Laboratory Report

Client:	Freudenberg Haushaltsprodukte KG, Technical Centre Europe Bau 149 Hoehnerweg 2-4, 69469 Weinheim Herr Jörg Dunkel		
Your date of order:	08.08.2012	Receipt of samples / sampling:	09.08.2012
Your order no.:		Period of analysis:	13.-18.08.2012
BMA order no.:	AU120808-14	Date of report:	12.09.2012
BMA sample no.:	120809-09/3	Report no.:	BE120808-14/3
Report writing:	U. Stephan		Page 1 of 2

Sample

Cloth: ***HygienePlus Mop (internal description: white with grey isles, back side grey)***, washed 5 times at 60°C
(The sample was sent by the customer)

Analyses

Microbiological examination of products
Evaluation of the capability of the cloth HygienePlus Mop (internal description: white with grey isles, back side grey), washed 5 times at 60°C to reduce bacteria on floor surfaces

1. Method(s) and material

The present study is based on EN 1174-2, DIN EN ISO 846, method C the customer's instructions and BMA-Laboratory reports of AU120425-05.
The test was performed in a clean bench.
Bacteria test strain: *Pseudomonas aeruginosa* (DSM-Nr. 288)
Neutral cleaner: Tana Green care Neutral-Reiniger 04631 (TANA Chemie GmbH, Mainz, Germany)
Test surface: PVC floor covering, non structured (89 cm x 27 cm), disinfected; subdivided into 39 sample squares (9 cm x 7 cm)
Samples 3.1 to 3.3: Negative control after disinfection, samples 3.4 to 3.9: Positive control after bacteria application, samples 3.10 to 3.39: treated sample squares after bacteria application and cleaning with the test cloth.

Applied bacteria suspension

5 ml of *P. aeruginosa* suspension (5,5 x 10^{18} cfu (colony forming unit); calculated amount per test sample (9 cm x 7 cm): 1,5 x 10^{17}.

Eluation and determination of bacteria from the sample squares

Samples were incubated in 15 ml 0,9% NaCl solution in a falcon tube 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 5 days at 30°C.

Cleaning procedure

The cloth was moistened by spraying 90 ml 1% neutral cleaner in water. Then it was fixed to the cleaning device, wiped once across the test surface by moving it in form of an 8 with a homogenous pressure at a speed of approximately 5 cm/s based on instrutions of the customer.

2. Results

2.1 Amount of aerobic mesophilic bacteria after disinfection

The results of the measurements and analyses exclusively refer to the examined sample(s).

Sample / Sample identification	Sample No.	Sample description	Mean concentration of mesophilic bacteria	
			Sample square (63 cm²) [CFU/15 ml]	[CFU/m²]
Control 120809-09/3	3.1-3.3	Negative control after disinfection	0 [(a)]	0

[(a)] Detection limit filtration: 1 cfu/15 ml
[(b)] Detection limit spread plate: 150 cfu/15 ml

2.2 Amount of *Pseudomonas aeruginosa* before and after cleaning

The results of the measurements and analyses exclusively refer to the examined sample(s).

Sample / Sample identification	Sample No.	Sample description	Mean concentration of *P. aeruginosa*	
			Sample square (63 cm²) [CFU/15 ml]	[CFU/m²]
Cloth: ***HygienePlus Mop (internal description: white with grey isles, back side grey)*** 120809-09/3	3.4-3.9	Positive control after bacteria application	$8{,}1 \times 10^{8}$ [(b)]	$2{,}2 \times 10^{11}$
	3.10-3.39	Treated sample squares after bacteria application and cleaning with the test cloth	$3{,}2 \times 10^{4}$ [(a)/(b)]	$5{,}1 \times 10^{6}$
		Reduction [%]	99,996	

[(a)] Detection limit filtration: 1 cfu/15 ml
[(b)] Detection limit spread plate: 150 cfu/15 ml

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