

SGS INSTITUT FRESENIUS GmbH · Postfach 1261 · 65220 Taunusstein

ROPIMEX R. Opel GmbH
Mrs Jennifer Sahl
Bildstocker Str. 12
66538 Neunkirchen

Sample: 200679058
Order: 5434588
Client: 10089634



Anna-Magdalena Eigenbrodt

Tel. +49 6128 744-566
Fax: +49 6128 744 201

anna-magdalena.eigenbrodt@sgs.com

Consumer and Retail
Cosmetics, Personal Care & Household

SGS INSTITUT FRESENIUS GmbH
Im Maisel 14
65232 Taunusstein

Taunusstein, 23.10.2020

Report 5434588-06

Quantitative suspension test of bactericidal activity according to EN 1276:2019

Sample entry: 09.07.2020

Sample designation: Bacoban WB
LOT: 2005159

Active substance: 26.0 g benzalkonium chloride
2.5 g sodium pyrithione

Sample storage: Room temperature

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Page 2 of 4
 EN 1276

Test conditions:

EN 1276: Chemical disinfectant and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas – Test method and requirements (phase 2, step 1) – EN 1276:2019

Test organisms: *Escherichia coli* ATCC 10536
Enterococcus hirae ATCC 10541
Staphylococcus aureus ATCC 6538
Pseudomonas aeruginosa ATCC 15442

Test suspension: 1.5 – 5.0 x 10⁸ cfu/mL

Contact time: 5 min

Temperature: 20 °C

Product concentration: 1%
 0.5 %
 0.05%

Protein contamination: dirty (0.3% albumin)

Test method: Dilution-Neutralization-Method

Neutralization: 3% Polysorbate 80, 0.3% Lecithin, 0.1% Histidine,
 0.5% Na-thiosulfate, 3% Saponin

Incubation: Caso agar plates for 48 h at 36 ± 1 °C

Test period: 31.08.2020 – 03.09.2020

Requirement: 5-log (99.999%) reduction of bacteria

Client: 10089634
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 Sample: 200679058

Page 3 of 4

EN 1276

Table 1: Test results using pour plate method based on DIN EN 1276 (Sample number 200679058)

Test organism	Validation			Process validation	Bacteria test suspension	Contact time: 5 min, Protein load: dirty			
	Bacteria suspension	Experimental conditions	Control of neutralization				1 %	0.5 %	0.05 %
<i>Escherichia coli</i> (ATCC 10536)	V _c (10 ⁻¹): 84/80 V _c (10 ⁻²): 9/9 N _v : 8.20 x 10 ³	V _c : 75/76 A = 76	V _c : 84/106 B = 95	V _c : 85/76 C = 81	10 ⁻⁶ : 244/200 10 ⁻⁷ : 31/28 N: 2.59 x 10 ⁸	V _c (10 ⁰): V _c (10 ⁻¹): V _c (10 ⁻²): N _a : R: R (log):	0/0 0/0 0/0 <140 >2.11 x 10 ⁵ >5.32	0/0 0/0 0/0 <140 >2.11 x 10 ⁵ >5.32	10/5 1/1 0/0 <140 >2.11 x 10 ⁵ >5.32
<i>Enterococcus hirae</i> (ATCC 10541)	V _c (10 ⁻¹): 120/102 V _c (10 ⁻²): 12/13 N _v : 1.11 x 10 ³	V _c : 134/121 A = 128	V _c : 160/120 B = 140	V _c : 134/116 C = 125	10 ⁻⁶ : >330/>330 10 ⁻⁷ : 40/44 N: 4.20 x 10 ⁸	V _c (10 ⁰): V _c (10 ⁻¹): V _c (10 ⁻²): N _a : R: R (log):	0/0 0/0 0/0 <140 >3.00 x 10 ⁵ >5.48	0/0 0/0 0/0 <140 >3.00 x 10 ⁵ >5.48	42/32 3/4 0/0 3.70 x 10 ² 1.14 x 10 ⁵ 5.06
<i>Staphylococcus aureus</i> (ATCC 6538)	V _c (10 ⁻¹): 94/96 V _c (10 ⁻²): 10/7 N _v : 9.50 x 10 ²	V _c : 94/96 A = 95	V _c : 91/103 B = 97	V _c : 88/85 C = 87	10 ⁻⁶ : >330/>330 10 ⁻⁷ : 34/39 N: 3.65 x 10 ⁸	V _c (10 ⁰): V _c (10 ⁻¹): V _c (10 ⁻²): N _a : R: R (log):	0/0 0/0 0/0 <140 >2.61 x 10 ⁵ >5.42	1/0 0/0 0/0 <140 >2.61 x 10 ⁵ >5.42	>330/>330 39/21 2/3 3.00 x 10 ³ 1.22 x 10 ⁴ 4.09
<i>Pseudomonas aeruginosa</i> (ATCC 15442)	V _c (10 ⁻¹): 63/49 V _c (10 ⁻²): 10/9 N _v : 5.60 x 10 ²	V _c : 48/50 A = 49	V _c : 58/74 B = 66	V _c : 53/41 C = 47	10 ⁻⁶ : 196/208 10 ⁻⁷ : 26/21 N: 2.19 x 10 ⁸	V _c (10 ⁰): V _c (10 ⁻¹): V _c (10 ⁻²): N _a : R: R (log):	0/0 0/0 0/0 <140 >1.56 x 10 ⁵ >5.19	0/0 0/0 0/0 <140 >1.56 x 10 ⁵ >5.19	>330/>330 >330/>330 >330/>330 >3.30 x 10 ⁵ <6.64 x 10 ¹ <1.82
V _c Viable bacterial count (colony forming units = cfu)		N _v cfu per ml bacteria suspension							
N cfu per ml bacteria test suspension		A cfu per ml (WSH control)							
R Reduction of bacterial count		B cfu per ml (method control)							
N _a cfu per ml test mixture		C cfu per ml (process validation)							

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Page 4 of 4
 EN 1276

Evaluation:

The results show that the product **Bacoban WB** meets the required bactericidal activity according to standard EN 1276 since a reduction of 5 log was achieved for all tested microorganisms under following conditions:

≥ 0.5 % product concentration – 5 min – dirty conditions

SGS INSTITUT FRESENIUS GmbH



i. V. Sebastian Vogel
 GROUP LEADER BIOSERVICE



i. A. Anna-Magdalena Eigenbrodt
 CUSTOMER SERVICE CONSULTANT

The test results refer exclusively to the examined test items and the date of the test under the test specifications.
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