



Abbott Analytical

Consulting Scientists to the Disinfectant Industry



Certificate of Analysis

Sample(s) : One sample of XBD750

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

Date received: 11 August 2011 **Date tested:** 15 August 2011

Certificate no: 11H.030SB.BPL **Certificate date:** 17 August 2011

Sample ref: 11H/030 **Page:** 1 of 2

Analysis required: EN 13697, Chemical disinfectants and antiseptics -
Quantitative non-porous surface test for the evaluation of
bactericidal and/or fungicidal activity of chemical
disinfectants used in food, industrial, domestic and
institutional areas - Test method and requirements without
mechanical action (phase 2, step 2)

Product stored at: Room temperature

Active substance: Not declared

Test conditions: Dirty

Interfering substance: 3.0g/l bovine albumin

Product test concentration: Neat as received

Product diluent used during test: N/A

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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Test results:

Test Organism	<i>Pseudomonas aeruginosa</i>		<i>Escherichia coli</i>		<i>Staphylococcus aureus</i>		<i>Enterococcus hirae</i>	
Test Suspension	10 ⁻⁶	Vc1 264 Vc2 288	Vc1 180 Vc2 245	Vc1 328 Vc2 304	Vc1 184 Vc2 232			
	10 ⁻⁷	Vc1 38 Vc2 32	Vc1 34 Vc2 25	Vc1 25 Vc2 41	Vc1 27 Vc2 31			
(N)	N = 7.14		N = 7.03		N = 7.20		N = 7.02	
Toxicity Control (NC)	10 ⁻⁴	Vc1 232 Vc2 252	Vc1 204 Vc2 144	Vc1 276 Vc2 244	Vc1 168 Vc2 140			
		NC = 7.38 N - NC ≤ 2	NC = 7.24 N - NC ≤ 2	NC = 7.41 N - NC ≤ 2	NC = 7.19 N - NC ≤ 2			
Dilution Control (NT)	10 ⁻⁴	Vc1 208 Vc2 244	Vc1 216 Vc2 162	Vc1 300 Vc2 212	Vc1 172 Vc2 204			
		NT = 7.35 NC - NT ≤ ±0.3	NT = 7.28 NC - NT ≤ ±0.3	NT = 7.41 NC - NT ≤ ±0.3	NT = 7.27 NC - NT ≤ ±0.3			
Water Control (Nc)	10 ⁻⁴	Vc1 252 Vc2 230	Vc1 154 Vc2 168	Vc1 278 Vc2 254	Vc1 156 Vc2 172			
	10 ⁻⁵	Vc1 27 Vc2 28	Vc1 23 Vc2 28	Vc1 22 Vc2 27	Vc1 18 Vc2 23			
	Nc = 7.38		Nc = 7.21		Nc = 7.42		Nc = 7.21	
Results (Nd)	10 ⁰	Vc1 0 Vc2 0	Vc1 0 Vc2 0	Vc1 0 Vc2 0	Vc1 0 Vc2 0			
	10 ⁻¹	Vc1 0 Vc2 0	Vc1 0 Vc2 0	Vc1 0 Vc2 0	Vc1 0 Vc2 0			
(ME)	Nd < 0.70 ME > 6.68		Nd < 0.70 ME > 6.51		Nd < 0.70 ME > 6.72		Nd < 0.70 ME > 6.51	
Pass: ME ≥ 4	PASS		PASS		PASS		PASS	

N = lg of cfu/0.05ml of test suspension
Nd = lg of cfu/ml per test surface

Nc = lg of cfu/ml per control surface
ME = microbial effect (ME = Nc - Nd)

Requirements & Conclusion:

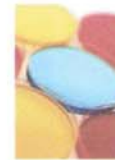
This batch of XBD750, when used neat, passes the requirements of EN 13697 for bactericidal activity in 5 minutes at 20°C under dirty conditions against all of the reference organisms detailed.

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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: Neat as received
(80% in test suspension)

Product diluent used during test: N/A

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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Test results:

Test Organism	<i>Pseudomonas aeruginosa</i>		<i>Escherichia coli</i>		<i>Staphylococcus aureus</i>		<i>Enterococcus hirae</i>	
Validation Suspension (N_v)	Vc1 128	Vc2 152	Vc1 90	Vc2 124	Vc1 152	Vc2 136	Vc1 86	Vc2 108
	$\bar{x} = 140$		$\bar{x} = 107$		$\bar{x} = 144$		$\bar{x} = 97$	
Experimental Control (A)	Vc1 130	Vc2 104	Vc1 84	Vc2 110	Vc1 142	Vc2 160	Vc1 78	Vc2 94
	$\bar{x} = 117 \geq 0.5N_{v0}$		$\bar{x} = 97 \geq 0.5N_{v0}$		$\bar{x} = 151 \geq 0.5N_{v0}$		$\bar{x} = 86 \geq 0.5N_{v0}$	
Neutraliser Control (B)	Vc1 116	Vc2 126	Vc1 102	Vc2 72	Vc1 138	Vc2 122	Vc1 84	Vc2 70
	$\bar{x} = 121 \geq 0.5N_{v0}$		$\bar{x} = 87 \geq 0.5N_{v0}$		$\bar{x} = 130 \geq 0.5N_{v0}$		$\bar{x} = 77 \geq 0.5N_{v0}$	
Method Validation (C)	Vc1 104	Vc2 122	Vc1 108	Vc2 81	Vc1 150	Vc2 106	Vc1 86	Vc2 102
	$\bar{x} = 113 \geq 0.5N_{v0}$		$\bar{x} = 95 \geq 0.5N_{v0}$		$\bar{x} = 128 \geq 0.5N_{v0}$		$\bar{x} = 94 \geq 0.5N_{v0}$	
Test Suspension	10 ⁻⁶ Vc1 264	Vc2 288	Vc1 180	Vc2 245	Vc1 328	Vc2 304	Vc1 184	Vc2 232
	10 ⁻⁷ Vc1 38	Vc2 32	Vc1 34	Vc2 25	Vc1 25	Vc2 41	Vc1 27	Vc2 31
(N)	$\bar{w} = 2.83 \times 10^8$		$\bar{w} = 2.20 \times 10^8$		$\bar{w} = 3.17 \times 10^8$		$\bar{w} = 2.15 \times 10^8$	
	lg N = 8.45		lg N = 8.34		lg N = 8.50		lg N = 8.33	
(N₀ = 0.1N)	lg N ₀ = 7.45		lg N ₀ = 7.34		lg N ₀ = 7.50		lg N ₀ = 7.33	
Results	Vc1 26	Vc2 20	Vc1 0	Vc2 0	Vc1 0	Vc2 0	Vc1 0	Vc2 0
(Na)	10 \bar{x} = 230		10 \bar{x} < 140		10 \bar{x} < 140		10 \bar{x} < 140	
	lg Na = 2.36		lg Na < 2.15		lg Na < 2.15		lg Na < 2.15	
(R)	lg R = 5.09		lg R > 5.20		lg R > 5.36		lg R > 5.19	
Pass: lg R ≥ 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 XBD750, when used neat, 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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