



# FITI TESTING & RESEARCH INSTITUTE

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## TEST REPORT

APPLICANT : ENPUTECH

REPORT NO : 41-41-03-10033

DATE : 2003-05-07

SAMPLE DESCRIPTION : ONE(1) SAMPLE OF PULIGHT, SUBMITTED ON 2003-04-14.

### TEST CONDUCTED

### TEST RESULTS

#1

(1) ANTIMICROBIAL EFFICACY TEST (SHAKE FLASK METHOD(FC-TM-19)-2001) : CFU/ml, PERCENT REDUCTION OF BACTERIA %

	BLANK	SAMPLE
BACTERIA-1 : START	1.5 x 10 <sup>5</sup>	1.5 x 10 <sup>5</sup>
AFTER 20SEC.	1.5 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9
BACTERIA-2 : START	1.3 x 10 <sup>5</sup>	1.3 x 10 <sup>5</sup>
AFTER 20SEC.	1.4 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9
BACTERIA-3 : START	1.4 x 10 <sup>5</sup>	1.4 x 10 <sup>5</sup>
AFTER 20SEC.	1.5 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9
BACTERIA-4 : START	1.6 x 10 <sup>5</sup>	1.6 x 10 <sup>5</sup>
AFTER 20SEC.	1.7 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9
BACTERIA-5 : START	1.3 x 10 <sup>5</sup>	1.3 x 10 <sup>5</sup>
AFTER 20SEC.	1.3 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9
BACTERIA-6 : START	1.7 x 10 <sup>5</sup>	1.7 x 10 <sup>5</sup>
AFTER 20SEC.	1.7 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9
BACTERIA-7 : START	1.5 x 10 <sup>5</sup>	1.5 x 10 <sup>5</sup>
AFTER 20SEC.	1.6 x 10 <sup>5</sup>	<10
PERCENT REDUCTION OF BACTERIA	---	99.9

- NOTE) • INOCULUM CONCENTRATION : BACTERIA-1 : 1.5 ± 0.3 × 10<sup>5</sup>/ml  
 BACTERIA-2 : 1.3 ± 0.3 × 10<sup>5</sup>/ml  
 BACTERIA-3 : 1.4 ± 0.3 × 10<sup>5</sup>/ml  
 BACTERIA-4 : 1.6 ± 0.3 × 10<sup>5</sup>/ml  
 BACTERIA-5 : 1.3 ± 0.3 × 10<sup>5</sup>/ml  
 BACTERIA-6 : 1.7 ± 0.3 × 10<sup>5</sup>/ml  
 BACTERIA-7 : 1.5 ± 0.3 × 10<sup>5</sup>/ml
- NONIONIC WETTING AGENT : TWEEN 80 (0.05%)
- TEST CONDITION : THE UV IS IRRADIATED AT 35 ± 1 °C, RH 90 ± 5 % FOR 20 SEC, AND DETERMINE BACTERIA CELL GROWTH INHIBITION RATE BY POUR AGAR PLATE METHOD.
- TEST BACTERIA : BACTERIA-1 : *Klebsiella pneumoniae* ATCC 4352.  
 BACTERIA-2 : *Pseudomonas aeruginosa* ATCC 27853.  
 BACTERIA-3 : *Escherichia coli* ATCC 43895.  
 BACTERIA-4 : *MRSA(Methicillin Resistance S. aureus)* ATCC 33592.  
 BACTERIA-5 : *Bacillus subtilis* ATCC 6633  
 BACTERIA-6 : *Shigella flexneri* ATCC 9199.  
 BACTERIA-7 : *Vibrio parahaemolyticus* ATCC 17802.

- < = LESS THAN.  
 • SEE ATTACHED PHOTOS.

