FORSCHUNGSINSTITUT
HOHENSTEIN
PROF. DR. JÜRGEN MECHEELS

SCHLOSS HOHENSTEIN · D-74357 BÖNNIGHEIM

Institute for Hygiene and Biotechnology

DAP-PL-1603.00
The accreditation applies for the test methods listed in the certificate - marked [A] in the report.

Binamed
Moll GmbH
Mr. Michael Moll
Kulmbacherstraße 115

D-95445 Bayreuth

Your Customer No.:	Contact person	Ext.	Our ref.:	Date
48604	Jutta Secker	271-420	dr.dh / se	13. August 2008

TEST REPORT

Test Report No.: 08.8.3-0071 Part 1

Client:	see address
Test material:	„Clean Hand“
Receipt of order:	2008-08-05
Examination period:	2008-05-06 until 2008-08-08
Name of sample:	See table

The test report comprises 4 pages.

Test Aim

Textile materials – Determining the antibacterial activity.

Methods

DIN EN ISO 20743[A]: 10-2007: “Textiles - Determination of the antibacterial activity of antibacterial finished products”

Test strain: *Staphylococcus aureus* ATCC 6538, *Klebsiella pneumoniae* ATCC 4352

- **Modifications**

Sterilisation	UV
Thinning agent for inoculation [3)]	NaCl 0,9 % + 0,05 % Tween 80
Thinning agent for eluation	NaCl 0,9 % + 0,20 % Tween 80
Calculation	$\log_{10}C_0 = \log_{10}T_0$

Calculation

The value of germ growth is calculated over 18 hours on the sample, in comparison to the reference material and according to the formula:

$$\boldsymbol{A = (\log_{10}C_{18h} - \log_{10}C_{0h}) - (\log_{10}T_{18h} - \log_{10}T_{0h})}$$

C = reference material
T = Sample material

Foundation of the assessment*

**Defined of Forschungsinstitut Hohenstein*

Grading of assessment by the Hohenstein Research Institute:

total antibacterial activity	growth reduction efficacy
no	< 0,5
slight	≥ 0,5 to < 1 [*)]
significant	≥ 1 to < 3
strong	≥ 3

[*)] *Due to the biological variance (lab standard ± 0.5 log steps) a certificate of the antimicrobial activity can be exposed only if a significant efficacy is given – independent of the antibacterial graduation).*

Test material

Customers product	Sample name - number
Clean Hand	0071-1

Result

GROWTH VALUE, INTERNAL GROWTH CONTROL, NON TREATED PES

	average value [cfu]	average value [log cfu]	growth value 3)
***Staphylococcus aureus* ATCC 6538**			
0 h	$3{,}39 \times 10^5$	5,53 1)	--
18 h	$2{,}54 \times 10^5$	5,41 2)	-0,12
***Klebsiella pneumoniae* ATCC 4352**			
0 h	$1{,}26 \times 10^5$	5,10 1)	--
18 h	$3{,}75 \times 10^6$	6,57 2)	1,47

1) *Common logarithm of number of viable bacteria (average of 3 test pieces) immediately after inoculation on untreated specimen;*

2) *common logarithm of number of viable bacteria (average of 3 test pieces) after 18 hour incubation on untreated specimen;*

3) *Difference between 2) and 1) = growth value*

The growth value is not part of the calculation but an internal control. A growth value up to –1, especial for S. aureus, is possible under given modifications

SAMPLE „0071-1“

Antibacterial activity

	average value [cfu]	average value [log cfu]	Reduction 1)	evaluation
***Staphylococcus aureus* ATCC 6538**				
0 h	--	--	4,13	strong
18 h	< 20	1,28 1)		
***Klebsiella pneumoniae* ATCC 4352**				
0 h	--	--	3,45	strong
18 h	$1{,}35 \times 10^3$	3,13 1)		

1) *common logarithm of number of viable bacteria (average of 3 test pieces) after 18 hours incubation on treated specimen.*

Evaluation of the test results

Controls:
The biological activity of the test strains and the results of the controls were not to object. The experimental procedure was valid.

Sample 0071-1: Clean hand

There is a strong antibacterial activity of the test strains *Staphylococcus aureus* ATCC 6538 and *Klebsiella pneumoniae* ATCC 4352 under given test conditions for the tested samples, calculated with standard polyester.

Only the information in the signed test report is binding.

Schloss Hohenstein, 13. August 2008

Director of the Institute
for Hygiene and Biotechnology

PD Dr. Dirk Höfer

Head of the Laboratory
for Hygiene and Biotechnology

Dipl.-Biol. Jutta Secker