Laborbericht / Laboratory Report

Auftraggeber / Client:	Freudenberg Home and Cleaning Solutions GmbH, Regional Technical Centre Europe Hoehnerweg 2-4, Bau 149, 69469 Weinheim Herr Thorsten Gleich		
Auftragsdatum / Date of order:	02.11.2017	BMA-Auftragsnr. / BMA order no.:	AU171102-03
Ihre Auftragsnr. / Your order no.:		BMA-Probennr. / BMA sample no.:	171103-04/1
Probeneingang/-nahme / Sample receipt/sampling:	03.11.2017	Analysenzeitraum / Period of analysis:	22.-27.11.2017
Probennehmer / Sampler:	Auftraggeber / Client	Berichtsnr. / Report no.:	BE171102-03/1/K1 substitute for BE171102-03/1
		Ansprechpartner / Contact:	U. Stephan
		Berichtsdatum / Date of report:	14.12.2017

1. Prüfgegenstand / Specimen

Produkt/Material / Product/Material: **Vileda Professional MicronSolo Wipes**

2. Untersuchung / Examination

Microbiological examination of products
Examination of the efficiency of a microfiber cloth used for cleaning of a bacteria contaminated surface.

3. Prüfverfahren und Normverweis / Test method and standard

The present study is based on EN 1174-2, DIN EN ISO 846, method C and according to the customer's instructions (see laboratory report BE141212-07/1/K1). The preparation of the samples and the cleaning procedure were performed in a clean bench.
Bacteria test strain: *Pseudomonas aeruginosa* (DSM-Nr. 288)
Test surface: plastic (5,1 x 4,6 cm), with plain surface
Cloth: Vileda Professional MicronSolo Wipes (41 cm x 30 cm), moistened with 13,4 ml sterile water

Samples 1.1 to 1.3: negative control, test squares after pre-cleaning
Samples 2.1 to 2.3: positive control, test squares contaminated with bacteria suspension,
Samples 3.1 to 3.3: test squares contaminated with bacteria suspension and cleaned with Vileda Professional MicronSolo Wipes moistioned with sterile water

Applied bacteria suspension and incubation

0,1 ml of a *P. aeruginosa* suspension with 8,8 x 10^4 cfu/ml (colony forming unit) were applied to each test square; calculated amount per test square: 8,8 x 10^3cfu.

Cleaning procedure: the cloth was moistened with sterile water and adequately folded in order to fix it to a lab testing device (provided by the customer) consisting of a massive plastic block (9 cm x 6 cm) and ensuring a homogenous pressure. Then the cloth with the block was wiped once across the test surface by moving it in form of an 8 at a speed of approx. 5 cm/s.

Elution and determination of bacteria from the sample squares: samples were incubated in 50 ml 0,9% NaCl/0,01% Tween 80 solution in 200 ml-plastic vessels with screw caps and shaked 20 min end to end. The bacteria concentration of the suspension was analysed using the spread plate method (100 µl plating volume of dilution series) and/or the filtration method for samples with expected high or low bacteria contamination respectively. The agar plates were cultivated 3-5 days at 30°C.

DAkkS Deutsche Akkreditierungsstelle D-PL-18029-01-00

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4. Untersuchungsergebnisse / Test results

Die Ergebnisse der Messungen und Analysen beziehen sich ausschließlich auf die untersuchte Probe. / The results of the measurements and analyses exclusively refer to the examined sample.

4.1 Bakterienkonzentration in der Anwendungssuspension / Amount of bacteria in the applied suspension

Probe/Identifikation / Sample/Identification	Durchschnittl. aufgetragene Bakterienkonz. [KBE/Rechteck] / Mean applied bacteria conc. [cfu/square]
Applied bacteria (*P. aeruginosa* suspension)	**8.800**

4.2 Bakterienanzahl auf den Testflächen / Amount of bacteria on the test squares

Probe/Identifikation / Sample/Identification	Proben-Nr. / Sample no.	Bakterienanzahl / Amount of Bacteria (*P. aeruginosa*)		
		Rechteck [KBE/23,46 cm²] / Test square [CFU/23,46 cm²]	[KBE/m²] / [CFU/m²]	Mittelwert [KBE/m²] / Mean [CFU/m²]
Plain plastic surface, untreated (Negative control after disinfection) 171103-04/1	1.1	**< 1** (a)	< 426	**< 426**
	1.2	**< 1** (a)	< 426	
	1.3	**< 1** (a)	< 426	
Plain plastic surface after **bacteria application** (Positive control) 171103-04/2	2.1	**7.500** (b)	3,2 x 10^6	**2,9 x 10^6**
	2.2	**6.000** (b)	2,6 x 10^6	
	2.3	**6.500** (b)	2,8 x 10^6	
Plain plastic surface after **bacteria application** and **cleaning** with **Vileda Professional MicronSolo Wipes** 171103-04/3	3.1	**1** (a)	426	**568**
	3.2	**2** (a)	852	
	3.3	**1** (a)	426	
Reduktion / Reduction [%]			**99,98**	

(a) BG Filtrationsmethode: 1 KBE/50 ml (Rechteck) / LOD filtration method: 1 cfu/50 ml (test square)
(b) BG Ausstrichmethode: 500 KBE/50 ml (Rechteck) / LOD smear method: 500 cfu/50 ml (test square)

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