intertek
Total Quality. Assured.

CLEANCAIRE LLC

EFFICACY TEST REPORT

SCOPE OF WORK
Non-standardized Test Method: Microbial Reduction Rate Test

PRODUCT – Klearzone Technology

MODEL – KZ

REPORT NUMBER
104398790COL-001

ISSUE DATE **Revision Date**
9-28-2020 10-01-2020

PAGES 8

DOCUMENT CONTROL NUMBER
GFT-OP-10h (6-July-2017)

MICROBIOLOGICAL PERFORMANCE TEST REPORT

SECTION 1 EFFICACY STUDY SUMMARY

Client		CleancAIRe LLC 1122 West Bethel Street Coppell, TX 75019 USA
Project No.		G104398790
Sample	Product	Air Purification Device
	Model	Klearzone
Procedural	Engineer	Amanda Mastronicolas
	Reviewer	Lee Moomaw
	Dates Tested	09/23/20 – 09/25/20
	Report Date	09/29/20
Standard	Non-standardized Test Method: Microbial Reduction Rate Test	
Testing Facility	Intertek Microbiological Laboratory 1717 Arlingate Ln. Columbus, OH 43228 United States	

SECTION 2 TEST PROCEDURE

The test chamber measured 10'x10'x10' (1000 cubic ft) room and a microbial suspension was aspirated into the chamber. Air samples were taken from the test chamber once the unit was turned on and sampling was taken every 15 minutes over a period of 2 hours and then plated. The process was then repeated without the test unit in the chamber to provide the natural decay results. All plates were incubated overnight and viral growth on the test plate was compared to that of the natural decay control.

Air sampling took place using an SKC BioStage Single-stage impactor for 30 seconds at 12L/min (.424 cubic feet/min). Results below represent the percent reduction at 120 minutes.

MICROBIOLOGICAL PERFORMANCE TEST REPORT

SECTION 3 ORGANISMS

Organism Name	Organism Type	ATCC Number	Source
Phi X174 bacteriophage	small, non-enveloped virus	13706-B1	Carolina Bioscience
Aspergillus niger	mold spore	6275	ATCC
Escherichia coli	Bacteria	11229	ATCC
Penicillium citrinum	Fungus	9849	ATCC

SECTION 3 EQUIPMENT

Equipment Type	Equipment No.	Calibration Due Date
Micropipette	CE 2587	6/12/2021
Incubator	CE 2381	7/7/2021
Incubator	CE2427	7/7/2021
Balance	CE 1882	7/7/2021
Autoclave	CE 2376	Verify Before Use
Centrifuge	CE 2382	For Reference Only
Chamber	CE 1149	For Reference Only
Collision Nebulizer	CE 1139	For Reference Only
Refrigerator	CE 1157	For Reference Only
Pump	CE 1137	For Reference Only
Stopwatch	SW015	10/22/2020
Ambient Temperature/RH	CE 1179	For Reference Only

SECTION 4 MEDIA AND REAGENTS

Type	Manufacturer	Lot No	Expiration Date
Nutrient Agar	DIFCO	9346039	10/31/2024
Potato Dextros Agar	DIFCO	9311217	10/31/2024
PBS	Fisher	192736	08/01/2022

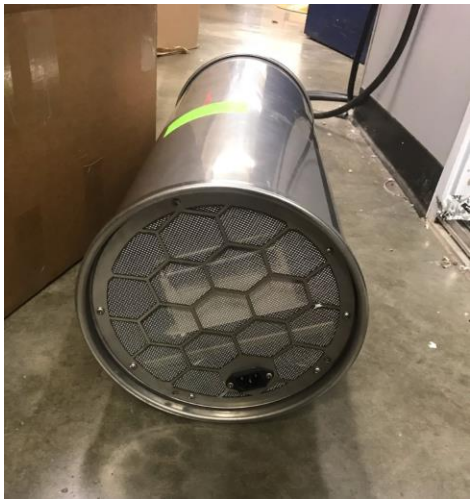
MICROBIOLOGICAL PERFORMANCE TEST REPORT

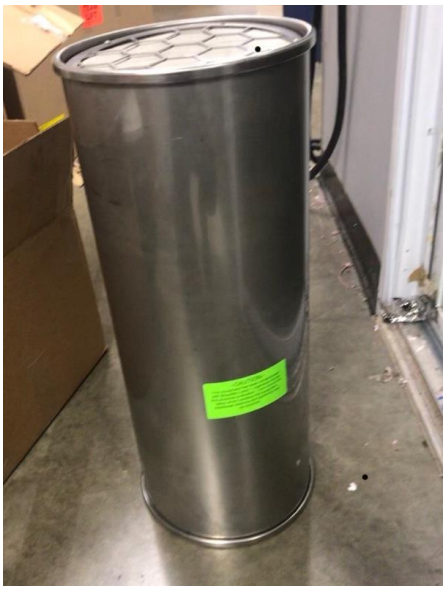
SECTION 5 SAMPLE ACQUISITION

Acquisition method	Shipped to Intertek
Description	Air Purification Device
Model Number	KZ2441
Arrival date	09-23-2020
Condition	New
Sample Identification No.	COL1702081505-001
Development Level	Production

