Microbiology Study Report NG4702

Client Information

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

Test Information

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

Sample Information

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

Parameters

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

Controls

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

Test Results

Test(s) Valid?:	Yes

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 10^5 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:	21 NOV 2013	**Report Sent:**	26 NOV 2013

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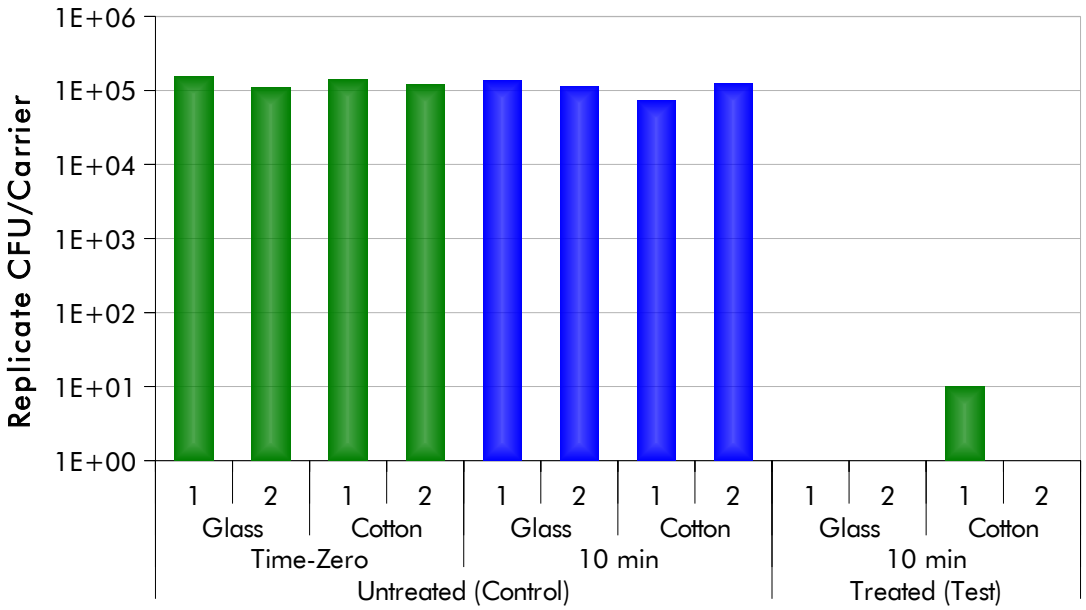
Results

Sample	Contact Time	Surface Type	Replicate	CFU/Carrier	Average CFU/Carrier	Log_{10} 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.

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Additional Information

Calculations

Method of Calculation of Antimicrobial Activity:

Log Reduction = Log (B/C), where:

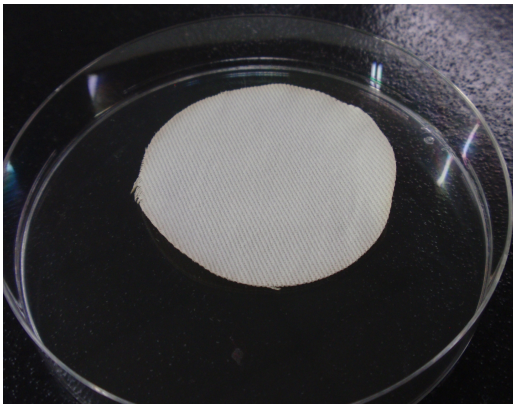
B = Initial number of viable cells on the control samples.
C = Number of viable cells on treated samples after contact time.

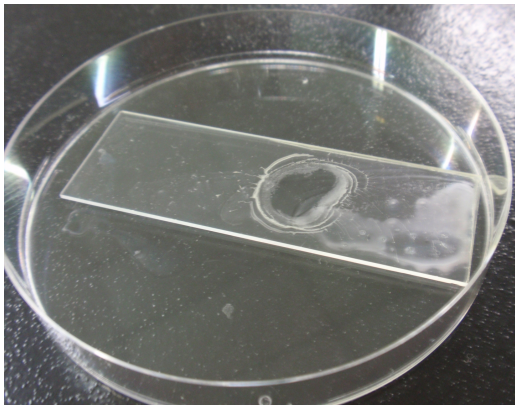
Method of Calculation of Percent Reduction:

Percent Reduction = (B-C/B) x 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

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