

# ANTIMICROBIAL TEST LABORATORIES

## Microbiology Study Report NG4702

Page 1 of 3

© Antimicrobial Test Laboratories, LLC 2013

### Client Information

Company Name:	<u>Chemco Technologies</u>	Sponsor(s):	<u>Lloyd Starks</u>
Sponsor's Phone:	<u>(706) 529-9696</u>	E-mail(s):	<u>ls@chemcotech.com</u>

### Test Information

Test(s) Performed:	<u>Modified JIS Z 2801-- lower contact time</u>		
SOP Followed:	<u>Testing Facility Operation 018.0</u>	Performed by:	<u>D. Sowersby</u>

### Sample Information

Test Substance ID(s):	<u>Aged 1:21 Proprietary Solution – 4 months and 8 days in ambient laboratory conditions</u>		
Sample(s) Received:	<u>02 MAY 2013</u>		

### Parameters

Microorganism(s):	<u><i>S. aureus</i> ATCC 33592 (MRSA)</u>	# of Replicates:	<u>2 per test</u>
Subculture Number:	<u>1</u>	Test Carriers:	<u>4.8 cm 100% cotton swatches</u>
Growth Medium:	<u>Trypticase Soy Broth (TSB)</u>		<u>1" x 3" glass slides</u>
Culture Age:	<u>~ 20 hrs.</u>	Target Inoculum:	<u>1.0 x 10<sup>5</sup> CFU/Carrier</u>
Neutralizer:	<u>D/E Broth (10ml)</u>	Inoculation Volume:	<u>50 µl</u>
Incubation Time:	<u>~ 24 hrs. @ 36.0 ± 1°C</u>	Plating medium:	<u>Trypticase Soy Agar (TSA)</u>
Exposure Time:	<u>10 min.</u>	Exposure Temp.	<u>Ambient ~25°C</u>

### Controls

Neutralized:	<u>N/A (previously validated)</u>	Growth Control:	<u>N/A</u>
Media Sterility:	<u>N/A</u>		

### Test Results

Test(s) Valid?:	<u>Yes</u>
-----------------	------------

**Notes:** 1 part of the submitted proprietary solution was mixed thoroughly with 21 parts RO water. This solution was poured into a commercial steam cleaning device which was then turned on and allowed to equilibrate for ~ 15 minutes. Steam was applied to cotton and glass surfaces for 5 seconds at approximately a 90° angle and 8 inches from each surface to create the test carriers. Carriers were then aged for 4 months and 8 days in ambient laboratory conditions. An aliquot of an overnight culture was added to 10 ml sterile RO water to create the test inoculum. Dry carriers were inoculated with 50 µl of the inoculum for a target of ~1.0 x 10<sup>5</sup> CFU/Carrier. Inoculated treated and untreated carriers were incubated for 10 minutes at room temperature. Upon reaching each contact time, carriers were harvested in 10 mL D/E neutralization broth and enumerated using conventional dilution plating techniques. CFU reductions were calculated using cell titer data for the control carriers after the contact time.

Tests Completed:	<u>21 NOV 2013</u>	Report Sent:	<u>26 NOV 2013</u>
------------------	--------------------	--------------	--------------------