SECTION 6SUMMARY OF RESULTS

Fan Speed	Optional Features
Max	N/A





MICROBIOLOGICAL PERFORMANCE TEST REPORT

Organism Type	Virus	Mold	Fungus	Bacteria
Temperature Min/Max	21°C (69°F) / 20°C (68°F)		21°C (69°F)	21°C (69°F)
Humidity Min/Max	42 % RH / 45 % RH		47%RH	50%RH
Organism Name	*Phi-X174*	*A. niger*	*P. citrinum*	*E. coli*
Percent Reduction	99.9%	99.5%	98.4%	99.9%

Revision Table

Date / Project Number	Engineer / Reviewer	Pages	Description of Change
September 30, 2020 G104398790	A.Mastronicola s / L.Moomaw	All	• Updated product description from air purifier to Air Purification Device • Updated model from PCF N-14 To KZ • Updated model number from PCF N-14 to KZ2441

Annex A Test Results:

Test Parameter		Test Result	Natural Decay Result	Units
Organism	Species	*Coliphage φX174*		---
	ATCC No.	13706-B1		---
	Challenge Concentration	5.0×10^9		PFU/mL
Samples (15min.)	0	TNTC (2628)	TNTC (2628)	PFU
	15	66	TNTC (2628)	PFU
	30	40	TNTC (2628)	PFU
	45	14	TNTC (2628)	PFU
	60	10	TNTC (2628)	PFU
	75	5	TNTC (2628)	PFU
	90	1	TNTC (2628)	PFU
	105	2	TNTC (2628)	PFU
	120	2	TNTC (2628)	PFU
Results	--	99.9%		Reduction

MICROBIOLOGICAL PERFORMANCE TEST REPORT

Test Parameter		Test Result	Natural Decay Result	Units
Organism	Species	*A.niger*		---
	ATCC No.	6275		---
	Challenge Concentration	1.0×10^7		CFU/mL
Samples (15min.)	0	TNTC (2628)	TNTC (2628)	CFU
	15	67	TNTC (2628)	CFU
	30	40	TNTC (2628)	CFU
	45	31	TNTC (2628)	CFU
	60	24	TNTC (2628)	CFU
	75	17	TNTC (2628)	CFU
	90	16	TNTC (2628)	CFU
	105	9	TNTC (2628)	CFU
	120	11	TNTC (2628)	CFU
Results	--	99.5%		Reduction

Test Parameter		Test Result	Natural Decay Result	Units
Organism	Species	*P.citrinum*		---
	ATCC No.	9849		---
	Challenge Concentration	5.0×10^7		CFU/mL
Samples (15min.)	0	TNTC (2628)	TNTC (2628)	CFU
	15	TNTC	TNTC (2628)	CFU
	30	90	TNTC (2628)	CFU
	45	72	TNTC (2628)	CFU
	60	51	TNTC (2628)	CFU
	75	50	TNTC (2628)	CFU
	90	53	TNTC (2628)	CFU
	105	46	TNTC (2628)	CFU
	120	42	TNTC (2628)	CFU
Results	--	98.4%		Reduction

MICROBIOLOGICAL PERFORMANCE TEST REPORT

Test Parameter		Test Result	Natural Decay Result	Units
Organism	Species	*E.coli*		---
	ATCC No.	11229		---
	Challenge Concentration	8.8×10^8		CFU/mL
Samples (15min.)	0	TNTC (2628)	TNTC (2628)	CFU
	15	112	TNTC (2628)	CFU
	30	73	TNTC (2628)	CFU
	45	20	TNTC (2628)	CFU
	60	19	TNTC (2628)	CFU
	75	7	TNTC (2628)	CFU
	90	0	TNTC (2628)	CFU
	105	0	TNTC (2628)	CFU
	120	0	TNTC (2628)	CFU
Results	--	99.9%		Reduction

MICROBIOLOGICAL PERFORMANCE TEST REPORT

Annex B: Incubation Data