

# TEST REPORT

Discipline: Chemical

Group: Paint & surface coating

<u>S.No.</u>	<u>Test parameters</u>	<u>Observed results</u>	<u>Test method</u>
1	Volatile organic compound (VOC), % by mass	0.98	IS : 101 (P-2/SEC 3 )
2	Lead (as Pb), ppm	< 0.10	By ICP -OES
3	Cadmium (as Cd), ppm	< 0.10	By ICP -OES
4	Mercury (as Hg), ppm	< 0.10	By ICP -OES
5	Chromium (as Cr <sup>+6</sup> ), ppm	< 0.10	ISO : 3856 ( P-5)

-- End of Test Report --



Analyst Signature



Authorised Signatory

Spectro Analytical Labs Pvt. Ltd. S-1, GNEPIP, Surajpur Industrial Area, Phase-V, Kasna, Greater Noida-201308 (India)

Phone : +91-120-2341252,2341251 || URL : [www.spectro.in](http://www.spectro.in) || Email: [care@spectro.in](mailto:care@spectro.in)

BIS & DDA Approved, ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 Certified Laboratory

**Results:**

**ANTIBACTERIAL ACTIVITY**

1. Test Bacteria: Staphylococcus aureus ATCC 6538

Quantitative Assessment of Activity - JIS Z 2801: 2010; Amendment 1: 2012				
Untreated lab control: Conc. of Inoculum on untreated sample at 0 hours (A): $9.00 \times 10^4$				Log = 4.95
Untreated lab control: Conc. of Inoculum on untreated sample after 24 hour (B): $7.90 \times 10^5$				Log = 5.89
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
TREATED GANZKUHL® COATING	<10	<1	>4.89	>99.99
UNTREATED GANZKUHL® COATING	27000	4.43	1.46	96.58

2. Test Bacteria: Escherichia coli ATCC 8739

Quantitative Assessment of Activity - JIS Z 2801: 2010; Amendment 1: 2012				
Untreated lab control: Conc. of Inoculum on untreated sample at 0 hours (A): $9.80 \times 10^4$				Log = 4.99
Untreated lab control: Conc. of Inoculum on untreated sample after 24 hour (B): $1.46 \times 10^6$				Log = 6.16
Sample Identification	No. Bacteria on treated sample (C)	Log of Bacteria on treated sample	Antimicrobial Activity (R) (Log B-C)	Microbial Kill (% Reduction)
TREATED GANZKUHL® COATING	7900	3.89	2.27	99.45
UNTREATED GANZKUHL® COATING	84000	4.92	1.24	94.24

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

**COMMENT:**

When tested as specified, sample labeled as **TREATED GANZKUHL® COATING**; **PASSES** the Quantitative Assessment of activity; **UNTREATED GANZKUHL® COATING**; **FAILS** the Quantitative Assessment of activity for Staphylococcus aureus and Escherichia coli by JIS Z 2801: 2010; Amendment 1: 2012 Test Method.

For BIOTECH TESTING SERVICES



*Shilpa*

Dr Shilpa U. Nair  
Quality Manager  
(Authorized Signatory)

2202060/1 - 2  
Page 2 of 2

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

ULR-TC70202200000055F

Report No: CRDF/RPT/SRI/669

Report Date: 21<sup>st</sup> June 2022

**4 Results of the measurement:**

**Solar Direct Reflectance**

Sample name	Sample ID	Measurement 1	Measurement 2	Measurement 3	Average
GANZKUHL® Coating	SRI/06/22/1670	0.8009	0.8012	0.7959	0.7993

**Emissivity**

Sample name	Sample ID	Measurement 1	Measurement 2	Measurement 3	Average
GANZKUHL® Coating	SRI/06/22/1670	0.931	0.930	0.930	0.930

**Solar Reflectance Index (SRI) under different wind conditions**

Sample name	Sample ID	Solar Reflectance Index (SRI)		
		Low Wind( $h_c=5 \text{ W m}^{-2} \text{ K}^{-1}$ )	Medium Wind( $h_c=12 \text{ W m}^{-2} \text{ K}^{-1}$ )	High Wind( $h_c=30 \text{ W m}^{-2} \text{ K}^{-1}$ )
GANZKUHL® Coating	SRI/06/22/1670	101	100	100

