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Aschaffenburg, 28th July 2005

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REPORT

Order No.: 4748a **page 1 of 3 pages**

Client: Bioni-Shield C.C.S. GmbH, Oberhausen
(Revised version of report 4745 of 13th July 2005)

Date of Order: 3rd June 2005

Receipt of Sample Material: 6th June 2005 and 4th July 2005

Origin of Sample Material: From client

Object of Investigation: Investigation of antimicrobial samples


(Dr. Hasselberg)


(Dr. Scheid)
Mikrobiologe

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This report refers to the samples described here only. Information and statistical data on the results will be supplied upon request.

Measurements which are not accredited were not yet validated at the time of assessment. Due to the limited field of application, some tests were not intended to be accredited. The accuracy necessary for the evaluation was ensured in this case by the internal quality management system.

Geschäftsführer: Dr. Ralph Derra, Dr. Marion Hasselberg · Handelsregister: Aschaffenburg HRB 3329

Die Veröffentlichung von Ergebnissen unserer Arbeiten und Gutachten sowie die Verwendung für Werbezwecke bedürfen – auch auszugsweise – unserer schriftlichen Genehmigung.
Erfüllungsort und Gerichtsstand Aschaffenburg

Sample Material

The following sample material was presented for investigation

Sample 1: Sample B – Reference sample

Sample 2: Sample A - Bioni interior coating material with nano active component

Methodology

Period of Investigation: 7th June 2005 to 8th July 2005

Investigation of Antibacterial Effectiveness

The determination was based upon the JIS Z 2801:2000 method.

The treated sides of sample pieces of 4.5 cm x 4.5 cm were inoculated with a test micro organism. Immediately after inoculation, the micro organisms were rinsed from some of the samples with neutralisation solution (T₀) and the number of micro organisms on the samples was determined. The remaining samples were stored in a damp chamber. After 24 h (T₂₄) they were also rinsed with neutralisation solution and the number of micro organisms on the sample was determined.

Test organism: *Staphylococcus aureus* (ATCC 6538)

Storage conditions: 35 °C, 24 h

The reduction in the number of micro organisms was calculated as follows:

in relation to the original number of micro organisms: $\% \text{ reduction} = \frac{(T_0 - T_{24,Pr})}{T_0} \times 100$

in relation to the reference material: $\log. \text{ reduction} = \log \left(\frac{T_{24,Ref}}{T_{24,Pr}} \right)$

T₀ = number of micro organisms/sample, directly after inoculation

T_{24, Pr} = number of micro organisms/sample, after 24 h incubation, on the sample

T_{24, Ref} = number of micro organisms/sample, after 24 h incubation, on the reference

Log. reduction = value of the antimicrobial activity according to JIS Z 2801:2000

Result in % reduction:

Test Micro Organism	% -Reduction	
	Sample 1	Sample 2
<i>Staphylococcus aureus</i>		
Average	99,02	99,60
Standard deviation	0,44	0,06

Result as logarithmic reduction:

Test Micro Organism	log. Reduction	
	Sample 1	Sample 2
<i>Staphylococcus aureus</i>		
Average	---	0,39
Standard deviation	---	0,25

The functionality of the test system used was confirmed by the use of reference samples.

The accreditation applies to test methods in the report marked with * (Registration - No. DAC-P-0035-97-10).

End of report.