

## Antimicrobial testing of Cordgienic Antibacterial Cord.

### 1. Background

Cordgienic Antibacterial Cord has been produced as an emergency pull cord with Bactiglas masterbatch as an antimicrobial additive to fight hand infections.

They have produced a sample of cord as below, with the addition of 2% Bactiglas AM 93456.

The sample was labelled AM 68 but was relabelled BV1 and submitted blind to an independent test house for antibacterial testing against *S. aureus* and *E. coli*. (Report attached below).

### 2. Sample Identification.



### 3. Method

For the determination of antimicrobial efficacy, the sample were challenged with a live *S. aureus* inoculum (NBRC 12732) and a live *E coli* inoculum (NBRC 3972). These were incubated for 24 hours according to the test method JIS Z 2801 (ISO 22196). The inocula were then washed off and the viable counts determined.

To obtain a positive result against this demanding test specification a minimum of a log 2 ( $\geq 99\%$ ) reduction from all the control inoculums must be achieved.

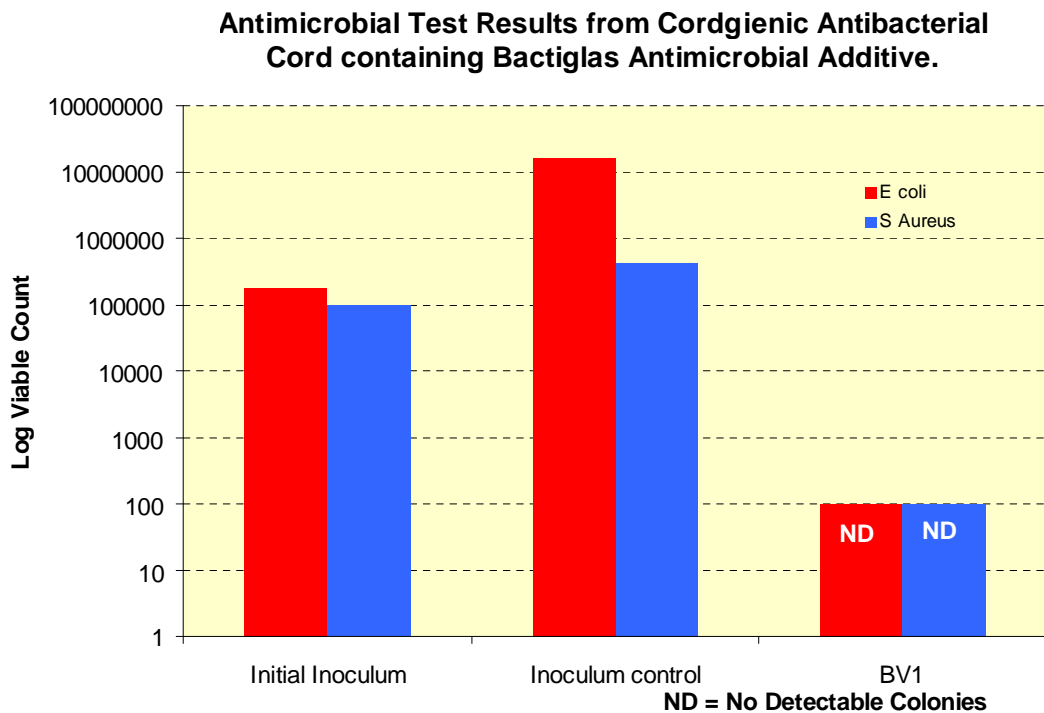
## 4. Results

### 4.1. Table of results.

Sample description	Bacterial Challenge		%		Log	
	E coli	S Aureus	E coli	S aureus	E coli	S aureus
AM 93456						
Initial Inoculum	$1.8 \times 10^5$	$1.0 \times 10^5$	-	-	-	-
Inoculum control	$1.6 \times 10^7$	$4.3 \times 10^5$	-	-	-	-
BV1 (AM68)	$<1 \times 10^2$ (ND)	$<1 \times 10^2$ (ND)	$>99.9994$	$>99.9770$	$>5.2$	$>3.6$

ND – No Detectable Bacterial Colonies

### 4.2. Graphical interpretation of results



## 6. Discussion of Antibacterial results

The inoculum controls both showed growths from their initial Colony Forming Unit (CFU) concentrations, thus demonstrating the viability of the inoculums.

To pass the very demanding ISO 22196 (JIS Z 2801) specification the sample must show a reduction of at least log 2 ( $\geq 99\%$ ) when compared with the inoculum control.

Sample BV1 (AM68) demonstrated an excellent antimicrobial effect against both bacterial challenges, more than sufficient to pass the ISO 22196 test specification.



## 6. Discussion of Antibacterial results (continued)

In fact both of the bacterial challenges gave results quoted as <100 (ND). This is due to the dilution factors used in the viable count method and in fact no viable colonies were detected on the test plates.

This is indicative of an extremely strong bactericidal effect.

## 7. Conclusions

1. Sample BV1 (AM68) demonstrated an excellent antimicrobial effect against both challenges – the gram positive S aureus and the gram negative E coli - and readily passed the demanding ISO 22196 (JIS Z 2801) specification.

2. No detectable bacterial colonies were found which is indicative of a very strong bactericidal effect.

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Product : Cordgienic Antibacterial Cord

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## REPORT ON ANTI-MICROBIAL TEST RESULT

### 1. Sample: PVC tubing

No.	Sample
1.	BV1

### 2. Outline of test:

The test was executed in according with "JIS Z 2801."

<Bacteria used for test>

*Escherichia coli* NBRC 3972

*Staphylococcus aureus* NBRC 12732

### 3. Test result:

Table 1: Test result of Anti-microbial effect against *Escherichia coli*

Sample	Number of living bacteria		Antimicrobial activity value against control
	At beginning	Alter 24 hours	
1. BV1	$1.8 \times 10^5$	$<1 \times 10^2$	>5.2
Control (Film only)	$1.8 \times 10^5$	$1.6 \times 10^7$	----

Table 2. Test result of Anti-microbial effect against *Staphylococcus aureus*

Sample	Number of living bacteria		Antimicrobial activity value against control
	At beginning	Alter 24 hours	
1. BV1	$1.0 \times 10^5$	$<1 \times 10^2$	>3.6
Control (Film only)	$1.0 \times 10^5$	$4.3 \times 10^5$	----

### 4. Consideration:

Sample 1 showed antimicrobial efficacy.

  
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