

Date: 05/05/2021

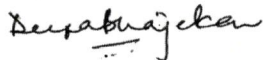
CERTIFICATE

This is to certify that “Virokill Air Ionisor” manufactured by “CONTROLS & SYSTEMS” when tested for antiviral activity based on the method ASTM E1053-20 using MS2 Bacteriophage, a surrogate for SARS-CoV-2 (COVID-19), when kept at a distance of 5 feet from the test surface, over a exposure time of 12 hours, demonstrated a percentage kill of 98.55 and a log reduction of 1.8373.

The test was conducted on the sample as per the protocol detailed in the test report, in a single procedure, at a temperature of $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

This test report is valid for the specified product tested at the time of study; under the stated environmental conditions for the product “Virokill Air Ionisor” vide our test report number dtech/21-22/10006.

For d technology Private Limited



Authorized Signatory / Technical Head
Name: Dr. Deepa Bhajekar

ELIMINATION OF CONTAMINANTS

Seafood

Spices

Dairy

Agricultural

Commodities

Water

Other commodities

BIOTECHNOLOGICAL SOLUTIONS

NEW TECHNOLOGY -

Research and
Development



d technology Pvt. Ltd.

Unit No-19, Building No-F-8, Bhumi World Industrial Park, Opp. Tata Amantra,
Pimplas, Mumbai-Nashik Highway, Thane-421302

ANTIVIRAL STUDY REPORT USING *MS2 BACTERIOPHAGE* AS A SURROGATE VIRUS

Report No: dtech/21-22/10006

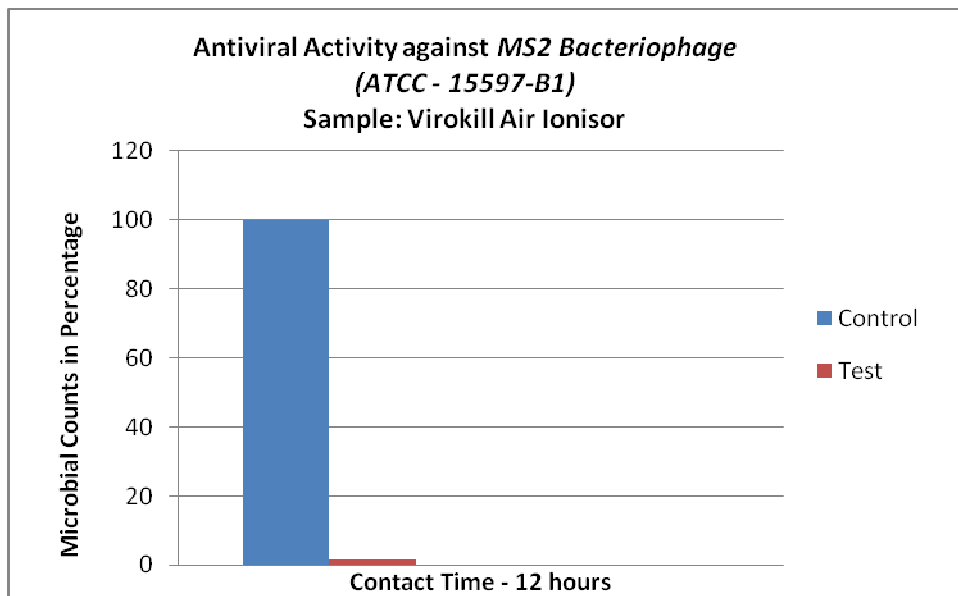
Date of Report: 05.05.2021

Customer Name: **Controls & Systems**
Unit 114-115, Amar Industrial Estate,
Nr. Shani Mandir, MIDC Phase2,
Dombivli East-421203

Prepared By: Dr. Deepa Bhajekar
Managing Director
d technology Pvt. Ltd.

TEST INFORMATION	
Objective	To study antiviral activity of sample using <i>MS2 Bacteriophage ATCC-15597-B1</i> (as a surrogate virus) with <i>E.coli</i> as a host culture
Test Method	Based on ASTM E1053 - 20 Standard test method for assessing virucidal activity of chemicals intended for disinfection of inanimate, nonporous environmental surfaces
Test Method Brief	The virus suspension (<i>MS2 Bacteriophage</i>) is inoculated on an inanimate, nonporous surface. The air ionizer is placed at a distance of 5 feet from the test surface. After a specified exposure time the surface is swabbed and the virucidal activity is monitored and quantified following a period of incubation. The virucidal activity is compared to that of an unexposed surface inoculated with virus suspension (<i>MS2 Bacteriophage</i>) and swabbed to determine the total reduction.
Test Sample	Virokill Air Ionisor
Batch Number & Expiry Date	-
Date of Receipt of Sample	03.05.2021
Period of Analysis	03.05.2021 – 05.05.2021
Manufacturer / Supplier	-
Storage Conditions	NA
Appearance of the Product	NA
Neutralisation Method	Dilution
Surface	Wooden laminate
Distance of the surface from Air Ionisor	5 feet
Test Temperature	25°C ± 1°C
Temperature of Incubation	36°C ± 1°C
Test Organism Strain	<i>MS2 Bacteriophage ATCC-15597-B1</i>
Exposure Time	12 hours

SAMPLE - VIROKILL AIR IONISOR				
Test Organism	Particulars	Microbial Counts	Test-1	
MS2 Bacteriophage (ATCC-15597-B1)	CONTROL – Test organism <i>(MS2 Bacteriophage)</i>	Counts in pfu/ml	3.3 x 10 ⁶	
		Log Values	6.5185	
	TEST – Test organism <i>(MS2 Bacteriophage)</i> + Test sample	Counts in pfu/ml	4.8 x 10 ⁴	
		Log Values	4.6812	
	Log Reduction			1.8373
	Percentage Reduction			98.5455



Inference:

Efficacy against MS2 Bacteriophage (ATCC-15597): Sample Virokill Air Ionisor

The Air Ionisor kept at a distance of 5 feet from nonporous wooden laminate surface inoculated with MS2 bacteriophage, post exposure time of 12 hours gave a 1.8373 log reduction (98.5455%) in bacteriophage counts.

Authorized Signatory

Name: Dr. Deepa Bhajekar

Designation: Managing Director



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Note:

1. The results reported relate only to the sample(s) tested.
2. This test report, in full or in part, shall not be reproduced, used for any legal action, without prior written approval of laboratory.
3. The tests marked with #are subcontracted.
4. The Report no. with suffix R- Revised Report.

END OF REPORT