



Biomaster

Antimicrobial Technology

Antimicrobial Test Report

Study report: Determination of the Antimicrobial Activity of Samples Treated with Antimicrobial Agents against *Escherichia coli* and *Staphylococcus aureus*.

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Study report - ROSCHEA NAMENSSCHILDER GMBH

Summary of Study

To determine the efficacy of Biomaster Antimicrobial Technology, **ROSCHEA NAMENSSCHILDER GMBH** submitted Name Badge **samples** containing 2% APF SAN HM AT 673

Test Method: ISO 22196:2011

Laboratory: Industrial Microbiological Services Ltd.

Certificate No. 1039408.22/13716



Staphylococcus aureus is a Gram-positive coccal bacterium that is a member of the Firmicutes,. It is frequently found in the human respiratory tract and on the skin.

Summary of Procedure

Samples were tested to ISO 22196:2011. This method is a quantitative test designed to assess the performance of antimicrobial properties on hard, non-porous surfaces.

Submitted samples are challenged against stock cultures of S.aureas and E.coli purchased from ATCC.

Samples are inoculated using a known amount of the above cultures and incubated for 24 hours at 37°C according to ISO 22196:2011. TVC (Total Viable Count) of bacteria are then recorded and the percentage of reduction is calculated.

All testing is carried out independently at Industrial Microbiological Services Ltd.



Escherichia coli is a Gram-negative, facultatively anaerobic, rod-shaped bacterium of the genus Escherichia. It is commonly found in the lower intestine of warm-blooded organisms.

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Test results

The table below shows the results recored by Industrial Microbiological Services Ltd using the ISO 22196:2011 standard.

Description	Species	Contact time		Reduction	
		0hrs	24hrs	log 10	%
POLYPROPYLENE (CONTROL)	E. coli	1.2E+04	2.8E+05		
LG-ABS HI121H UN0002 BIOMASTER PROTECTED, 120 320	E.coli	1.2E+04	LOD	≥ 3.02	≥ 99.91%
LG-ABS TR558A TRANSPARENT BIOMASTER PROTECTED, 110 320)	E.coli	1.2E+04	LOD	≥ 3.02	≥ 99.91%
TERLURAN GP-22 NATURAL BIOMASTER PROTECTED, 100 320	E.coli	1.2E+04	LOD	≥ 3.02	≥ 99.91%
POLYPROPYLENE (CONTROL)	S.aureus	1.1E+04	9.1E+03		
LG-ABS HI121H UN0002 BIOMASTER PROTECTED, 120 320	S.aureus	1.1E+04	LOD	≥ 3.00	≥ 99.90%
LG-ABS TR558A TRANSPARENT BIOMASTER PROTECTED, 110 320)	S.aureus	1.1E+04	LOD	≥ 3.00	≥ 99.90%
TERLURAN GP-22 NATURAL BIOMASTER PROTECTED, 100 320	S.aureus	1.1E+04	LOD	≥ 3.00	≥ 99.90%

DESCRIPTION:	DESCRIPTION OF THE TEST SAMPLE.
0HRS:	CFU CM⁻² OF BACTERIA AT 0 HOURS OF TESTING.
24HRS:	CFU CM⁻² OF BACTERIA AT 24 HOURS OF TESTING.
LOD:	LIMIT OF DETECTION = <11.11 CFUs.
CFU CM⁻²:	COLONY FORMING UNITS PER CM².
REDUCTION:	LEVEL OF REDUCTION IN BACTERIA COMPARED TO CONTROL SAMPLE.

Log Reduction	Number of CFUs	% Reduction
0	1, 000, 000	0
1	100, 000	90
2	10, 000	99
3	1, 000	99.9
4	100	99.99
5	10	99.999



Conclusion

From the results it was seen that when incorporating APF SAN HM AT 673 into NAME BADGES excellent results were achieved and antimicrobial testing passed.

The samples provides are Biomaster approved, it is the customers responsibility to ensure manufacturing of future product incorporates the correct addition rate of antimicrobial additive.