

**Testing Laboratory**CEG Tower, 1<sup>st</sup> & 2<sup>nd</sup> Floor, B-11G, Industrial Area,

Malviya Nagar, Jaipur, Rajasthan – 302017: India

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**TEST REPORT**

Doc.No. ISSPL/QP/13/F-06

Report No.: ISSPL/GA/22-23/02921

Date: 03/11/2022

|    |                                      |                                                                                                                                                                           |
|----|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Name & Address of Customer           | <b>ZEN POULTRY AND FARMING HVAC EQUIPMENT</b><br>Rudraksha Building A.R. Construction, Office No. 3, Plot No. 53A, Karanjade,<br>Dist. Raigad, Sector-3, Panvel - 410206. |
| 2. | Reference No.                        | Your Letter Dated: 29.10.2022 & TRF Dated: 29.10.2022 (Reg. No. 96079)                                                                                                    |
| 3. | Material Identification with Details | Evaporative Cooling Pad: Qty. 1 no.                                                                                                                                       |
| 4. | Source / Location                    | -                                                                                                                                                                         |
| 5. | Sampled by /Condition of Sample      | Customer/ OK                                                                                                                                                              |
| 6. | Date of Sample Receipt               | 29/10/2022                                                                                                                                                                |
| 7. | Date of Sample Registration          | 29/10/2022                                                                                                                                                                |
| 8. | Date of sample Testing               | 29/10/2022 to 03/11/2022                                                                                                                                                  |
| 9. | Environmental Conditions:            | Temperature (°C): NA      Relative Humidity (%): NA                                                                                                                       |

**TEST RESULT**

Test Method: ISO 22196: 2011

Dilution Medium Used: Soyabean Casein Digest Broth with Lecithin

Contact Time : 24 hrs

Test Organisms Used:

1. Escherichia coli ATCC 8739 ( $1.6 \times 10^6$  CFU/ml)
2. Staphylococcus aureus ATCC 6538 ( $1.8 \times 10^6$  CFU/ml)
3. Klebsiella aerogenes ATCC 13048 ( $1.4 \times 10^6$  CFU/ml)

**Results:**

Honeycomb Pad (Non-Treated and Treated Sample) contact with specified bacterial suspension for 24 hrs.

Antibacterial Activity as per ISO 22196: 2011

| Sample Discription      | Gram Negative<br><i>Escherichia coli</i> | Gram Negative<br><i>Klebsiella aerogenes</i> | Gram Positive<br><i>Staphylococcus aureus</i> | Gram Negative<br><i>Salmonella typhimurium</i> |
|-------------------------|------------------------------------------|----------------------------------------------|-----------------------------------------------|------------------------------------------------|
| Honeycomb (Non-Treated) | 0% Reduction                             | 0% Reduction                                 | 0% Reduction                                  | 0% Reduction                                   |
| Honey Comb (Treated)    | 99% Reduction                            | 99% Reduction                                | 99% Reduction                                 | 99% Reduction                                  |

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Reviewed by

  
Rajendra Prasad  
(Dy. Manager-Biology Lab)  
Authorized Signatory**Note:**

- Total liability of this laboratory is limited to the invoiced amount.
- The results listed refer only to the tested sample and applicable parameters. Endorsement of Product is neither inferred nor implied.
- This Test Report shall not be reproduced wholly or in part and cannot be used as an evidence in the court of law without written approval of ISSPL, Jaipur
- From the date of issue of test report, the sample shall be stored, for 1 month in case of non perishable items, upto 1 year for pharma sample, unless otherwise specified in applicable standards/regulatory requirement.
- Sample(s) not drawn by ISSPL, Jaipur, unless specified in the report. **Sample tested at ISSPL, Jaipur.**

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**Calculation of Antimicrobial Activity:** This is the difference in the logarithm of the viable cell count on an antimicrobial treated product and a control culture after inoculation with and incubation of the bacteria, the following equation is used

$$R = (U_t - U_o) - (A_t - U_o) = U_t - A_t$$

Where R= Antimicrobial Activity

$U_o$  = Average of the common logarithm of number of viable bacteria, recovered from the untreated test specimen immediately after incubation.

$U_t$  = Average of the common logarithm of number of viable bacteria, recovered from the untreated test specimen after 24 h.

$A_t$  = Average of the common logarithm of number of viable bacteria, recovered from the treated test specimen after 24 h.

**TEST RESULT****Antimicrobial Activity Percent of compared to control Comment**

|            |              |            |
|------------|--------------|------------|
| <1.5       | <96.8        | Poor       |
| 1.5 to 2.0 | 96.8 to 99.0 | Borderline |
| 2.0 to 3.0 | 99.0 to 99.9 | Good       |
| >3.0       | >99.9        | Excellent  |

**INTERPRETATION:** Sample shows the antimicrobial activity against *Escherichia coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus* and *Salmonella typhi* when tested as per the ISO 22196: 2011.

**Conclusion :** Sample Passes the quantitative assesment of antimicrobial activity as per ISO 22196: 2011 Test Method

**REMARK:** 1.CFU- Colony Forming Unit

**\*\*End of the Report\*\***

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