

TEST REPORT: 7191181576-CHM18-02-RC

Date: 12 MAR 2018

Tel: +65 68851345 Fax: +65 67732912

Client's Ref:

Email: Randy.CHIN@tuv-sud-psb.sg

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SUBJECT

Antimicrobial Activity Evaluation

CLIENT

Virgo Pacific Pte Ltd
7 Gambass Crescent
#01-27 ARK@Gambas
Singapore 757087

Attn : Ms. Sharon Tan

SAMPLE SUBMISSION DATE / TEST DATE

10 Jan 2018 / 18 Jan 2018

DESCRIPTION OF SAMPLE

1 sample of labelled as "Virgo High Pressure Laminates/ DM 1409 S" was submitted.

METHOD OF TEST

Based on JIS Z 2801 : 2012

"Antimicrobial products – Test for antimicrobial activity and efficacy".

The test microorganisms used were :

Pseudomonas aeruginosa (ATCC 15442)
Enterococcus faecalis (ATCC 29212)
Klebsiella pneumoniae (ATCC 4352)
Methicillin-resistant *Staphylococcus aureus* (NCTC 12493)
Staphylococcus aureus (ATCC 6538)
Salmonella typhimurium (ATCC 14028)
Staphylococcus epidermidis (ATCC 12228)
Bacillus subtilis (ATCC 6633)

Test sample size of treated test piece: 5 cm x 5 cm

Control sample (Blank): Polyethylene film, 5 cm x 5 cm

Size of film: 4 cm x 4 cm polyethylene film

Volume of test inoculum : 0.2 ml



Laboratory:
TÜV SÜD PSB Pte. Ltd.
No.1 Science Park Drive
Singapore 118221

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1 Science Park Drive, #02-01
Singapore 118221
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RESULTS

Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Pseudomonas aeruginosa</i> (ATCC 15442)			
Control Sample (Blank)	160 000	110 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 4.06
Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Enterococcus faecalis</i> (ATCC 29212)			
Control Sample (Blank)	130 000	49 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.69
Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Klebsiella pneumoniae</i> (ATCC 4352)			
Control Sample (Blank)	160 000	48 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.68

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Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
Methicillin-resistant <i>Staphylococcus aureus</i> (NCTC 12493)			
Control Sample (Blank)	150 000	86 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.94
Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Staphylococcus aureus</i> (ATCC 6538)			
Control Sample (Blank)	180 000	280 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 4.45
Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Salmonella typhimurium</i> (ATCC 14028)			
Control Sample (Blank)	140 000	54 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.74

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Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Staphylococcus epidermidis</i> (ATCC 12228)			
Control Sample (Blank)	130 000	49 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.69
Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Bacillus subtilis</i> (ATCC 6633)			
Control Sample (Blank)	180 000	42 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.63

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Remarks :

The above test results related to the samples as received.

A handwritten signature in black ink, appearing to be 'H. Y. I.' with a stylized flourish at the end.

MS AW HWEE YING
TECHNICAL EXECUTIVE

A handwritten signature in black ink, appearing to be 'R. K. F.' with a stylized flourish at the end.

MR RANDY CHIN KOK FEI
PRODUCT MANAGER
MICROBIOLOGY
CHEMICAL & MATERIALS

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July 2011

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DESCRIPTION OF SAMPLE

1 sample of labelled as "Virgo High Pressure Laminates/ DM 1409 S" was submitted.

METHOD OF TEST

JIS Z 2801 : 2012

"Antimicrobial products – Test for antimicrobial activity and efficacy".

The test microorganisms used were :

Escherichia coli (ATCC 8739)

Staphylococcus aureus (ATCC 6538P)

Test sample size of treated test piece: 5 cm x 5 cm

Control sample (Blank): Polyethylene film, 5 cm x 5 cm

Size of film: 4 cm x 4 cm polyethylene film

Volume of test inoculum : 0.2 ml



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RESULTS

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	0 hour	24 hours	
<i>Staphylococcus aureus</i> (ATCC 6538P)			
Control Sample (Blank)	180 000	32 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.51
Test microorganism (Bacterial cells inoculated per test piece)	Average of the number of viable cells of test microorganism per test piece		Value of Antimicrobial Activity (Criteria : Not less than 2.0)
	0 hour	24 hours	
<i>Escherichia coli</i> (ATCC 8739)			
Control Sample (Blank)	180 000	42 000	-
"Virgo High Pressure Laminates/ DM 1409 S"	-	Less than 10	More than 3.63

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