Test Report: EN 1656:2019

Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in the veterinary area – Test method and requirements (phase 2, step 1)

Identification of the test laboratory: Abbott Analytical Ltd
Unit 2, Hickmans Road, Birkenhead, CH41 1JH, Great Britain

Identification of the client: Safe Solutions (Safe4) Ltd
Wharton Green, Bostock Road, Winsford, CW7 3BD, Great Britain

Identification of the sample: 24K/055

Name of the product:	Safe4 Disinfectant Concentrate
Batch number/reference and expiry date (if available):	0053
Date of delivery:	30 October 2024
Storage conditions:	Room temperature in darkness
Product diluent recommended by the manufacturer for use:	Not disclosed
Active substance(s) and their concentrations (s) (optional):	Not disclosed
Appearance of the product:	Clear colourless liquid

Notes:

1) The test results in this report relate only to the sample(s) tested.
2) This test report may not be reproduced except in full, adapted, altered or used to create a derivative work, without written approval from Abbott Analytical Ltd.
3) Re-issue of report SSL.24K055.VPa2, dated 18 November 2024.
Reason: Change of product name.

Test method and its validation:

Method:	Dilution-neutralisation
Neutraliser:	100.0 g/l Polysorbate 80 + 30.0 g/l Lecithin + 30.0 g/l Tryptone Soya Broth + 5.0 g/l Sodium thiosulphate + 1.0 g/l L-histidine (Neutraliser B)
Neutraliser validation:	Validated in accordance with EN 1656:2019 (5.5.2)

Experimental conditions:

Period of analysis:	15 November 2024 to 18 November 2024
Product test concentration(s):	1:10 (1 part product to 10 parts water), 1:50 (1 part product to 50 parts water) v/v
Diluent used for product test solution(s):	Hard water
Contact time(s):	30 min ± 10 s
Test temperature(s):	10°C ± 1°C
Interfering substance:	10.0 g/l bovine albumin + 10.0 g/l yeast extract (high-level soiling)
Temperature of incubation:	36°C ± 1°C
Identification of the bacterial strain(s) used:	*Pseudomonas aeruginosa* (DSM 939)

Deviations: None

Remarks:

1) All test conditions are as requested by the client, irrespective of whether these are in accordance with EN 1656:2019 (5.4.2) or EN 1656:2019 (5.5.1.1).

Requirements:

The product shall demonstrate at least a 5 decimal log (lg) reduction against every test organism.

Conclusion:

According to EN 1656:2019, this sample of Safe4 Disinfectant Concentrate possesses bactericidal activity against the referenced strain of *Pseudomonas aeruginosa* when tested at a concentration of 1:50 (1 part product to 50 parts water) with a contact time of 30 minutes at 10°C under high-level soiling.

Approved by:

Signed: 

Name: Tony Watson

Position: General Manager

Date: 12 December 2024

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A company registered in England and Wales
Company number: 10031406

Results: EN 1656:2019

RST 003 (Issue 6)

Test organism:	*Pseudomonas aeruginosa*		(DSM 939)
Date of test:	15 November 2024	Test temperature:	10°C ± 1°C
Interfering substance:	10.0 g/l bovine albumin + 10.0 g/l yeast extract		
Dilution-neutralisation method:	Pour plate	Number of plates:	1 / ml
Neutraliser:	B	Incubation temperature:	36°C ± 1°C

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutraliser or filtration control (B)			Method validation (C) Product conc.: *1:10*		
*Vc*1	*32*	$\overline{n}$ =	*Vc*1	*35*	$\overline{n}$ =	*Vc*1	*38*	$\overline{n}$ =	*Vc*1	*37*	$\overline{n}$ =
*Vc*2	*36*	34	*Vc*2	*35*	35	*Vc*2	*36*	37	*Vc*2	*34*	35.5
$30 \leq \overline{n}$ of $Nv_o \leq 160$?			$\overline{n}$ of $A \geq 0.5 \times \overline{n}$ of Nv_o ?			$\overline{n}$ of $B \geq 0.5 \times \overline{n}$ of Nv_o ?			$\overline{n}$ of $C \geq 0.5 \times \overline{n}$ of Nv_o ?		
☒ yes ☐ no			☒ yes ☐ no			☒ yes ☐ no			☒ yes ☐ no		

Test suspension (N and N_o):

N	*Vc*1	*Vc*2	$\overline{n}_{wm} = 1.53 \times 10^8$; $\lg N = 8.18$
10^{-6}	*154*	*152*	$N_o = N / 10$; $\lg N_o = 7.18$
10^{-7}	*15*	*15*	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no

Test:

Conc. of the product	Contact time	*Vc*1	*Vc*2	*Na* ($\overline{n} \times 10$)	lg *Na*	lg *R* (lg N_o - lg *Na*)
1:10	*30 min*	*0*	*0*	<140	<2.15	>5.03
1:50	*30 min*	*0*	*0*	<140	<2.15	>5.03

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Explanations:

Vc	count per ml (one plate or more)
$\overline{n}$	average of *Vc*1 and *Vc*2 (1 + 2 duplicate)
$\overline{n}_{wm}$	weighted mean of $\overline{n}$
N	number of cells per ml in the test suspension
N_o	number of cells in the test mixture at the beginning of the contact time ($N_o = N / 10$)
Na	number of survivors per ml in the test mixture at the end of the contact time (before neutralisation or filtration)
R	reduction ($\lg R = \lg N_o - \lg Na$)
Nv	number of cells per ml in the validation suspension
Nv_o	number of cells in the validation mixtures at the beginning of the contact time ($Nv_o = Nv / 10$)
A	number of survivors per ml in the experimental conditions control mixture
B	number of survivors per ml in the neutraliser or filtration control mixture
C	number of survivors per ml in the method validation mixture

All test results have an associated uncertainty of measurement, details of which are available on request.