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ROPIMEX R. OPEL GmbH
Bildstocker Straße 12
DE - 66538 Neunkirchen

Hamburg, 27 January 2022

Expert opinion

Yeasticidal Activity of **Bacoban WBUS** in the quantitative suspension test according to DIN EN 1657:2016 (Phase 2, Step 1)

The disinfectant **Bacoban WBUS** was tested and evaluated according to DIN EN 1657:2016 "Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in veterinary area - Test method and requirements (phase 2, step 1)".

According to the test report no. L21/01041.7 dated 27/01/2022 of Dr. Brill + Partner GmbH the preparation showed yeast-icidal activity under clean conditions at a test temperature of $10^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

Bacoban WBUS complies with the requirements of DIN EN 1657:2016 (phase 2, step 1) with the following concentration-time relationship:

Yeasticidal: clean conditions 0.5 % 30 minutes



Dr. Florian H. H. Brill



Test report no L21/01041.7

Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of **Bacoban WBUS** in veterinary area according to DIN EN 1657:2016 (Phase 2, step 1)*

In accordance with your order, we tested the preparation **Bacoban WBUS** for its activity in the quantitative suspension test according to DIN EN 1657:2016* under clean conditions.

1 General Information and Material

1.1 Client

Client: ROPIMEX R. OPEL GmbH, Mrs Jennifer Sahl, Bildstocker Straße 12,
DE - 66538 Neunkirchen, Germany
Date of order: 23/12/2021
Confirmation no.: 226415

1.2 Identification of Test Laboratory

Location: Dr. Brill + Partner GmbH · Institute for Hygiene and Microbiology,
Stiegstück 34, DE-22339 Hamburg, Germany
Study manager: Dipl.-Ing. Dr. rer. nat. Andreas Kampe
Scientific assistant: Dipl.-Biol. Henrik Gabriel
Laboratory technicians: Elahe Saroukhani

1.3 Table of Contents

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1.4 Identification of Sample

Name of product: **Bacoban WBUS**
Batch no.: 20210920_Bacoban WBUS_imi

* Test procedure accredited according to DIN EN ISO/IEC 17025. Test report issued by Dr. Brill + Partner GmbH, Stiegstück 34, DE - 22339 Hamburg, Phone +49 40 557631-0, Telefax +49 40 557631-11, www.brillhygiene.com. No copying or transmission, in whole or in part, of this test report without the explicit prior written permission. The test results exclusively apply to the tested samples. Information on measurement uncertainty and Version history on request. © Dr. Brill + Partner GmbH 2022



Internal no.:	21/01202
Manufacturer:	ROPIMEX R. OPEL GmbH, DE - 66538 Neunkirchen, Germany
Date of delivery:	21/09/2021
Storage conditions:	room temperature and darkness
Appearance of product:	clear liquid
Odour:	characteristic
Product type:	surface disinfectant
Recommended diluent:	Tap water
Diluent used:	water of standardised hardness (WSH, pH 7.0)
pH value, concentrate:	4.3
pH value, 1.0 % (measured in WSH):	6.2
pH value, 0.5 % (measured in WSH):	6.5
pH value, 0.1 % (measured in WSH):	7.0
Active agents (Manufacturer's data):	33.31 g benzalkoniumchloride

1.5 Test Conditions

Test period:	13/01/ - 17/01/2022
Lab task no.:	L21/01041.7
Product test concentrations:	0.1 + 0.5 + 1.0 %
Exposure time:	30 minutes
Test temperature:	10°C ± 1°C
Incubation temperature:	30°C ± 1°C
Organic load:	clean conditions (3.0 g/L bovine albumin)
Neutraliser:	60 g/L polysorbate 80, 60 g/L saponine, 8 g/L lecithin, 1 g/L cysteine, 2.5 g/L SDS (TLSC-SDS)
Test organisms:	<i>Candida albicans</i> ATCC 10231

2 Methods

The tests were carried out according to DIN EN 1657:2016 "Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in veterinary area - Test method and requirements (phase 2, step 1)".

