Abbott Analytical

Consulting Scientists to the Disinfectant Industry

Test Report

Product name:	Safe4 Disinfectant Cleaner		
Batch or ref no:	Batch 1999, Best before 9/2/19		
Manufacturer or supplier:	Safe Solutions (Safe4) Ltd Wharton Green House, Bostock Road, Winsford, CW7 3BD		
Sample ref:	17D/007	**Date received:**	7 April 2017
Date tested:	5 May 2017	**Certificate date:**	11 May 2017
Certificate no:	17D.007IB.SSL	**Page:**	1 of 6
Analysis required:	EN 1276:2009, Chemical disinfectants 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)		
Storage conditions:	Room temperature in darkness		
Appearance of product (solution):	Dark green liquid		
Active substance(s) and their concentration(s):	Not disclosed		

Notes

The test results in this report relate only to the sample(s) tested.
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.

D C Watson BSc,CBiol,MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

A company registered in England and Wales
Company number 10031406

Experimental conditions

Concentration(s) of product tested:	1:50 & 1:100 v/v
Product diluent:	Sterile hard water (300mg/l $CaCO_3$)
Test organism(s):	*Pseudomonas aeruginosa* (DSM 939) *Escherichia coli* (NCTC 10418) *Staphylococcus aureus* (NCTC 10788) *Enterococcus hirae* (DSM 3320)
Contact time(s):	5 min ± 10s
Test temperature:	20°C ± 1°C
Test conditions:	Dirty
Interfering substance:	3.0g/l bovine albumin
Method:	Dilution-neutralisation
Neutralising solution:	30g/l Polysorbate 80 + 3g/l Lecithin + 1g/l L-histidine + 1g/l L-cysteine
Incubation temperature:	36°C ± 1°C

Conclusion

When tested at concentrations of 1:50 and 1:100 this sample of Safe4 Disinfectant Cleaner meets the requirements of EN 1276:2009 for bactericidal activity in 5 minutes at 20°C, under dirty conditions, against the referenced strains of *Pseudomonas aeruginosa*, *Escherichia coli*, *Staphylococcus aureus* and *Enterococcus hirae*.

D C Watson BSc,CBiol,MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

A company registered in England and Wales
Company number 10031406

Results: *Pseudomonas aeruginosa* (DSM 939)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	50	$\bar{x}$ =	$Vc1$	49	$\bar{x}$ =	$Vc1$	53	$\bar{x}$ =	$Vc1$	46	$\bar{x}$ =
$Vc2$	56	53	$Vc2$	53	51	$Vc2$	57	55	$Vc2$	44	45
$30 \leq \bar{x}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{x}\ (A) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (B) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (C) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{x}$(wm) = 2.19 x10^{8} ; lg N = 8.34
10^{-6}	220	219	$N_o = N/10$; lg N_o = 7.34
10^{-7}	22	21	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = 10.21 Between 5 and 15 ? ☒ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{x}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
1:50	5 min	0	2	< 140	< 2.15	> 5.19	PASS
1:100	5 min	4	2	< 140	< 2.15	> 5.19	PASS

D C Watson BSc,CBiol,MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

A company registered in England and Wales
Company number 10031406

Results: *Escherichia coli* (NCTC 10418)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	44	$\bar{x}$ =	$Vc1$	47	$\bar{x}$ =	$Vc1$	42	$\bar{x}$ =	$Vc1$	41	$\bar{x}$ =
$Vc2$	43	43.5	$Vc2$	44	45.5	$Vc2$	45	43.5	$Vc2$	37	39
$30 \leq \bar{x}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{x}\ (A) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (B) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (C) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{x}$(wm) = 2.53 x10^8 ; lg N = 8.40
10^{-6}	261	245	$N_o = N/10$; lg N_o = 7.40
10^{-7}	25	25	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = 10.12 Between 5 and 15 ? ☒ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{x}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
1:50	5 min	0	0	< 140	< 2.15	> 5.25	PASS
1:100	5 min	0	0	< 140	< 2.15	> 5.25	PASS

D C Watson BSc,CBiol,MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

A company registered in England and Wales
Company number 10031406

Results: *Staphylococcus aureus* (NCTC 10788)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	54	$\bar{x}$ =	$Vc1$	51	$\bar{x}$ =	$Vc1$	62	$\bar{x}$ =	$Vc1$	63	$\bar{x}$ =
$Vc2$	57	55.5	$Vc2$	55	53	$Vc2$	54	58	$Vc2$	49	56
$30 \leq \bar{x}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{x}\ (A) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (B) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no			$\bar{x}\ (C) \geq 0.5 \times \bar{x}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{x}$(wm) = 2.60 x10^{8} ; lg N = 8.41
10^{-6}	254	266	$N_o = N/10$; lg N_o = 7.41
10^{-7}	26	25	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = 10.20 Between 5 and 15 ? ☒ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{x}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
1:50	5 min	0	0	< 140	< 2.15	> 5.26	PASS
1:100	5 min	1	6	< 140	< 2.15	> 5.26	PASS

D C Watson BSc,CBiol,MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

A company registered in England and Wales
Company number 10031406

Results: *Enterococcus hirae* (DSM 3320)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
$Vc1$	40	$\bar{\kappa}$ =	$Vc1$	40	$\bar{\kappa}$ =	$Vc1$	43	$\bar{\kappa}$ =	$Vc1$	41	$\bar{\kappa}$ =
$Vc2$	37	38.5	$Vc2$	36	38	$Vc2$	40	41.5	$Vc2$	36	38.5
$30 \leq \bar{\kappa}\ (Nv_o) \leq 160$? ☒ yes ☐ no			$\bar{\kappa}\ (A) \geq 0.5 \times \bar{\kappa}\ (Nv_o)$? ☒ yes ☐ no			$\bar{\kappa}\ (B) \geq 0.5 \times \bar{\kappa}\ (Nv_o)$? ☒ yes ☐ no			$\bar{\kappa}\ (C) \geq 0.5 \times \bar{\kappa}\ (Nv_o)$? ☒ yes ☐ no		

Test suspension:
(N and N_o)

N	$Vc1$	$Vc2$	$\bar{\kappa}$(wm) = 2.09 x10^{8} ; lg N = 8.32
10^{-6}	219	199	$N_o = N/10$; lg N_o = 7.32
10^{-7}	23	19	$7.17 \leq \lg N_o \leq 7.70$? ☒ yes ☐ no
Control of weighted mean counts (N)			Quotient = 9.95 Between 5 and 15 ? ☒ yes ☐ no

Test:

Product test conc.	Contact time	$Vc1$	$Vc2$	Na = ($\bar{\kappa}$ x10)	lg Na =	lg R = (lg N_o − lg Na)	Status
1:50	5 min	0	0	< 140	< 2.15	> 5.17	PASS
1:100	5 min	0	0	< 140	< 2.15	> 5.17	PASS

D C Watson BSc,CBiol,MRSB

Abbott Analytical Limited
Unit 2, Hickmans Road,
Birkenhead, CH41 1JH, United Kingdom

Telephone: +44 (0)151 345 6753
email: enqs@abbottanalytical.co.uk
www.abbottanalytical.co.uk

Registered address: Kemp House, 160 City Road,
London, EC1V 2NX, United Kingdom

A company registered in England and Wales
Company number 10031406