the product dilutions: colourless, clear

Dilution-neutralisation-method: Pour plate technique: Spread plate technique: Number of plates: 1/ml

Neutralizer: Polysorbate 80 (30 g/l) + saponin (30 g/l) + lecithin (3 g/l) + histidine (1 g/l) + sodiumthiosulphate (5 g/l) + ethersulphate (10 g/l) in diluent

Test temperature: **20 °C ± 1 °C** Interfering substance(s): **none**

Test organisms: **Candida albicans ATCC 10321** Temperature of incubation: **30 °C ± 1 °C**

Date of test: 2011-07-29

Responsible person: Dr. B. Jonas

Signature: 

Validations and controls

Validation suspension (N _{v0})			Experimental conditions control (A)			Neutralizer toxicity control (B)			Dilution-neutralization control (C) Product conc.: 800 ml/l		
Vc1	84	$\bar{x} =$	Vc1	82	$\bar{x} =$	Vc1	82	$\bar{x} =$	Vc1	84	$\bar{x} =$
Vc2	87	85.5	Vc2	80	81	Vc2	86	84	Vc2	90	87
30 ≤ \bar{x} of N _{v0} ≤ 160 ? meets requirements: yes			\bar{x} of A is ≥ 0.5 × \bar{x} N _{v0} ? meets requirements: yes			\bar{x} of B is ≥ 0.5 × \bar{x} N _{v0} ? meets requirements: yes			\bar{x} of C is ≥ 0.5 × \bar{x} N _{v0} ? meets requirements: yes		

Test suspension and test

Test suspension (N and N ₀)	N	Vc1	Vc2	$\bar{x}_{wm} = 4.45E+07 = \lg N = 7.65$
	10 ⁻⁵	>330	>330	N ₀ = N/10 $\lg N_0 = 6.65$
	10 ⁻⁶	43	46	6.17 ≤ $\lg N_0$ ≤ 6.70 meets requirements: yes

product concentration (%)	Vc1	Vc2	N _a = \bar{x} × 10	lgN _a	lgR	Contact time (min)
10.0	>330	>330	>3300	>3.52	<3.13	15
40.0	0	0	<140	<2.15	>4.50	15
80.0	0	0	<140	<2.15	>4.50	15

Explanations:

Vc = counting per ml (one plate or more)

\bar{x} = mean of Vc1 and Vc2 (1st and 2nd double determination)

\bar{x}_{wm} = weighted mean of Vc1 and Vc2

lgR = logarithmic reduction (lgR = lgN₀ - lgN_a)

Test results (fungicidal suspension test)

EN 1275 Name of the product: **ECAS Anolyte** Batch number: 260711001

(phase 1) Laboratory number: 28.07.11-2001

Remarks: none

Diluent for product test solutions: distilled water

Appearance of the product dilutions: colourless, clear

Dilution-neutralisation-method: Pour plate technique: Spread plate technique: Number of plates: 1/ml

Neutralizer: Polysorbate 80 (30 g/l) + saponin (30 g/l) + lecithin (3 g/l) + histidine (1 g/l) + sodiumthiosulphate (5 g/l) + ethersulphate (10 g/l) in diluent

Test temperature: **20 °C ± 1 °C** Interfering substance(s): **none**Test organisms: **Aspergillus niger ATCC 16404** Temperature of incubation: **30 °C ± 1 °C**

Date of test: 2011-07-29

Responsible person: Dr. B. Jonas

Signature: 

Validations and controls

Validation suspension (N _{v0})			Experimental conditions control (A)			Neutralizer toxicity control (B)			Dilution-neutralization control (C) Product conc.: 800 ml/l		
Vc1	96	$\bar{X} =$	Vc1	80	$\bar{X} =$	Vc1	76	$\bar{X} =$	Vc1	84	$\bar{X} =$
Vc2	88	92	Vc2	68	74	Vc2	72	74	Vc2	62	73
30 ≤ \bar{X} of N _{v0} ≤ 160 ? meets requirements: yes			\bar{X} of A is ≥ 0.5 × \bar{X} N _{v0} ? meets requirements: yes			\bar{X} of B is ≥ 0.5 × \bar{X} N _{v0} ? meets requirements: yes			\bar{X} of C is ≥ 0.5 × \bar{X} N _{v0} ? meets requirements: yes		

Test suspension and test

Test suspension (N and N ₀)	N	Vc1	Vc2	$\bar{X}_{wm} =$	$1.55E+07 = \lg N =$	7.19
	10 ⁻⁵	83/79	76/70	N ₀ = N/10	$\lg N_0 =$	6.19
	10 ⁻⁶	16	18	6.17 ≤ $\lg N_0$ ≤ 6.70 meets requirements: yes		

product concentration (%)	Vc1	Vc2	Na = $\bar{X} \times 10$	lgNa	lgR	Contact time (min)
10.00	>165	>165	>1650	>3.22	< 2.97	15
60.00	14	8	<140	<2.15	> 4.04	15
70.00	2	0	<140	<2.15	> 4.04	15
80.00	0	0	<140	<2.15	> 4.04	15

Explanations:

Vc = counting per ml (one plate or more)

 \bar{X}_{wm} = weighted mean of Vc1 and Vc2 \bar{X} = mean of Vc1 and Vc2 (1st and 2nd double determination)lgR = logarithmic reduction (lgR = lgN₀ - lgNa)