



Abbott Analytical



Consulting Scientists to the Disinfectant Industry

Certificate of Analysis

Sample(s): One sample of SK

Received from: Bio-Productions Ltd. 72 Victoria Road,
Victoria Industrial Estate, Burgess Hill, RH15 9LZ

Date received: 9 November 2011 **Date tested:** 11 November 2011

Certificate no: 11L.027B.BPL **Certificate date:** 11 November 2011

Sample ref: 11L/027 **Page:** 1 of 3

Analysis required: EN 1276, 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)

Product stored at: Room temperature

Active substance(s): Not declared

Test conditions: Dirty

Interfering substance: 3.0g/l bovine albumin

Product test concentration: 1:3 v/v & 1:5 v/v

Product diluent used during test: Sterile hard water 300mg/l CaCO₃

Contact time: 5 minutes

Test temperature: 20°C ± 0.5°C

Neutralising solution: 30g/l polysorbate 80, 3g/l lecithin,
1g/l histidine, 1g/l cysteine

Incubation temperature: 37°C ± 1°C

Identification of bacterial strain(s) used:

<i>Pseudomonas aeruginosa</i>	NCIMB 10421
<i>Escherichia coli</i>	NCTC 10418
<i>Staphylococcus aureus</i>	NCTC 10788
<i>Enterococcus hirae</i>	NCIMB 8192

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Page: 2 of 3

Test results: 1:3 v/v

Test Organism	<i>Pseudomonas aeruginosa</i>		<i>Escherichia coli</i>		<i>Staphylococcus aureus</i>		<i>Enterococcus hirae</i>	
Validation Suspension (N_v)	Vc1 163	Vc2 154	Vc1 147	Vc2 135	Vc1 157	Vc2 160	Vc1 129	Vc2 138
	$\bar{x} = 159$		$\bar{x} = 141$		$\bar{x} = 159$		$\bar{x} = 134$	
Experimental Control (A)	Vc1 124	Vc2 158	Vc1 112	Vc2 136	Vc1 134	Vc2 116	Vc1 104	Vc2 126
	$\bar{x} = 141 \geq 0.5N_{v0}$		$\bar{x} = 124 \geq 0.5N_{v0}$		$\bar{x} = 125 \geq 0.5N_{v0}$		$\bar{x} = 115 \geq 0.5N_{v0}$	
Neutraliser Control (B)	Vc1 118	Vc2 146	Vc1 105	Vc2 127	Vc1 120	Vc2 148	Vc1 132	Vc2 110
	$\bar{x} = 132 \geq 0.5N_{v0}$		$\bar{x} = 116 \geq 0.5N_{v0}$		$\bar{x} = 134 \geq 0.5N_{v0}$		$\bar{x} = 121 \geq 0.5N_{v0}$	
Method Validation (C)	Vc1 128	Vc2 150	Vc1 122	Vc2 110	Vc1 152	Vc2 110	Vc1 126	Vc2 104
	$\bar{x} = 139 \geq 0.5N_{v0}$		$\bar{x} = 116 \geq 0.5N_{v0}$		$\bar{x} = 131 \geq 0.5N_{v0}$		$\bar{x} = 115 \geq 0.5N_{v0}$	
Test Suspension	10^{-6} Vc1 >330	Vc2 312	Vc1 264	Vc2 244	Vc1 290	Vc2 326	Vc1 232	Vc2 288
	10^{-7} Vc1 30	Vc2 34	Vc1 28	Vc2 31	Vc1 32	Vc2 36	Vc1 28	Vc2 32
(N)	$\bar{w} = 3.13 \times 10^8$		$\bar{w} = 2.58 \times 10^8$		$\bar{w} = 3.11 \times 10^8$		$\bar{w} = 2.64 \times 10^8$	
(N₀ = 0.1N)	lg N = 8.50		lg N = 8.41		lg N = 8.49		lg N = 8.42	
	lg N ₀ = 7.50		lg N ₀ = 7.41		lg N ₀ = 7.49		lg N ₀ = 7.42	
Results	Vc1 0	Vc2 0	Vc1 0	Vc2 0	Vc1 0	Vc2 0	Vc1 0	Vc2 0
(Na)	10 \bar{x} < 140		10 \bar{x} < 140		10 \bar{x} < 140		10 \bar{x} < 140	
(R)	lg Na < 2.15		lg Na < 2.15		lg Na < 2.15		lg Na < 2.15	
	lg R > 5.35		lg R > 5.27		lg R > 5.35		lg R > 5.27	
Pass: lg R \geq 5	PASS		PASS		PASS		PASS	

Vc = plate count per ml

\bar{x} = average of Vc1 and Vc2

\bar{w} = weighted mean of \bar{x}

R = reduction (lg R = lg N₀ - lg Na)

Requirements & Conclusion:

This batch of SK, when diluted to 1:3 v/v, [passes the requirements of EN 1276 for bactericidal activity](#) in 5 minutes at 20°C under dirty conditions against all of the reference organisms detailed.

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Page: 3 of 3

Test results: 1:5 v/v

Test Organism	<i>Pseudomonas aeruginosa</i>		<i>Escherichia coli</i>		<i>Staphylococcus aureus</i>		<i>Enterococcus hirae</i>	
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	$\bar{x} = 159$		$\bar{x} = 141$		$\bar{x} = 159$		$\bar{x} = 134$	
Experimental Control (A)	Vc1 124	Vc2 158	Vc1 112	Vc2 136	Vc1 134	Vc2 116	Vc1 104	Vc2 126
	$\bar{x} = 141 \geq 0.5N_{v0}$		$\bar{x} = 124 \geq 0.5N_{v0}$		$\bar{x} = 125 \geq 0.5N_{v0}$		$\bar{x} = 115 \geq 0.5N_{v0}$	
Neutraliser Control (B)	Vc1 118	Vc2 146	Vc1 105	Vc2 127	Vc1 120	Vc2 148	Vc1 132	Vc2 110
	$\bar{x} = 132 \geq 0.5N_{v0}$		$\bar{x} = 116 \geq 0.5N_{v0}$		$\bar{x} = 134 \geq 0.5N_{v0}$		$\bar{x} = 121 \geq 0.5N_{v0}$	
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	10^{-7} Vc1 30	Vc2 34	Vc1 28	Vc2 31	Vc1 32	Vc2 36	Vc1 28	Vc2 32
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Results	Vc1 0	Vc2 0	Vc1 0	Vc2 0	Vc1 0	Vc2 0	Vc1 0	Vc2 0
(Na)	10 \bar{x} < 140		10 \bar{x} < 140		10 \bar{x} < 140		10 \bar{x} < 140	
	lg Na < 2.15		lg Na < 2.15		lg Na < 2.15		lg Na < 2.15	
(R)	lg R > 5.35		lg R > 5.27		lg R > 5.35		lg R > 5.27	
Pass: lg R \geq 5	PASS		PASS		PASS		PASS	

Vc = plate count per ml

\bar{x} = average of Vc1 and Vc2

\bar{w} = weighted mean of \bar{x}

R = reduction (lg R = lg N₀ - lg Na)

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