\*\*\*\*\*

*Ho-chul Kim*

HO CHUL KIM  
EXECUTIVE DIRECTOR

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165-A-61-1-7

89 2 15



REPORT NO. : 41-41-03-10033 (PAGE 1 OF 9)



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- SAMPLE PHOTO -



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165-A-61-1-71

89 2 15



REPORT NO. : 41-41-03-10033 (PAGE 2 OF



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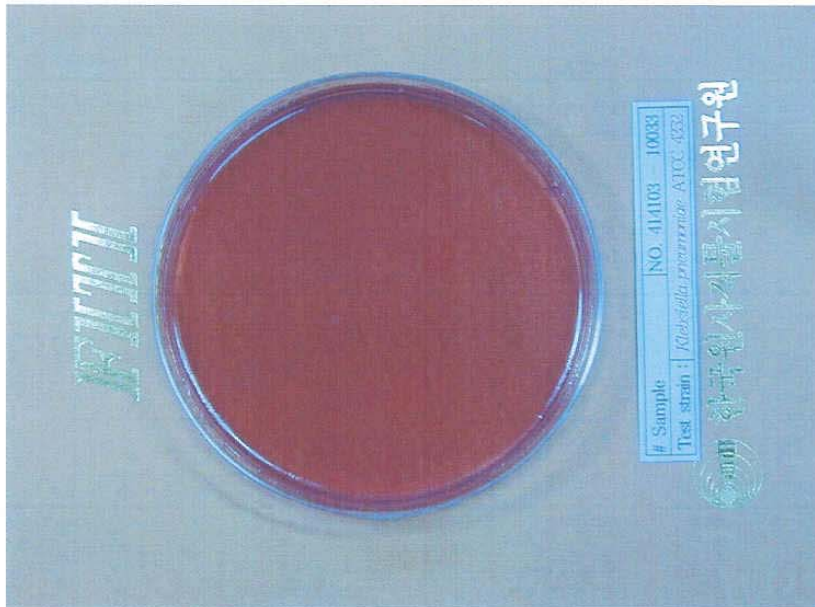
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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-1 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-1 : SAMPLE -



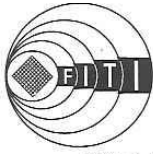
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89. 2. 15



REPORT NO. : 41-41-03-10033 (PAGE 3 OF





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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-2 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-2 : SAMPLE -



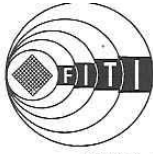
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REPORT NO. : 41-41-03-10033 (PAGE 4 OF 9)





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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-3 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-3 : SAMPLE -



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165-A-61-1-가  
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REPORT NO. : 41-41-03-10033 (PAGE 5 OF



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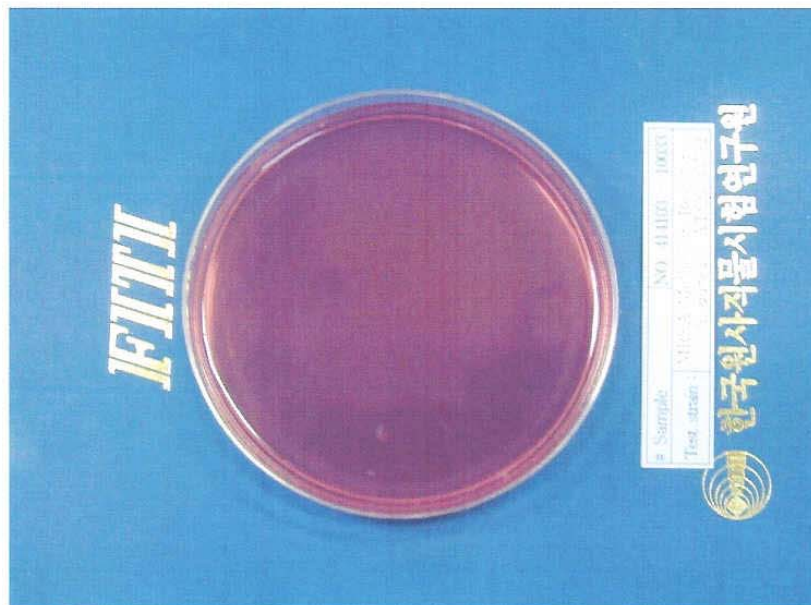
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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-4 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-4 : SAMPLE -



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165-A-61-1-가  
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REPORT NO. : 41-41-03-10033 (PAGE 6 C





