



BIOTECH TESTING SERVICES

TEST REPORT

LAB NO. : 2102740/ 1

DATE: 20/09/2021

NAME OF CUSTOMER : CEDAR DECOR PVT LTD.
ADDRESS : A-1, 1001, 10th Floor, Palladium, Corporate Road,
Behind Divya Bhaskar, Makarba, Ahmedabad,
Gujarat – 380051
REFERENCE : Letter Ref. Nil dated August 19, 2021
K. Attention: Ms. Hemanshi Mistry
DATE OF RECEIPT : 19/08/2021
DATE OF INITIATION : 19/08/2021
DATE OF COMPLETION : 20/09/2021
SAMPLE DESCRIPTION : Laminate sample labeled as -

Sr. No.	Description
1.	Single Sided Decorative Laminated Sheets
Untreated lab control	

Test Standard:

Customer specified method to determine Fungus Resistance property of Synthetic Polymeric materials to Fungi; E 01 1269/ Equivalent to ASTM: G 21 – 15

Test Scope:

This standard covers determination of the effect of Fungi on the properties of Synthetic polymeric material

Experimental Conditions:

Size of Test specimen : 50 mms x 50 mms
No of replicates : Three
Positive Lab Control : Sterile Filter paper
Media used : Nutrient Salt agar
Temperature : 28°C ± 1°C
Humidity : > 85% Relative Humidity
Duration of Exposure : 28 days

• Samples are not drawn by the laboratory • Result relate only to the samples tested
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Procedure:

Specimens of size 50 mms x 50 mms were placed on Nutrient salt agar. Composite spore suspension as listed below was sprayed on specimen. The Nutrient salt agar provides all of the trace nutritional elements needed by Fungi except Carbon source. Fungus grows only when it is able to use polymeric material as Primary carbon source. Inoculated samples were incubated and examined for fungal growth. Temperature and humidity were maintained for the duration of the test. Adequate positive and Negative controls were also included along with specimen.

Mixed spore suspension of –

1. Aspergillus niger ATCC 9642
2. Penicillium pinophilum ATCC 11797
3. Gliocladium virens ATCC 9645
4. Chaetobium globosum ATCC 6205
5. Aurobasidium pullulans ATCC 15233

Results:

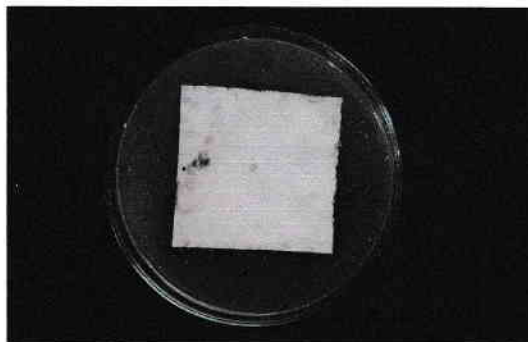
Observations were made on weekly basis for appearance for the density of fungal growth. The filter paper control pieces had copious fungal growth at 2 weeks.

At 4th week, samples were rated “0” or “1” were examined microscopically to confirm the Ratings

Rating scale for the test is as follows:

Growth on specimen	Rating
None	0
Trace of Growth (< 10 %)	1
Light Growth (10 to 30 %)	2
Medium Growth (30 to 60 %)	3
Heavy Growth (60% to complete coverage)	4

Sample Identification	Duration of the Test				
	Replicates	Week 1	Week 2	Week 3	Week 4
Single Sided Decorative Laminated Sheets	Set I	0	0-1	1	2
	Set II	0	0-1	1-2	2
	Set III	0	0-1	1-2	2-3
Control	-	1	3	4	4



Sample at; 4 weeks



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INTERPRETATION:

Test sample labeled as **Single Sided Decorative Laminated Sheets** is **Moderately Resistant to fungal attack** at the end of 28 days of incubation when tested as per specified method.

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Dr Shilpa U. Nair
Quality Manager
(Authorized Signatory)

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TEST REPORT

LAB NO. : 2103147/ 1

DATE: 17/10/2021

NAME OF CUSTOMER : CEDAR DECOR PVT. LTD
ADDRESS : A-1/1001, 10 Floor, Palladium, Corporate Road
Makarba, Ahmedabad, Gujarat
REFERENCE : Letter Ref. Nil dated September 30, 2021
K. Attention: Mohit Gupta
DATE OF RECEIPT : 30/09/2021
DATE OF INITIATION : 03/10/2021
DATE OF COMPLETION : 14/10/2021
SAMPLE DESCRIPTION : Laminate sample labeled as-

Sr. No.	Description
1.	Single Sided Decorative Laminated Sheets
Untreated lab control	

Name of Test:

JIS Z 2801: 2010

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	: LDPE Film
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): 1.68×10^4				Log = 4.22
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 2.40×10^5				Log = 5.38
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	<10	<1	>4.38	>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): 4.60×10^4				Log = 4.66
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 2.88×10^5				Log = 5.45
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	550	2.74	2.71	99.80

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): 6.00×10^4				Log = 4.77
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 3.10×10^5				Log = 5.49
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	3100	3.49	2.00	99.00

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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): 7.60×10^4				Log = 4.88
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 2.16×10^5				Log = 5.33
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	20	1.30	4.03	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): 8.40×10^4				Log = 4.92
Untreated - lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 2.24×10^5				Log = 5.35
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	1040	3.01	2.34	99.53

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): 6.00×10^4				Log = 4.77
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 2.83×10^5				Log = 5.45
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	360	2.55	2.90	99.87

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): 1.52×10^5				Log = 5.18
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 2.04×10^5				Log = 5.30
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	1600	3.20	2.10	99.21

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): 7.10×10^4				Log = 4.85
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 8.30×10^4				Log = 4.91
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	450	2.65	2.26	99.45

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): 4.70×10^4				Log = 4.67
Untreated – lab Control: Conc. of Inoculum on untreated sample after 24 hour (B): 1.03×10^5				Log = 5.01
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
Single Sided Decorative Laminated Sheets	620	2.79	2.22	99.39

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

COMMENT:

When tested as specified, **Single Sided Decorative Laminated Sheets**; **PASSES** 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




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(Authorized Signatory)