

**STUDY TITLE**

Determining Antimicrobial Activity of Immobilized Antimicrobial Agents (Modified ASTM E2149)

**SPONSOR**

Pat Eddy  
MicrobeCare  
11491 78th Avenue  
Allendale, MI 49401

**TEST ARTICLE NAME**

1200 Cleaning Cycles of Hospital Disinfectant

**TEST ARTICLE IDENTIFICATION**

Acetal, ABS, Nylon

**TEST ARTICLE PHYSICAL DESCRIPTION**

Plastic Coupons

**TEST ARTICLE RECEIVED**

July 21, 2011

**RESULTS**

Test Article Identification	Organism Count (CFU/mL)		Percent Reduction
	Zero Time	4 Hour	
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – EF	9.55 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – EF	8.95 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – EF	8.90 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – EF	8.25 x 10 <sup>5</sup>	1.45 x 10 <sup>6</sup>	No Reduction
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – MRSA	3.55 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – MRSA	3.35 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – MRSA	4.15 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – MRSA	3.35 x 10 <sup>5</sup>	5.30 x 10 <sup>5</sup>	No Reduction
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – EC	4.85 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – EC	4.80 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – EC	4.45 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – EC	4.65 x 10 <sup>5</sup>	2.46 x 10 <sup>6</sup>	No Reduction
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – CA	3.85 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – CA	3.70 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – CA	3.55 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – CA	3.90 x 10 <sup>5</sup>	5.35 x 10 <sup>5</sup>	No Reduction
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – PA	3.05 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – PA	3.30 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – PA	3.35 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – PA	3.25 x 10 <sup>5</sup>	6.30 x 10 <sup>5</sup>	No Reduction
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – KP	1.78 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – KP	1.77 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – KP	1.89 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – KP	1.76 x 10 <sup>5</sup>	6.25 x 10 <sup>5</sup>	No Reduction



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REPORT

PEOPLE > SCIENCE > SOLUTIONS

Test Facility  
9 Morgan  
Irvine, CA 92618  
949.951.3110

Test Article Identification	Organism Count (CFU/mL)		Percent Reduction
	Zero Time	4 Hour	
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – EA	4.90 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – EA	4.95 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – EA	5.65 x 10 <sup>5</sup>	1.15 x 10 <sup>2</sup>	99.98
Control – EA	4.70 x 10 <sup>5</sup>	2.64 x 10 <sup>6</sup>	No Reduction
1200 Cleaning Cycles of Hospital Disinfectant / Acetal – AB	4.25 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / ABS – AB	3.00 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
1200 Cleaning Cycles of Hospital Disinfectant / Nylon – AB	3.50 x 10 <sup>5</sup>	< 1.00 x 10 <sup>1</sup>	> 99.99
Control – AB	4.50 x 10 <sup>5</sup>	5.55 x 10 <sup>5</sup>	No Reduction

**TEST INFORMATION**

Date Testing Initiated: 07-25-11      Date Testing Terminated: 08-01-11

Sample Size: Approximately 3.7 x 1.5 inches \*

Target Inoculum Level: (1.5 - 3.0) x 10<sup>5</sup> CFU/mL

Organisms:

<i>Enterococcus faecalis</i>	Source No.: 51575
<i>Staphylococcus aureus</i> (MRSA)	Source No.: 33591
<i>Escherichia coli</i>	Source No.: 8739
<i>Candida albicans</i>	Source No.: 10231
<i>Pseudomonas aeruginosa</i>	Source No.: 9027
<i>Klebsiella pneumoniae</i>	Source No.: 4352
<i>Enterobacter aerogenes</i>	Source No.: 13048
<i>Acinetobacter Baumannii</i>	Source No.: 19606

Reduction, % (CFU/mL) = [(B-A)/B] \* 100

Where: A = CFU per mL for the flask containing the treated substrate after the specified contact time.

B = "0" contact time CFU per mL for the flask used to determine "A" before the addition of the treated substrate.

\* A surface area of 1.5"x3.7" was cut from the samples submitted for testing per sponsor instruction.

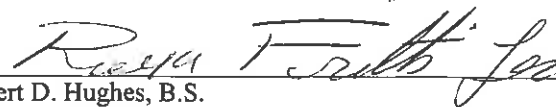
Data was rounded to the nearest tenth digit on the result sheet, but the calculations for percent reduction were done with the unrounded figures.

**COMMENT**

Organisms were derived from ATCC® organisms, or organisms determined to be equivalent. ATCC is a registered trademark of American Type Culture Collection.

**REFERENCE**

American Society for Testing and Materials (ASTM) E 2149: Standard Test Method for Determining the Antimicrobial Activity of Immobilized Antimicrobial Agents Under Dynamic Contact Conditions (2010).

APPROVAL  8/8/2011  
 Robert D. Hughes, B.S.      Date  
 Manager, Microbiology

Results apply only to the test article tested. Any extrapolation of these data to other articles is the sponsor's responsibility. All procedures were conducted in conformance with good manufacturing practices, certified to ISO 13485:2003 and accredited to ISO 17025:2005.