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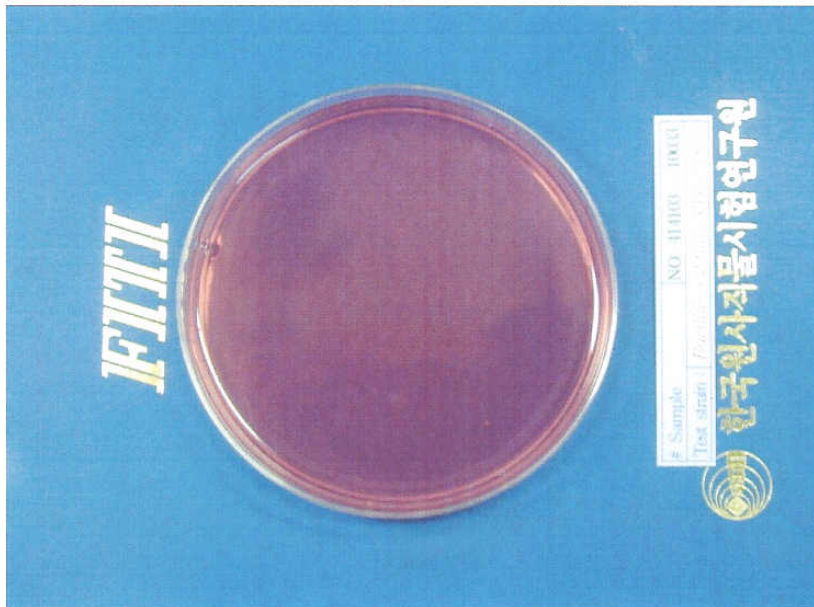
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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-5 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-5 : SAMPLE -



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REPORT NO. : 41-41-03-10033 (PAGE 7 OF





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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-6 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-6 : SAMPLE -



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165-A-61-1-가  
89. 2. 15



REPORT NO. : 41-41-03-10033 (PAGE 8 OF



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- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-7 : BLANK -



- ANTIMICROBIAL EFFICACY TEST PHOTO : BACTERIA-7 : SAMPLE -



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## TEST REPORT

APPLICANT : ENPUTECH

REPORT NO : 41-41-03-09576

DATE : 2003-04-17

SAMPLE DESCRIPTION : ONE(1) SAMPLE OF PULIGHT, SUBMITTED ON 2003-04-09.

### TEST CONDUCTED

### TEST RESULTS

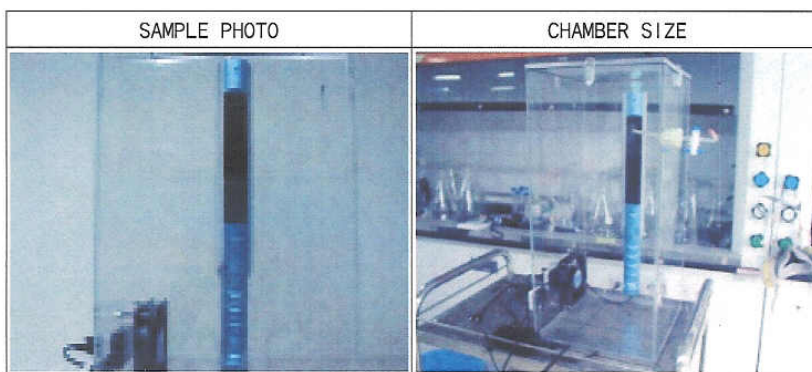
#1

(1) DEODORIZATION EFFICIENCY (GAS DETECTION TUBE METHOD) : %

AMMONIA	
5min.	27.5
15min.	28.9
30min.	29.1
60min.	29.4
FORMALDEHYDE	
5min.	30.0
15min.	30.6
30min.	31.3
60min.	32.0

- NOTE) • SAMPLE : CLIENT ' S SUGGESTING STATE  
 • TEST GAS : AMMONIA, FORMALDEHYDE  
 • INJECTION VOLUME : AMMONIA ; 250 $\mu$ l, FORMALDEHYDE ; 100 $\mu$ l  
 • DEODORIZATION EFFICIENCY(%) = (Cb - Cs) / Cb x 100  
 - Cb : BLANK, CONCENTRATION OF THE TEST GAS REMAINED IN THE FLASK AT EACH TIME  
 - Cs : SAMPLE, CONCENTRATION OF THE TEST GAS REMAINED IN THE FLASK AT EACH TIME  
 • CHAMBER SIZE : CLIENT ' S SUGGESTING