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3 Results

The test results based on DIN EN 1657: 2016 are summarised in tables 1 and 2.

The test yeast was sufficiently (RF >4) inactivated with the following concentration-time relationship:

Yeasticidal: clean conditions 0.5 % 30 minutes

Hamburg, 27/01/2022


i-v. feuchel

Dipl.-Ing. Dr. rer. nat. Andreas Kampe
Study Manager

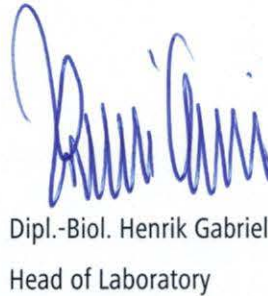

Dipl.-Biol. Henrik Gabriel
Head of Laboratory





Table 1: Validation, Controls and Evaluation

Product name: **Bacoban WBUS**
Test organism: *Candida albicans*
Organic load: clean conditions
Contact time: **30 minutes**

Batch: 20210920_Bacoban
WBUS_imi
Temperature: 10°C ± 1°C
Neutraliser: TLSC-SDS

Suspension for Validation (N_{v0})			Control of test conditions (A)									
			n.t.		30 minutes				n.t.			
	Microbial count	\bar{x}		Microbial count	\bar{x}		Microbial count	\bar{x}		Microbial count	\bar{x}	
V_{c1}	31	34,5	V_{c1}			V_{c1}	29		31	V_{c1}		
V_{c2}	38		V_{c2}			V_{c2}	33			V_{c2}		
$30 \leq \bar{x} \text{ of } N_{v0} \leq 160$		Yes	$\bar{x} \text{ of } A(15')$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?			$\bar{x} \text{ of } A(30')$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?			Ja	$\bar{x} \text{ of } A(')$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?		
Control of neutralizer (B)			Validation (C) of method at highest product concentration: 1,00 %									
			n.t.		30 minutes				n.t.			
	Microbial count	\bar{x}		Microbial count	\bar{x}		Microbial count	\bar{x}		Microbial count	\bar{x}	
V_{c1}	28	31,5	V_{c1}			V_{c1}	24		28,5	V_{c1}		
V_{c2}	35		V_{c2}			V_{c2}	33			V_{c2}		
$\bar{x} \text{ of } B$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?		Yes	$\bar{x} \text{ of } C(15')$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?			$\bar{x} \text{ of } C(30')$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?			Ja	$\bar{x} \text{ of } C(')$ is $\geq 0,5 \times \bar{x} \text{ of } N_{v0}$?		
Test suspension (N and N_0)	N	Microbial count of plates				V_{c1}	V_{c2}	$\bar{x}_{wm} / \lg N$	$N_0 = N/10; \lg N_0$	$6,17 \leq N_0 \leq 6,70$?		
	1,00E-05	>330		>330		>660	>660	2,00E+07	6,30	Yes		
	1,00E-06	17		23		17	23	7,30				
Product concentration [%]	Exposure time [min]	Microbial count of plates				V_{c1}	V_{c2}	$N_a = \bar{x} \times 10$	$\lg N_a$	$\lg R$ ($\lg N_0 = 6,30$)		
	0,10	30	>330		>330		>330	>330	>3300	>3,52	$\leq 2,78$	
	0,50	30	0		0		<14	<14	<140	<2,15	$\geq 4,15$	
	1,00	30	0		0		<14	<14	<140	<2,15	$\geq 4,15$	

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4 List of Abbreviations

A	=	control of test conditions
B	=	control of neutraliser
C	=	validation of method at highest product concentration
N	=	test suspension
N _{vo}	=	suspension for validation
n.t.	=	not tested
N ₀	=	microbial count of test suspension N / 10 (microbial count at time index 0)
R	=	germ reduction in log ₁₀ -steps
V _c	=	viable microbial count per ml
\bar{x}	=	weighted mean of N

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