



# Abbott Analytical



Consulting Scientists to the Disinfectant Industry

## Test Report

**Product name:** Safe4 Disinfectant Cleaner Concentrate

**Batch or ref no:**

**Manufacturer or supplier:** Safe Solutions (Safe4) Ltd  
Wharton Green House, Bostock Road, Winsford, CW7 3BD

**Sample ref:** 17L/021                      **Date received:** 9 November 2017

**Date tested:** 15 November 2017 & 27 November 2017      **Certificate date:** 29 November 2017

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**Analysis required:** EN 1656:2009, 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)

**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.

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## Experimental conditions

**Concentration(s) of product tested:** 1:50 v/v

**Product diluent:** Sterile hard water (300mg/l CaCO<sub>3</sub>)

**Test organism(s):** *Pseudomonas aeruginosa* (DSM 939)  
*Proteus vulgaris* (NCTC 4175)  
*Staphylococcus aureus* (NCTC 10788)  
*Enterococcus hirae* (DSM 3320)

**Contact time(s):** 30 min ± 10s

**Test temperature:** 10°C ± 1°C

**Test conditions:** High-level soiling

**Interfering substance:** 10g/l bovine albumin +  
10g/l yeast extract

**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 a concentration of 1:50 this sample of Safe4 Disinfectant Cleaner Concentrate meets the requirements of EN 1656:2009 for bactericidal activity in 30 minutes at 10°C, under high-level soiling conditions, against the referenced strains of *Pseudomonas aeruginosa*, *Proteus vulgaris*, *Staphylococcus aureus* and *Enterococcus hirae*.

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**Results: *Pseudomonas aeruginosa* (DSM 939)**

### Validation and controls:

Validation suspension ( $N_{v_o}$ )			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	61	$\bar{x} =$	Vc1	60	$\bar{x} =$	Vc1	63	$\bar{x} =$	Vc1	60	$\bar{x} =$
Vc2	63	62	Vc2	68	64	Vc2	67	65	Vc2	60	60
30 ≤ $\bar{x}$ ( $N_{v_o}$ ) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (A) ≥ 0.5 x $\bar{x}$ ( $N_{v_o}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (B) ≥ 0.5 x $\bar{x}$ ( $N_{v_o}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (C) ≥ 0.5 x $\bar{x}$ ( $N_{v_o}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

### Test suspension: ( $N$ and $N_o$ )

$N$	Vc1	Vc2	$\bar{x}$ (wm) = 4.60 x10 <sup>8</sup> ; lg $N$ = 8.66
10 <sup>-6</sup>	>330	>330	$N_o = N/10$ ; lg $N_o$ = 7.66
10 <sup>-7</sup>	47	45	7.17 ≤ lg $N_o$ ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts ( $N$ )			Quotient = N/A Between 5 and 15 ? <input type="checkbox"/> yes <input type="checkbox"/> no

### Test:

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ ( $\bar{x}$ x10)	lg $N_a =$	lg $R =$ (lg $N_o$ - lg $N_a$ )	Status
1:50	30 min	0	0	<140	<2.15	>5.51	PASS

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## Results: *Proteus vulgaris* (NCTC 4175)

### Validation and controls:

Validation suspension ( $N_{v_0}$ )			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	136	$\bar{x} =$	Vc1	127	$\bar{x} =$	Vc1	125	$\bar{x} =$	Vc1	127	$\bar{x} =$
Vc2	112	124	Vc2	122	124.5	Vc2	121	123	Vc2	124	125.5
30 ≤ $\bar{x}$ ( $N_{v_0}$ ) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (A) ≥ 0.5 x $\bar{x}$ ( $N_{v_0}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (B) ≥ 0.5 x $\bar{x}$ ( $N_{v_0}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (C) ≥ 0.5 x $\bar{x}$ ( $N_{v_0}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

### Test suspension: ( $N$ and $N_0$ )

$N$	Vc1	Vc2	$\bar{x}$ (wm) = 1.83 x10 <sup>8</sup> ; lg $N$ = 8.26
10 <sup>-6</sup>	176	192	$N_0 = N/10$ ; lg $N_0$ = 7.26
10 <sup>-7</sup>	12	17	7.17 ≤ lg $N_0$ ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts ( $N$ )			Quotient = 11.87 Between 5 and 15 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no

### Test:

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ ( $\bar{x}$ x10)	lg $N_a =$	lg $R =$ (lg $N_0$ - lg $N_a$ )	Status
1:50	30 min	0	0	< 140	< 2.15	> 5.11	PASS

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**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	91	$\bar{x} =$	Vc1	87	$\bar{x} =$	Vc1	90	$\bar{x} =$	Vc1	93	$\bar{x} =$
Vc2	93	92	Vc2	84	85.5	Vc2	87	88.5	Vc2	91	92
30 ≤ $\bar{x}$ ( $Nv_o$ ) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (A) ≥ 0.5 x $\bar{x}$ ( $Nv_o$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (B) ≥ 0.5 x $\bar{x}$ ( $Nv_o$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (C) ≥ 0.5 x $\bar{x}$ ( $Nv_o$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

**Test suspension:  
(N and  $N_o$ )**

N	Vc1	Vc2	$\bar{x}$ (wm) = 4.95 x10 <sup>8</sup> ; lg N = 8.69
10 <sup>-6</sup>	>330	>330	$N_o = N/10$ ; lg $N_o = 7.69$
10 <sup>-7</sup>	50	49	7.17 ≤ lg $N_o$ ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts (N)			Quotient = N/A Between 5 and 15 ? <input type="checkbox"/> yes <input type="checkbox"/> no

**Test:**

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ ( $\bar{x}$ x10)	lg $N_a =$	lg R = (lg $N_o$ - lg $N_a$ )	Status
1:50	30 min	0	0	<140	<2.15	>5.54	PASS

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**Results: *Enterococcus hirae* (DSM 3320)**

**Validation and controls:**

Validation suspension ( $N_{v_o}$ )			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	43	$\bar{x} =$	Vc1	42	$\bar{x} =$	Vc1	39	$\bar{x} =$	Vc1	41	$\bar{x} =$
Vc2	47	45	Vc2	40	41	Vc2	43	41	Vc2	43	42
30 ≤ $\bar{x}$ ( $N_{v_o}$ ) ≤ 160 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (A) ≥ 0.5 x $\bar{x}$ ( $N_{v_o}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (B) ≥ 0.5 x $\bar{x}$ ( $N_{v_o}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no			$\bar{x}$ (C) ≥ 0.5 x $\bar{x}$ ( $N_{v_o}$ )? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		

**Test suspension:  
(N and  $N_o$ )**

N	Vc1	Vc2	$\bar{x}$ (wm) = 2.17 x10 <sup>8</sup> ; lg N = 8.34
10 <sup>-6</sup>	217	218	$N_o = N/10$ ; lg $N_o = 7.34$
10 <sup>-7</sup>	21	22	7.17 ≤ lg $N_o$ ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts (N)			Quotient = 10.12 Between 5 and 15 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no

**Test:**

Product test conc.	Contact time	Vc1	Vc2	$N_a =$ ( $\bar{x}$ x10)	lg $N_a =$	lg R = (lg $N_o$ - lg $N_a$ )	Status
1:50	30 min	0	0	< 140	< 2.15	> 5.19	PASS

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