\*\*\*\*\*



*Ho-chul kim*

HO CHUL KIM  
EXECUTIVE DIRECTOR

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REPORT NO. : 41-41-03-09576 (PAGE 1 OF





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## TEST REPORT

APPLICANT : ENPUTECH

REPORT NO. : 41-62-02-15851

DATE : 2002-06-12

SAMPLE DESCRIPTION : ONE(1) SAMPLE SAID TO BE "UV STERILIZER" SUBMITTED BY THE APPLICANT  
ON 2001-06-05

### TEST CONDUCTED

### TEST RESULTS

#1

(1) ANTIMICROBIAL EFFICACY TEST (CLIENT'S REQUEST METHOD) : CFU/ml, PERCENT REDUCTION OF BACTERIA %

	BLANK	SAMPLE	PERCENT REDUCTION OF BACTERIA
BACTERIA-1 : START	1.2 x 10 <sup>5</sup>	1.2 x 10 <sup>5</sup>	---
AFTER 30s	1.2 x 10 <sup>5</sup>	<10	99.9
AFTER 1min	1.3 x 10 <sup>5</sup>	<10	99.9
BACTERIA-2 : START	1.4 x 10 <sup>5</sup>	1.4 x 10 <sup>5</sup>	---
AFTER 30s	1.4 x 10 <sup>5</sup>	<10	99.9
AFTER 1min	1.4 x 10 <sup>5</sup>	<10	99.9
BACTERIA-3 : START	1.5 x 10 <sup>5</sup>	1.5 x 10 <sup>5</sup>	---
AFTER 30s	1.6 x 10 <sup>5</sup>	<10	99.9
AFTER 1min	1.6 x 10 <sup>5</sup>	<10	99.9

NOTE) • INOCULUM CONCENTRATION : BACTERIA-1 : 1.2 ± 0.3 × 10<sup>5</sup>/ml  
BACTERIA-2 : 1.4 ± 0.3 × 10<sup>5</sup>/ml  
BACTERIA-3 : 1.5 ± 0.3 × 10<sup>5</sup>/ml

- NONIONIC WETTING AGENT : TWEEN 80 (0.05%)
- TEST CONDITION  
- THE UV ARE CONTACTED AT 35 ± 1°C, RH90% FOR 30s, 1min AND DETERMINE BACTERIA CELL GROWTH INHIBITION RATE BY POUR AGAR PLATE METHOD.
- TEST BACTERIA : BACTERIA-1 - *Staphylococcus aureus* ATCC 6538  
BACTERIA-2 - *Escherichia coli* ATCC 25922.  
BACTERIA-3 - *Salmonella typhimurium* KCTC 1925.
- < = LESS THAN.
- SEE ATTACHED PHOTOS.

*Ho-chul Kim*  
HO CHUL KIM  
EXECUTIVE DIRECTOR

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165-A-61-1-가  
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REPORT NO. : 41-62-02-15851 (PAGE 1 OF 1)



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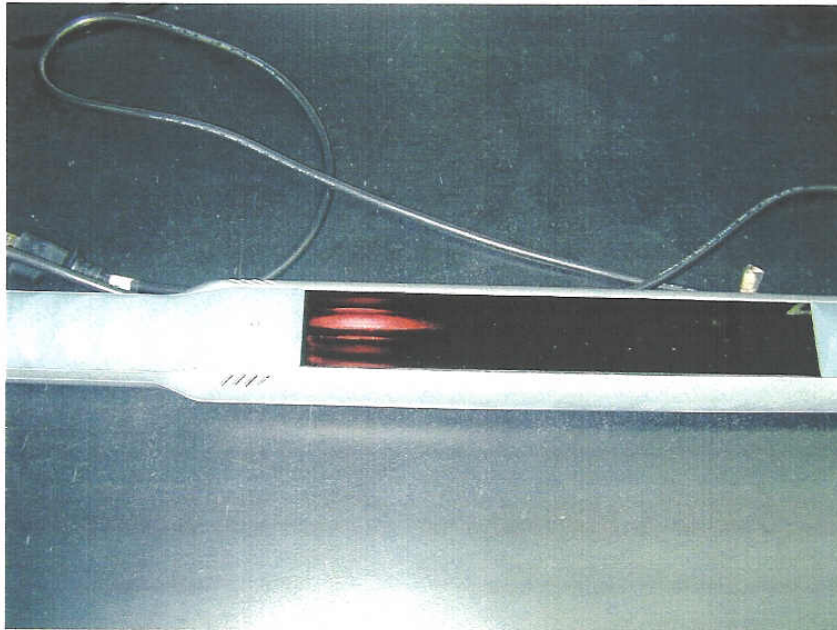
(2) ANTIMITE EFFICACY TEST (CLIENT'S REQUEST METHOD) : %