# ANTIMICROBIAL TEST LABORATORIES

Page 2 of 3

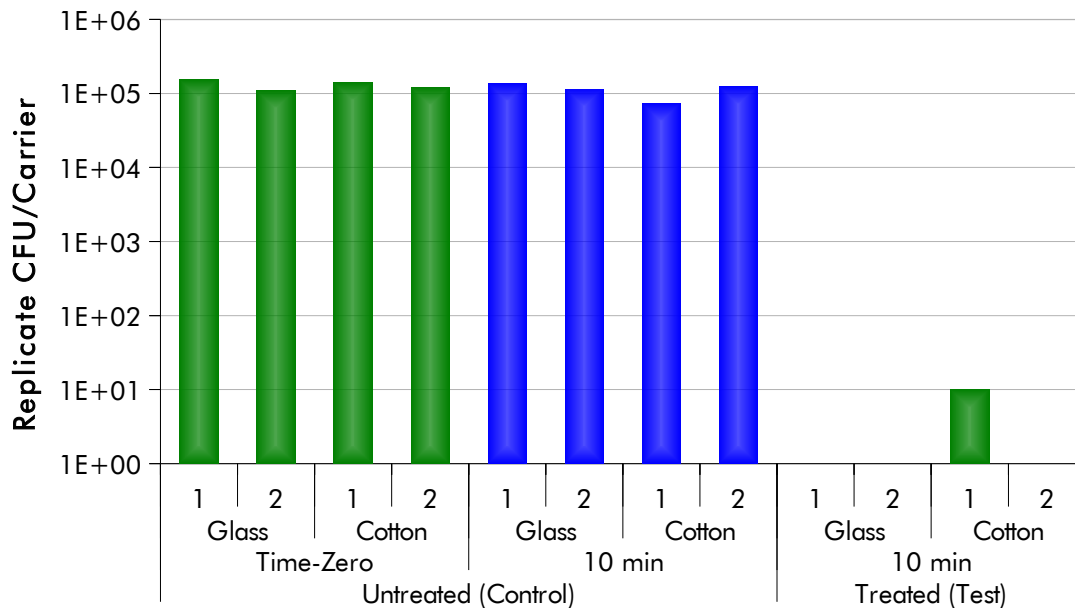
© Antimicrobial Test Laboratories, LLC 2013

## Results

*Note: S.aureus ATCC 33592 (MRSA) Samples below aged for 4 months*

Sample	Contact Time	Surface Type	Replicate	CFU/Carrier	Average CFU/Carrier	Log <sub>10</sub> Reduction	Percent Reduction
Untreated (Control)	Time-Zero	Glass	1	1.55E+05	1.33E+05	N/A	
			2	1.10E+05			
		Cotton	1	1.40E+05	1.30E+05		
			2	1.20E+05			
	10 min	Glass	1	1.35E+05	1.25E+05		
			2	1.15E+05			
		Cotton	1	7.30E+04	9.90E+04		
			2	1.25E+05			
Treated (Test)	10 min	Glass	1	<5.00E+00	<5.00E+00	>4.40	>99.996%
			2	<5.00E+00			
		Cotton	1	1.00E+01	<7.50E+00	>4.12	>99.992%
			2	<5.00E+00			

*Note: Blue text represents data used in final CFU reduction calculations.*



*Note: Samples below the limit of detection for the assay (5 CFU) are represented as 0 in the chart above.*

# ANTIMICROBIAL TEST LABORATORIES

Page 3 of 3

© Antimicrobial Test Laboratories, LLC 2013

## Additional Information

### Calculations

Method of Calculation of Antimicrobial Activity:

Log Reduction =  $\text{Log}(B/C)$ , where:

B = Initial number of viable cells on the control samples.

C = Number of viable cells on treated samples after contact time.

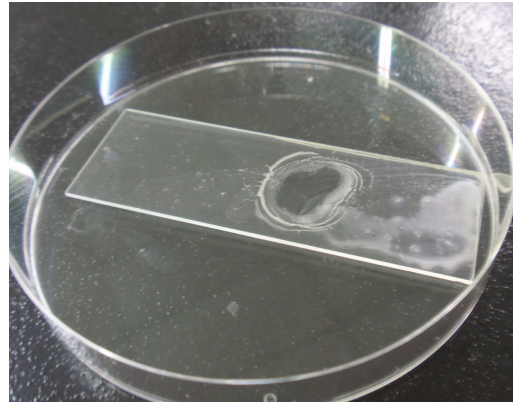
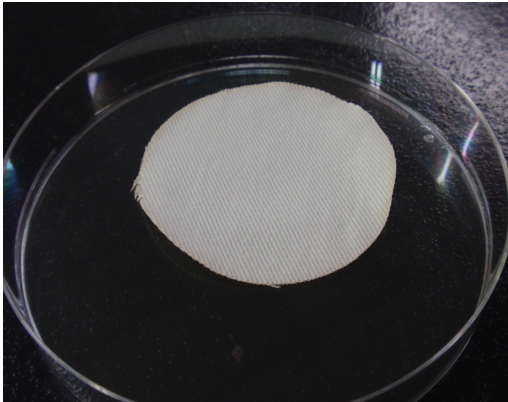
Method of Calculation of Percent Reduction:

Percent Reduction =  $(B-C/B) \times 100$ , where:

B = Initial number of viable cells on the control samples.

C = Number of viable cells on treated samples after contact time.

### Study Photos



example of aged treated cotton and glass carriers used in the study