



## Certificate of Analysis

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<b>Client:</b>	Zeta Group Limited	<b>Lab No:</b>	2328056	SPV1
<b>Contact:</b>	Sjan Partington C/- Zeta Group Limited 47 Aintree Avenue Mangare Auckland 2022	<b>Date Received:</b>	24-Feb-2020	
		<b>Date Reported:</b>	05-Mar-2020	
		<b>Quote No:</b>	104013	
		<b>Order No:</b>		
		<b>Client Reference:</b>	AOAC 960 Challenge Testing	
		<b>Submitted By:</b>	Sjan Partington	

### Sample Type: Food and Biologicals

<b>Sample Name:</b>	DDQBL 21-Feb-2020				
<b>Lab Number:</b>	2328056.1				
Disinfectant/Sanitizer Efficacy Testing	See attached report	-	-	-	-

### Analyst's Comments

Appendix No.1 - Challenge testing re Job 2328056

## Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

### Sample Type: Food and Biologicals

Test	Method Description	Default Detection Limit	Sample No
Disinfectant/Sanitizer Efficacy Testing	Analysed at Hill Laboratories - Microbiology; 101C Waterloo Road, Christchurch. Based on AOAC 960.09 Germicidal and Detergent Sanitizing Action of Disinfectants.	-	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Dates of testing are available on request. Please contact the laboratory for more information.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

Jill Martin BSc Grad Dip LT  
Laboratory Technician - Microbiology



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## Surface Sanitiser Efficacy Trial

Emma Swadel  
Hill Laboratories

The method employed to carry out this testing was based on AOAC Official Method 960.09 (Germicidal and Detergent Sanitizing Action of Disinfectants).

The neutraliser buffer used was DE Neutralising Broth.

The organisms used were:

- *Escherichia coli*
- *Salmonella* Menston
- *Listeria monocytogenes*
- *Staphylococcus aureus*
- *Pseudomonas aeruginosa*
- *Candida albicans*
- *Aspergillus brasiliensis*

Numeric counts were performed after 1 minute contact time.

The product tested was:

- Sample: DDQBL

A numeric count of the inoculant solutions was carried out before any contact times to ascertain the theoretical level of organism inoculated into each sample.

Data is shown in Table 1:

Organism	cfu per mL of inoculum	Theoretical cfu per mL/g of Product
<i>Escherichia coli</i>	8,300,000,000	83,000,000
<i>Staphylococcus aureus</i>	3,100,000,000	31,000,000
<i>Pseudomonas aeruginosa</i>	17,000,000,000	170,000,000
<i>Salmonella</i> Menston	16,000,000,000	160,000,000
<i>Listeria monocytogenes</i>	8,100,000,000	81,000,000
<i>Candida albicans</i>	290,000,000	2,900,000
<i>Aspergillus brasiliensis</i>	30,000,000	300,000



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Numbers Controls were performed against the challenge organisms in water.  
**Data is shown in Table 2:**

Organism	cfu per mL of Control water	LOG <sub>10</sub>
<i>Escherichia coli</i>	87,000,000	7.94
<i>Staphylococcus aureus</i>	41,000,000	7.61
<i>Pseudomonas aeruginosa</i>	190,000,000	8.28
<i>Salmonella</i> Menston	160,000,000	8.20
<i>Listeria monocytogenes</i>	65,000,000	7.81
<i>Candida albicans</i>	2,700,000	6.43
<i>Aspergillus brasiliensis</i>	160,000	5.20

Table 3: Results of the trial using **DDQBL** with 1 minute contact time

Organism	Count after contact (CFU/ml)	LOG <sub>10</sub>	LOG <sub>10</sub> decrease	% Decrease
<i>Escherichia coli</i>	<100	<2	>5.94	>99.999
<i>Staphylococcus aureus</i>	570,000	5.76	1.85	98
<i>Pseudomonas aeruginosa</i>	<100	<2	>6.28	>99.999
<i>Salmonella</i> Menston	<100	<2	>6.20	>99.999
<i>Listeria monocytogenes</i>	<100	<2	>5.81	>99.999
<i>Candida albicans</i>	200,000	5.30	1.13	92
<i>Aspergillus brasiliensis</i>	7,500	3.88	1.32	95