



BIOTECH TESTING SERVICES LLP

TEST REPORT

REPORT NO. : BTS2500663-01

DATE : 03-04-2025

NAME OF CUSTOMER : RUSHIL DECOR LIMITED
ADDRESS : S. NO 125
Near kalyanpura Patia, Village ITLA Gandhinagar- Mansa Road, Ta Kalol
Gandhinagar-38285
Gujarat, INDIA
REFERENCE : Reference Letter No. Nil dated March 03, 2025
Kind Attention: Dhaval
DATE OF RECEIPT : 05-03-2025
DATE OF INITIATION : 05-03-2025
DATE OF COMPLETION : 15-03-2025
SAMPLE DESCRIPTION : Test sample labeled as

Sample No.	Sample Details
2500663/S01	Sample-1
	<i>Description</i> <i>Laminate sample</i>
Untreated Lab Control	

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Name of Test :

ISO 21702: 2019*

Measurement of Antiviral activity on plastics and other non-porous surfaces and coating materials

Scope of Method:

This test specifies a method for measuring antiviral activity on plastic and other non-porous surface of antiviral-treated products against specified virus. Due to individual sensitivities, the results of one test virus might not be applicable for other viruses.

Test Procedure:

Pre-sterilized samples were loaded with diluted viral suspension to 10^6 PFU/ ml. Virus suspension 0.4 ml was added to 50 mm x 50 mm of Test substrate. It was covered with 40 mm x 40 mm LDPE film. Following exposure time, Virus was eluted and neutralized by serial tenfold dilution and assayed to determined surviving Viruses in comparison with Control without test product in sq. cms. The virus assay was quantitative as Plaque forming unit (PFU) visible as area of Clearance.

Test Microorganism Information:

MS2 Bacteriophage (MS2) is an RNA virus of the family Leviviridae. Escherichia coli 15597 are the hosts for bacteriophages. Due to its environmental resistance, MS2 bacteriophages are used as a surrogate virus (particularly in place of Picornaviruses such as Poliovirus and human Norovirus) in water quality and antimicrobial studies.

Virus: MS2 Bacteriophage

Permissive Host Cell: Escherichia coli ATCC 15597

Disclaimer:

Bacteriophages are viruses of Bacteria. They are suitable only as a Preliminary screen in the development of germicidal product. Due to variation in virus antigen, for specific virucidal claims, tests should be conducted specifically with that virus.

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Email: lab@biotechtestingservices.com / accounts@biotechtestingservices.com / biotechtestingservices@gmail.com



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Experimental Conditions

Test Carrier	: Test Sample (50 mm x 50 mm); Pre-sterilized by ETO gas
Control Carrier	: Sample non coated and sterilized by autoclaving (50 mm x 50 mm)
LDPE cover	: LDPE film pre sterilized 40 mm x 40 mm
Virus	: MS2 Bacteriophage; Inoculum volume 0.4 ml
Permissive Host Cell	: Escherichia coli ATCC 15597
Contact Period	: 2 hours and 24 hours
Neutralizer	: DE broth
Medium	: Trypticase soya agar
Incubation for survivors	: 37°C for 3 days

Validation and Records:

Neutralizer Validation and Records:

Validation Test			
Test Organism	Experimental Condition Control (A) (PFU/ml)	Neutralizer Toxicity Control (B) (PFU/ml)	Dilution-neutralization Control (C) (PFU/ml)
MS2 Bacteriophage	40	42	44

Where –

A=No. of PFU/ml of Test organism in Experimental condition validation

B=No. of PFU/ml of Test organism in Neutralizer Toxicity validation

C=No. of PFU/ml of Test organism in Dilution Neutralization validation



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Results:

Antiviral activity at 2 hours

Quantitative Assessment of Antiviral Activity –ISO 21702: 2019			Av. Count	Log
Untreated Lab Control : Average No. of plaques recovered at 0 hrs (U_0) PFU/cm ²			6.20 x 10 ⁴	4.79
Untreated Lab Control : Average No. of plaques recovered at 2 hrs (U_t) PFU/cm ²			7.10 x 10 ⁴	5.02
Sample Identification	Average No. of Plaques recovered from Treated (A_t) PFU/cm ²	Log of Plaques recovered from Treated (A_t)	Antiviral Activity (R) (Log $U_t - A_t$)	Virus Percentage Reduction %
2500663/S01 Sample-1	520	2.71	2.14	99.26

Antiviral activity at 24 hours

Quantitative Assessment of Antiviral Activity –ISO 21702: 2019			Av. Count	Log
Untreated Lab Control : Average No. of plaques recovered at 0 hrs (U_0) PFU/cm ²			6.20 x 10 ⁴	4.79
Untreated Lab Control : Average No. of plaques recovered at 24 hrs (U_t) PFU/cm ²			7.10 x 10 ⁴	4.85
Sample Identification	Average No. of Plaques recovered from Treated (A_t) PFU/cm ²	Log of Plaques recovered from Treated (A_t)	Antiviral Activity (R) (Log $U_t - A_t$)	Virus Percentage Reduction %
2500663/S01 Sample-1	<10	<1	>4.02	>99.99

Where:

R = Antiviral activity

U_0 = Log of PFU recovered from Untreated specimen immediately after inoculation, in PFU/ cm²

U_t = Log of PFU recovered from Untreated specimen after 2/24 hrs. after inoculation, in PFU/ cm²

A_t = Log of PFU recovered from Treated specimen after 2/24 hrs. after inoculation, in PFU/cm²

***** End of Report *****



For Biotech Testing Services LLP

Dr. Shilpa U Nair
Quality Manager

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Annexure



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