

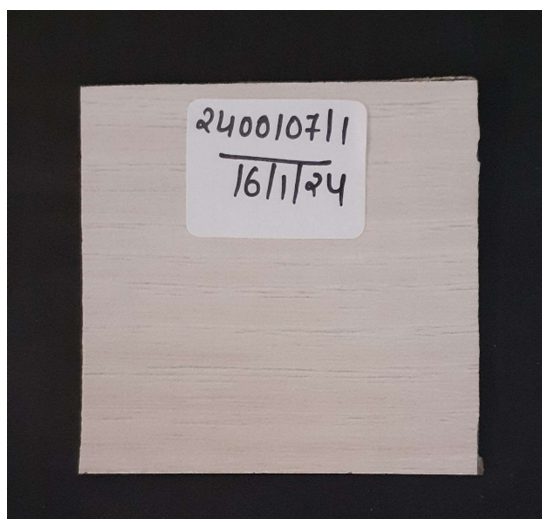
TEST REPORT

LAB NO.: 2400107/ 1

DATE: 24/01/2024

NAME OF CUSTOMER : SAMRAT PLYWOOD LIMITED
ADDRESS : SCO 827, FIRST FLOOR, NAC MANIMAJRA,
CHANDIGARH, 160101.,
REFERENCE : Letter Ref. Nil dated December 26, 2023
DATE OF RECEIPT : 16/01/2024
DATE OF INITIATION : 16/01/2024
DATE OF COMPLETION : 24/01/2024
SAMPLE DESCRIPTION : Laminate sample labeled as-

Sr No.	Description
1.	High Pressure Laminate
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. *Aspergillus niger* ATCC 6275
4. *Candida albicans* ATCC 10231
5. *Trichophyton mentagrophytes* ATCC 9533

Experimental Conditions:

Sample Size : 5cm x 5cm
 No. of sets : Triplicates
 Pre-treatment of sample : ETO Sterilisation
 Inoculum Carrier : 1: 500 Nutrient broth
 Cover Film : LDPE Film (4cmx 4cm)
 Lab Control : LDPE Film (5cmx 5cm)
 Contact Time : 24 hours at 35° C
 Media and Reagent : Soyabean-casein digest agar
 Incubation Temperature : 37° C for 48 hours
 Neutralizer used : SCDLP Broth

Compliance for Conditions of Valid test:

Test Organism	Logarithmic value of number of viable organism untreated sample at 0 hours (Lmax- Lmin)/ Lmean	Average number of viable organism recovered immediately after inoculation from the Untreated specimen	The number of viable organism recovered from each Untreated specimen after incubation after 24 hrs
<i>Staphylococcus aureus</i> ATCC 6538	0.014	Confirms	Confirms
<i>Escherichia coli</i> ATCC 8739	0.009	Confirms	Confirms
<i>Aspergillus niger</i> ATCC 6275	0.006	Confirms	Confirms
<i>Candida albicans</i> ATCC 10231	0.002	Confirms	Confirms
<i>Trichophyton mentagrophytes</i> ATCC 9533	0.002	Confirms	Confirms
Acceptance	≤ 0.2	$6.2 \times 10^3 - 2.5 \times 10^4$ cells/cm ²	Shall not be less than 6.2×10^2 cells/cm ²

Results:

ANTIBACTERIAL ACTIVITY

1. Test Bacteria: Staphylococcus aureus ATCC 6538

Quantitative Assessment of Activity: JIS Z 2801: 2010; Amendment 1: 2012			Av. count	Log
Untreated Control: Inoculum on untreated sample at 0 hours (U_0) CFU/cm ²			18750	4.27
Untreated Control: Inoculum on untreated sample after 24 hours (U_t) CFU/cm ²			98125	4.99
Sample identification	No. Bacteria on treated sample CFU/cm ² (A_t)	Log of Bacteria on treated sample (A_t)	Antimicrobial Activity $R = (U_t - U_0) - (A_t - U_0)$	
High Pressure Laminate	<6.25	<0.80	>4.21 (>99.99%)	

2. Test Bacteria: Escherichia coli ATCC 8739

Quantitative Assessment of Activity: JIS Z 2801: 2010; Amendment 1: 2012			Av. count	Log
Untreated Control: Inoculum on untreated sample at 0 hours (U_0) CFU/cm ²			25000	4.40
Untreated Control: Inoculum on untreated sample after 24 hours (U_t) CFU/cm ²			241667	5.38
Sample identification	No. Bacteria on treated sample CFU/cm ² (A_t)	Log of Bacteria on treated sample (A_t)	Antimicrobial Activity $R = (U_t - U_0) - (A_t - U_0)$	
High Pressure Laminate	<6.25	<0.80	>4.61 (>99.99%)	

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- Samples are not drawn by the laboratory • Results relate only to the samples tested
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ANTIFUNGAL ACTIVITY

1. Test Fungus: Aspergillus niger ATCC 6275

Quantitative Assessment of Activity: JIS Z 2801: 2010; Amendment 1: 2012		Av. count	Log
Untreated Control: Inoculum on untreated sample at 0 hours (U_0) CFU/cm ²		4250	3.63
Untreated Control: Inoculum on untreated sample after 24 hours (U_t) CFU/cm ²		9625	3.98
Sample identification	Log of Fungi on treated sample CFU/cm ² (A_t)	Log of Fungi on treated sample (A_t)	Antimicrobial Activity $R = (U_t - U_0) - (A_t - U_0)$
High Pressure Laminate	2375	3.38	0.61 (75.32%)

2. Test Fungus: Candida albicans ATCC 10231

Quantitative Assessment of Activity: JIS Z 2801: 2010; Amendment 1: 2012		Av. count	Log
Untreated Control: Inoculum on untreated sample at 0 hours (U_0) CFU/cm ²		10813	4.03
Untreated Control: Inoculum on untreated sample after 24 hours (U_t) CFU/cm ²		94375	4.97
Sample identification	Log of Fungi on treated sample CFU/cm ² (A_t)	Log of Fungi on treated sample (A_t)	Antimicrobial Activity $R = (U_t - U_0) - (A_t - U_0)$
High Pressure Laminate	14375	4.16	0.82 (84.76%)

3. Trichophyton mentagrophytes ATCC 9533

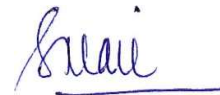
Quantitative Assessment of Activity: JIS Z 2801: 2010; Amendment 1: 2012		Av. count	Log
Untreated Control: Inoculum on untreated sample at 0 hours (U_0) CFU/cm ²		10750	4.03
Untreated Control: Inoculum on untreated sample after 24 hours (U_t) CFU/cm ²		22250	4.35
Sample identification	Log of Fungi on treated sample CFU/cm ² (A_t)	Log of Fungi on treated sample (A_t)	Antimicrobial Activity $R = (U_t - U_0) - (A_t - U_0)$
High Pressure Laminate	7813	3.89	0.45 (64.89%)

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

COMMENT:

When tested as specified, sample labeled as Laminate, **High Pressure Laminate; PASS** the Quantitative Assessment of activity for Staphylococcus aureus and Escherichia coli; **High Pressure Laminate; FAIL** the Quantitative Assessment of activity for Aspergillus niger, Candida albicans and Trichophyton mentagrophytes by **JIS Z 2801: 2010 Amendment 1: 2012 Test Method**.

For BIOTECH TESTING SERVICES



Dr Shilpa U. Nair
Quality Manager
(Authorized Signatory)