



**REPORT**  
**INTERTEK ETL-SEMKO DIVISION**  
 1717 Arlingate Lane COLUMBUS, OHIO 43228

PROJECT NO.:3087029

DATE: Nov.30th, 2005

REPORT NO. 3087029-01

**RENDERED TO:**  
 Filtration Manufacturing Inc.  
 47 J. Faris Drive  
 Andalusia, AL 36421

**STANDARD REFERENCED AND TEST METHOD:** ITS Non-Standardized Test: Microbial Reduction Rate.

**AUTHORIZATION:** The test was authorized by Art Knowles; Purchase Order No.000711.

**TEST/SPECIMEN DESCRIPTION:** The test performed was the Microbial Reduction Rate conducted at the Intertek microbiology lab in Columbus. The Environet Air Cleaner was tested for its ability to reduce the number of microorganisms in a test chamber. The test chamber was contaminated with *Bacillus subtilis*, *Serratia marsescens* and *Aspergillus versicolor*. A test chamber was used to simulate a stable environment of one room in any ordinary house. The chamber was 411.4 cu ft in volume. Each microorganism was individually aspirated into the chamber for a required time period of 20 minutes using a nitrogen tank. Samples were vacuumed onto agar plates for a time period of 90 minutes after the nitrogen was stopped. The negative controls for *B. subtilis* and *S. marsescens* were samples taken on nutrient agar before each aspiration began. The negative control for *A. versicolor* was collected the same as for each of the bacteria above with the exception of being plated on potato dextrose agar. The positive controls (natural decay) for each microorganism was collected at the beginning of each test. Samples were analyzed and enumerated for each microorganism using the Environet Air Cleaner (high setting).

**RESULTS:** The negative controls showed no signs of growth. The positive controls showed complete growth over the agars surface. The original number of each microorganism aspirated into the chamber was  $1 \times 10^8$  cfu/ml. The initial change in colonies for all tested settings was found to be the result of the engineer manually turning the unit on, thus briefly opening and closing the door. The *B. subtilis* showed a 100% reduction from the natural decay in the high setting after 1 hour. *S. marsescens* showed an 85% reduction from the natural decay setting in the high setting after 1 hour and a 100% reduction after 2 hours. *A.versicolor* showed no reduction from the natural decay setting in the high setting after 1 hour and no reduction after 2 hours. Please see the following pages for raw data breakdown.

**CONCLUSION:** This report documents the performance of the Environet Air Cleaner. The microbiological test sample evaluations were conducted at the Intertek laboratory located in Columbus, OH between Nov. 21<sup>st</sup>, 2005 and Nov.30th, 2005. The Environet Air Cleaner successfully reduces the bacteria 100% after 2 hours.

Test Performed by:

*Shannon Meier*  
 Shannon Meier  
 Microbiologist  
 Analytical Laboratory

Report Approved by:

*John Senediak*  
 John Senediak  
 Lab Manager  
 Analytical Laboratory

**Subject:**

An independent organization testing for safety, performance, and certification.

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REPORT NO.:3087029-01

DATE: Nov.30th, 2005

*Bacillus subtilis*

Time (minutes)	Natural Decay (colonies)	High Serting (colonies)
0	TNTC	TNTC
3	TNTC	TNTC
5	TNTC	642
7	TNTC	339
10	TNTC	318
12	TNTC	256
15	TNTC	224
20	TNTC	106
25	TNTC	79
30	783	38
35	771	28
40	668	17
45	639	14
50	399	9
55	384	8
60	235	4
65	221	2
70	214	2
75	208	2
80	197	1
85	158	0
90	154	0
100	139	0
110	131	0
120	112	0
Total End % Reduction	N/A	100%

TNTC: TOO NUMEROUS TO COUNT.

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REPORT.: 3087029-01

DATE: Nov.30<sup>th</sup>, 2005*Serratia marsescens*

Time (minutes)	Natural Decay (colonies)	High setting (colonies)
0	TNTC	TNTC
3	TNTC	TNTC
5	TNTC	432
7	685	407
10	576	384
12	524	299
15	419	261
20	378	182
25	373	121
30	258	103
35	236	91
40	105	69
45	89	38
50	82	31
55	81	27
60	72	11
65	64	6
70	46	5
75	41	2
80	40	0
85	31	0
90	26	0
100	22	0
110	19	0
120	16	0
Total End % Reduction	N/A	100%

TNTC: TOO NUMEROUS TO COUNT

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REPORT: 3087029-01

DATE: Nov. 30<sup>th</sup>, 2005*Aspergillus versicolor*

Time (minutes)	Natural Decay (colonies)	High Setting (colonies)
0	320	409
3	317	392
5	301	333
7	297	317
10	288	314
12	281	296
15	273	291
20	267	282
25	241	258
30	212	243
35	194	229
40	192	195
45	184	193
50	160	187
55	151	174
60	149	169
65	136	138
70	119	122
75	98	104
80	74	84
85	72	67
90	49	61
100	14	20
110	12	17
120	12	16
Total End % Reduction	N/A	0%

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