**Surface Temperature ( $T_s$ ) under different wind conditions**

Sample name	Sample ID	Surface Temperature ( $^{\circ}\text{C}$ )		
		Low Wind( $h_c=5 \text{ W m}^{-2} \text{ K}^{-1}$ )	Medium Wind( $h_c=12 \text{ W m}^{-2} \text{ K}^{-1}$ )	High Wind( $h_c=30 \text{ W m}^{-2} \text{ K}^{-1}$ )
GANZKUHL® Coating	SRI/06/22/1670	48.9	44.5	40.7

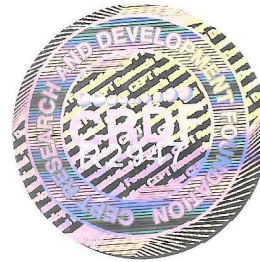
Remark, if Any:

**5 Certificate of Accuracy:**

This is to certify that the test results herein presented are, to the best of my knowledge, true and accurate representations of the samples submitted.

*N. D. Bhesaniya*  
Analyzed By:  
Nikhil Bhesaniya  
Lab. Technician

*Yashkumar Shukla*  
Reviewed By:  
Yashkumar Shukla  
Technical Director



*Yashkumar Shukla*  
Authorized By:  
Yashkumar Shukla  
Technical Director

**Disclaimer:**

1. The CEPT Research & Development Foundation is not responsible for any kind of alterations in the physical property of the sample and the customer is solely responsible for it and its consequences.
2. The test results and the statement of compliance with specification in this report relate only to the test sample as tested and not to the sample/item from which the test sample was drawn. Sample will be destroyed after 7 days of issue of the report unless specified by the customer.
3. Any complains about this report should be communicated in writing within 7 days of issue of the report.
4. The test report shall not be reproduced fully or partially or in parts and cannot be used as an evidence in a court of law and shall be used in advertising media without written approval of Director, CEPT Research & Development Foundation.

**Test Procedure:**

1. Spores of *A. niger* & *P. funiculosum* was mixed together and *A. pullulans* was used separately.
2. Sample was placed in the centre of the plate and a thin coating of fungal suspension was applied by spraying onto the surface of the sample and the agar plate.
3. Plates were incubated at 28°C under ≥ 85% RH for 4 weeks.
4. Plates were examined weekly for fungal growth.
5. Fungal growth on sample was rated based on following evaluation criteria.

**Observed growth on Specimen:**

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

**Results:**

Sample Description	Test Fungus	Observations							
		1 week		2 weeks		3 weeks		4 weeks	
		Zone of Inhibition	Rating	Zone of Inhibition	Rating	Zone of Inhibition	Rating	Zone of Inhibition	Rating
<b>TREATED GANZKUHL® COATING</b>	Mixed Spores	No zone	0	No zone	0	No zone	0	No zone	0
	Spores of <i>A. pullulans</i>	No zone	0	No zone	0	No zone	0	No zone	0
Whatman Filter paper - Viability control	Mixed Spores	No zone	4	No zone	4	No zone	4	No zone	4
	Spores of <i>A. pullulans</i>	No zone	3	No zone	4	No zone	4	No zone	4

**INTERPRETATION:**

Sample labeled as **TREATED GANZKUHL® COATING** is **Resistant to Fungus attack** when tested as per **ASTM: 5590: 2017** test methods.

For BIOTECH TESTING SERVICES



*Shilpa*  
 Dr Shilpa U. Nair  
 Quality Manager  
 (Authorized Signatory)

2202060/1  
 Page 2 of 2

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

**Rating:**

Microscopic assessments were made at 4 weeks using Rating scale. Panels were rated for Mold growth each week for 4 weeks on a 0 to 10 rating scale by estimating the percentage of surface defacement with 10 being No defacement and 0 being complete defaced. Both Test and Non Test fungi were included in rating.

**Key:**

Results	Rating
0 Defacement	10
1 to 10% Defacement	9
11 to 20% Defacement	8
21 to 30% Defacement	7
31 to 40% Defacement	6
41 to 50% Defacement	5
51 to 60% Defacement	4
61 to 70% Defacement	3
71 to 80% Defacement	2
81 to 90% Defacement	1
91 to 100% Defacement	0

**Results:**

At the end of 4 weeks Incubation period, following observations were recorded:-

Specimen	Growth Rating	
	Set I	Set II
TREATED GANZKUHL® COATING	10	10
Untreated Lab. Control	02	01

For BIOTECH TESTING SERVICES



*Shilpa*  
 Dr Shilpa U. Nair  
 Quality Manager  
 (Authorized Signatory)

2202060/1  
 Page 3 of 3

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