	BLANK	SAMPLE	PERCENT REDUCTION OF MITE
ARGANISM-1 : START	1.5 x 10 <sup>4</sup>	1.5 x 10 <sup>5</sup>	---
AFTER 30s	1.6 x 10 <sup>4</sup>	<10	99.9
AFTER 1min	1.6 x 10 <sup>4</sup>	<10	99.9
ARGANISM-2 : START	1.3 x 10 <sup>4</sup>	1.3 x 10 <sup>4</sup>	---
AFTER 30s	1.3 x 10 <sup>4</sup>	<10	99.9
AFTER 1min	1.4 x 10 <sup>4</sup>	<10	99.9

- NOTE) • TEST CONDITION : THE UV ARE CONTACTED AT 35 ± 1°C, RH90% FOR 30s, 1min AND DETERMINE MITE GROWTH INHIBITION RATE.  
 • TEST ARGANISM : ARGANISM-1 - *Dermatophagoides farinae*  
 ARGANISM-1 - *Dermatophagoides pteronyssinus*  
 • < = LESS THAN

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SAMPLE PHOTO:



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REPORT NO. : 41-62-02-15851 (PAGE 2 OF 3)



# Korea Merchandise Testing & Research Institute

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FAX : 02)856-5618, 854-6667 <http://www.komtri.re.kr>

## TEST REPORT

No. : 09360

Client : ENPUTECH

Address : 52-12 Moonjung-dong, Songpa-Ku, Seoul, Korea

Sample Description : UV Hand Sterilizer "Socksri"

Date Out : JUL. 10, 2002

Date In : JUNE. 20, 2002

Test Date : JUL. 10, 2002

Test Results : Refer to the attached sheets.

Signed by

*S. B. Chun*

Soo-Boo Chun, Manager  
Medical Supplies Dept.

Our report apply only to the standards or procedures identified and to the sample(s) tested unless otherwise specified. The test results are not indicative of representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products.





□ Test Item : Sterilizing Ability Test

○ Test Method : by Client

Strain to be used in the experiment was pre-cultured, and then same amounts of bacteria solution with constant concentrations were inoculated on the agar plate medium by spreading method. The control plate was directly positioned into the 37 °C incubator without exposure to the test system. After operating the test system for exposure time (second), the plate was incubated for 24 hours at 37 °C incubator. The number of viable bacteria was measured using a plate counting method. Sterilizing ability was expressed as a percent according to following equation.

※ Sterilizing ability(%) =

$$\left( \frac{\text{Number of viable bacteria of control} - \text{Number of viable bacteria of trial}}{\text{Number of viable bacteria of control}} \right) \times 100$$

○ Test Microorganism : *Escherichia coli* (ATCC 8739)

*Staphylococcus aureus* (ATCC 6538)

*Salmonella typhimurium* (KCTC 1925)

○ Test Results

Test microorganism	Groups	Number of bacteria(CFU/plate)	Sterilizing ability(%)
<i>Escherichia coli</i> (ATCC 8739)	Control(no operation)	$1.4 \times 10^6$	-
	Trial(operation)	6	99.99
<i>Staphylococcus aureus</i> (ATCC 6538)	Control(no operation)	$1.3 \times 10^6$	-
	Trial(operation)	1	99.99
<i>Salmonella typhimurium</i> (KCTC 1925)	Control(no operation)	$1.7 \times 10^5$	-
	Trial(operation)	2	99.99