



Abbott Analytical



Consulting Scientists to the Disinfectant Industry

Certificate of Analysis

Product name: XBD750

Batch or ref no:

Manufacturer or supplier: Bio-Productions Ltd. 72 Victoria Road,
Victoria Industrial Estate, Burgess Hill, RH15 9LZ

Sample ref: 15D/043 **Date received:** 9 April 2015

Date tested: 13 April 2015 **Certificate date:** 15 April 2015

Certificate no: 15D.043IB-L3.BPL **Page:** 1 of 4

Analysis required: Adaptation of *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)* to show a greater than log 3 reduction

Storage conditions: Room temperature

Appearance of product (solution): Clear colourless liquid

Active substance(s) and their concentration(s): Not declared

Notes:

The test results in this report relate only to the sample(s) tested.
This test report may not be reproduced except in full, without written approval from Abbott Analytical.

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Experimental conditions:

Concentration(s) of product tested: Neat as received
(test concentration 80%)

Product diluent: N/A

Test organism(s): *Pseudomonas aeruginosa* (NCTC 13359)
Escherichia coli (NCTC 10418)
Staphylococcus aureus (NCTC 10788)
Enterococcus hirae (NCTC 13383)

Contact time(s): 30 seconds

Test temperature: 20°C ± 0.5°C

Test conditions: Dirty

Interfering substance: 3.0g/l bovine albumin

Neutralising solution: 30g/l Polysorbate 80 + 3g/l Lecithin +
1g/l L-histidine + 1g/l L-cysteine

Incubation temperature: 37°C ± 1°C

Remarks regarding the results:

This is a ready-to-use product but the actual concentration of the product during testing was 80% due to the constraints of the test method. This reduces the effectiveness of the test product, despite which it passed against all of the test organisms detailed above.

Conclusion:

At a test concentration of 80%, this sample of XBD750 obtains a greater than log 3 reduction (99.9% kill) in 30 seconds at 20°C under dirty conditions against *Pseudomonas aeruginosa* (NCTC 13359), *Escherichia coli* (NCTC 10418), *Staphylococcus aureus* (NCTC 10788) and *Enterococcus hirae* (NCTC 13383).

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Results: Pseudomonas aeruginosa (NCTC 13359)

Validation and controls:

Validation suspension (Nv_o)			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	100	$\bar{x} =$	Vc1	66	$\bar{x} =$	Vc1	108	$\bar{x} =$	Vc1	92	$\bar{x} =$
Vc2	125	112.5	Vc2	102	84	Vc2	74	91	Vc2	85	88.5
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 = 2.69 x10 ⁸ ; lg N = 8.43
10 ⁻⁶	278	239	$N_o = N/10$; lg $N_o = 7.43$
10 ⁻⁷	37	38	7.17 ≤ lg N_o ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts			Quotient = 6.89 Between 5 and 15 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no

Test:

Product test conc.	Contact time	Diln. step	Vc1	Vc2	lg Na = lg (\bar{x} wm x10)	lg R (lg $N_o = 7.43$)	% kill
80%	30 secs	10 ⁰	0	0	< 2.15	> 5.28	99.999
		10 ⁻¹	0	0			

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	124	$\bar{x} =$	Vc1	100	$\bar{x} =$	Vc1	100	$\bar{x} =$	Vc1	80	$\bar{x} =$
Vc2	140	132	Vc2	80	90	Vc2	94	97	Vc2	94	87
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 = 2.13 x10 ⁸ ; lg N = 8.33
10 ⁻⁶	200	224	$N_o = N/10$; lg $N_o = 7.33$
10 ⁻⁷	18	27	7.17 ≤ lg N_o ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Control of weighted mean counts			Quotient = 9.42 Between 5 and 15 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no

Test:

Product test conc.	Contact time	Diln. step	Vc1	Vc2	lg Na = lg (\bar{x} wm x10)	lg R (lg $N_o = 7.33$)	% kill
80%	30 secs	10 ⁰	0	0	< 2.15	> 5.18	99.999
		10 ⁻¹	0	0			

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Results: Staphylococcus aureus (NCTC 10788)

Validation and controls:

Validation suspension (N_{v_0})			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	150	$\bar{x} =$	Vc1	100	$\bar{x} =$	Vc1	140	$\bar{x} =$	Vc1	112	$\bar{x} =$
Vc2	138	144	Vc2	132	116	Vc2	135	137.5	Vc2	126	119
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} $w_m = 3.35 \times 10^8$; lg N = 8.53	
10^{-6}	320	>330	$N_0 = N/10$; lg $N_0 = 7.53$	
10^{-7}	35	47	7.17 ≤ lg N_0 ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
Control of weighted mean counts			Quotient = 7.93 Between 5 and 15 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	

Test:

Product test conc.	Contact time	Diln. step	Vc1	Vc2	lg Na = lg (\bar{x} w_m x10)	lg R (lg $N_0 = 7.53$)	% kill
80%	30 secs	10^0	0	0	< 2.15	> 5.38	99.999
		10^{-1}	0	0			

Results: Enterococcus hirae (NCTC 13383)

Validation and controls:

Validation suspension (N_{v_0})			Experimental conditions control (A)			Neutralizer or filtration control (B)			Method validation (C)		
Vc1	63	$\bar{x} =$	Vc1	60	$\bar{x} =$	Vc1	82	$\bar{x} =$	Vc1	64	$\bar{x} =$
Vc2	96	79.5	Vc2	74	67	Vc2	64	73	Vc2	48	56
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} $w_m = 1.76 \times 10^8$; lg N = 8.25	
10^{-6}	188	162	$N_0 = N/10$; lg $N_0 = 7.25$	
10^{-7}	20	17	7.17 ≤ lg N_0 ≤ 7.70 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
Control of weighted mean counts			Quotient = 9.46 Between 5 and 15 ? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	

Test:

Product test conc.	Contact time	Diln. step	Vc1	Vc2	lg Na = lg (\bar{x} w_m x10)	lg R (lg $N_0 = 7.25$)	% kill
80%	30 secs	10^0	0	0	< 2.15	> 5.10	99.999
		10^{-1}	0	0			

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