



BIOTECH TESTING SERVICES



TC - 8484

TEST REPORT

LAB NO. : 2202221/ 1 - 3	DATE: 19/09/2022
ULR NO. TC848422100001368F	

NAME OF CUSTOMER : GREENLAM INDUSTRIES LIMITED

ADDRESS : Plot no. E - 176/179, Phase-II, RIICO Industrial Area,
P.O Behror, Dist. Alwar

REFERENCE : Letter Ref. Nil dated September 08, 2022
K. Attention: Virendra S Shekhawat

DATE OF RECEIPT : 10/09/2022

DATE OF INITIATION : 10/09/2022

DATE OF COMPLETION : 19/09/2022

SAMPLE DESCRIPTION : Test sample labeled as-

Sr. No.	Description
1.	Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010
2.	Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007
3.	Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001
Untreated lab control	

Name of Test:

JIS Z 2801: 2010; Amendment 1: 2012
Antibacterial products - Test for antibacterial activity and efficacy

Test Organisms used for evaluating Antimicrobial activity:

1. Staphylococcus aureus ATCC 6538
2. Escherichia coli ATCC 8739
3. Klebsiella pneumoniae ATCC 4352
4. Meticillin Resistant Staphylococcus aureus (MRSA) S- 129
5. Pseudomonas aeruginosa ATCC 9027
6. Salmonella typhimurium ATCC 10749
7. Streptococcus faecalis ATCC 9790
8. Enterococcus faecalis ATCC 8459
9. Candida albicans ATCC 10231

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Experimental Conditions:

Sample Size	: 5cm x 5cm
Pre-treatment of sample	: ETO Sterilisation
Inoculum Carrier	: 1: 500 Nutrient broth+ 0.05% Triton X-100
Cover Film	: LDPEFilm
Lab Control	: LDPE Film
Contact Time	: 24 hours at 37° C
Media and Reagent	: Soyabean-casein digest agar
Incubation Temperature	: 37° C for 24 hours
Neutraliser used	: SCDLP Broth

Results:

ANTIBACTERIAL ACTIVITY

1. Test Bacteria: Staphylococcus aureus ATCC 6538

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 8.90×10^4				Log = 4.94
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 8.90×10^5				Log = 5.94
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	<10	<1	>4.94	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	<10	<1	>4.94	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	<10	<1	>4.94	>99.99

2. Test Bacteria: Escherichia coli ATCC 8739

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 6.40×10^4				Log = 4.80
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 1.15×10^6				Log = 6.06
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	11500	4.06	2.00	99.00
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	1520	3.18	2.88	99.86
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	790	2.89	3.17	99.93

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2202221/1-3
Page 2 of 5

3. Test Bacteria: *Klebsiella pneumoniae* ATCC 4352

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 1.76×10^5				Log = 5.24
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 4.10×10^5				Log = 5.61
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	3800	3.57	2.04	99.07
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	3700	3.56	2.05	99.09
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	960	2.98	2.63	99.76

 4. Test Bacteria: *Meticillin Resistant Staphylococcus aureus* (MRSA) S- 129

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 2.40×10^5				Log = 5.38
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 1.16×10^6				Log = 6.06
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	10	1.00	5.06	99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	<10	<1	>5.06	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	40	1.60	4.46	99.99

 5. Test Bacteria: *Pseudomonas aeruginosa* ATCC 9027

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 1.31×10^5				Log = 5.11
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 1.89×10^6				Log = 6.27
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	18300	4.26	2.01	99.03
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	<10	<1	>5.27	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	15200	4.18	2.09	99.19

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2202221/1-3
 Page 3 of 5

6. Test Bacteria: Salmonella typhimurium ATCC 10749

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 4.70×10^4				Log = 4.67
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 1.03×10^6				Log = 6.01
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	<10	<1	>5.01	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	<10	<1	>5.01	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	340	2.53	3.48	99.96

7. Test Bacteria: Streptococcus faecalis ATCC 9790

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 1.44×10^4				Log = 4.15
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 1.06×10^5				Log = 5.02
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	<10	<1	>4.02	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	<10	<1	>4.02	>99.99
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	<10	<1	>4.02	>99.99

8. Test Bacteria: Enterofococcus faecalis ATCC 8459

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 1.80×10^4				Log = 4.25
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 9.50×10^4				Log = 4.97
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	10	1.00	3.97	99.98
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	<10	<1	>3.97	>99.98
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	<10	<1	>3.97	>99.98

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2202221/1 - 3
 Page 4 of 5

9. Test Fungus: *Candida albicans* ATCC 10231

Quantitative Assessment of Activity - JIS Z 2801: 2010				
Untreated – lab Control: Conc. of Inoculum on untreated sample at 0 hours (A): 1.46×10^4				Log = 4.16
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 5.30×10^4				Log = 4.72
Sample Identification	No. of Fungi on treated sample (C)	Log of Fungi on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - Treated-010	270	2.43	2.29	99.49
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - Treated-007	500	2.69	2.03	99.05
Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - Treated-001	30	1.47	3.25	99.94

The Standard Antimicrobial value of Evaluation $R \geq 2.0$

COMMENT:

When tested as specified, Sample labeled Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1111 - **Treated-010**; Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1112 - **Treated-007** and Greenlam 1.0 mm HPL, Décor No. #203 Suede Finish; Cycle No: 1113 - **Treated-001** ;**PASS** the Quantitative Assessment of activity for *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumonia*, *Meticillin Resistant Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Streptococcus faecalis*, *Enterococcus faecalis* and *Candida albicans* by **JIS Z 2801: 2010 Test Method**.

For BIOTECH TESTING SERVICES




Dr Shilpa U. Nair
Quality Manager
(Authorized Signatory)