

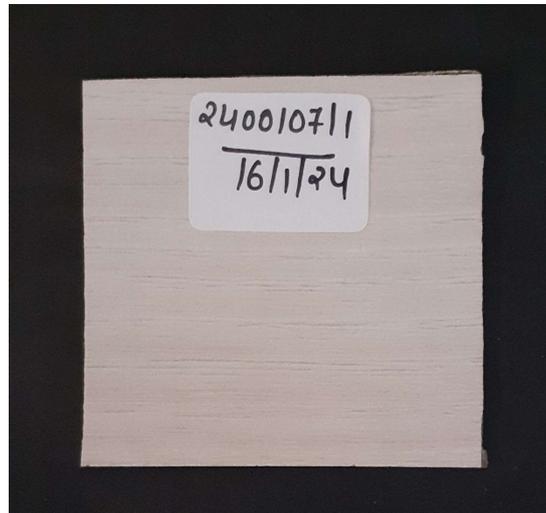
**TEST REPORT**

**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
<b>Acceptance</b>	≤ 0.2	6.2 × 10 <sup>3</sup> - 2.5 × 10 <sup>4</sup> cells/cm <sup>2</sup>	Shall not be less than 6.2 × 10 <sup>2</sup> cells/cm <sup>2</sup>

**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 <sub>0</sub> ) CFU/cm <sup>2</sup>		18750	4.27
Untreated Control: Inoculum on untreated sample after 24 hours (U <sub>t</sub> ) CFU/cm <sup>2</sup>		98125	4.99
Sample identification	No. Bacteria on treated sample CFU/cm <sup>2</sup> (A <sub>t</sub> )	Log of Bacteria on treated sample (A <sub>t</sub> )	Antimicrobial Activity R = (U <sub>t</sub> - U <sub>0</sub> ) - (A <sub>t</sub> - U <sub>0</sub> )
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 <sub>0</sub> ) CFU/cm <sup>2</sup>		25000	4.40
Untreated Control: Inoculum on untreated sample after 24 hours (U <sub>t</sub> ) CFU/cm <sup>2</sup>		241667	5.38
Sample identification	No. Bacteria on treated sample CFU/cm <sup>2</sup> (A <sub>t</sub> )	Log of Bacteria on treated sample (A <sub>t</sub> )	Antimicrobial Activity R = (U <sub>t</sub> - U <sub>0</sub> ) - (A <sub>t</sub> - U <sub>0</sub> )
High Pressure Laminate	<6.25	<0.80	>4.61 (>99.99%)

**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 <sup>2</sup>		4250	3.63
Untreated Control: Inoculum on untreated sample after 24 hours ( $U_t$ ) CFU/cm <sup>2</sup>		9625	3.98
Sample identification	Log of Fungi on treated sample CFU/cm <sup>2</sup> ( $A_t$ )	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	<b>0.61 (75.32%)</b>

**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 <sup>2</sup>		10813	4.03
Untreated Control: Inoculum on untreated sample after 24 hours ( $U_t$ ) CFU/cm <sup>2</sup>		94375	4.97
Sample identification	Log of Fungi on treated sample CFU/cm <sup>2</sup> ( $A_t$ )	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	<b>0.82 (84.76%)</b>

**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 <sup>2</sup>		10750	4.03
Untreated Control: Inoculum on untreated sample after 24 hours ( $U_t$ ) CFU/cm <sup>2</sup>		22250	4.35
Sample identification	Log of Fungi on treated sample CFU/cm <sup>2</sup> ( $A_t$ )	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	<b>0.45 (64.89%)</b>

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



## BIOTECH TESTING SERVICES

### 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)

2400107/1  
Page 5 of 5

- Samples are not drawn by the laboratory • Results relate only to the samples tested
- This report shall not be reproduced except in full without prior permission of this laboratory