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TESTING
CNAS L0823

202019001121

广州市微生物研究所

GUANG ZHOU INSTITUTE OF MICROBIOLOGY

检测报告

TEST REPORT

Report Number	KJ20192583
Name of Sample	Pet deodorizer box
Applicant	Dongguan YX Pet Electronic Technology Co., Ltd.

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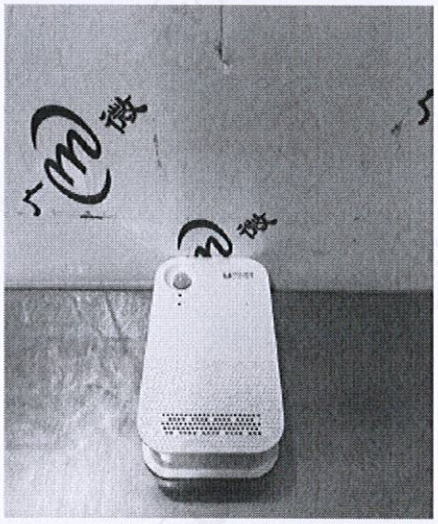
TEST REPORT

Date Received: Nov. 20, 2019
Date Analyzed: Nov. 26, 2019

Name of Sample	Pet deodorizer box	Source of Sample	Delivery
Applicant	Dongguan YX Pet Electronic Technology Co., Ltd.	Client	Hou Chao
Manufacturer	Dongguan YX Pet Electronic Technology Co., Ltd.	Brand	——
Type and Specification	YPD-X001	Quantity of Sample	1Set (2 PCS)
Date of Production	——	State of Sample	Machine
Batch Number	——	Packing of Sample	In box
Sample Picture			
Standard and Methods	1. GB/T 18801-2015 Air cleaner 2. GB/T 18204.2-2014 Examination methods for public places-Part 2: Chemical pollutants 8.1 Indophenol blue spectrophotometry 3. GB 11742-1989 Standard method for hygienic examination of hydrogen sulfide in air of residential areas-Methylene blue spectrophoto metric method 4. <Technical Standard For Disinfection>2002-2.1.3 Air disinfection effect evaluation test		
Items of Analysis	1. *Removal Rate (Ammonia, Hydrogen Sulfide) 2. Laboratory Test (*Staphylococcus albus* 8032)		
Remarks	This test report is the English additional edition of KJ20192583 issued on December 04, 2019.		

To be continued

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Method for testing gaseous pollutant removal:

1. Test Conditions
   1) Environment temperature: (25±2) ℃
   2) Environment humidity: (50±10) %RH.
2. Test Equipment
   Test chamber (1 m^3), constant current atmospheric sampler, UV-VIS spectrophotometer.
3. Operation Conditions of the Machine
   Set the switch to position "The highest gear".
4. Test Procedure
   1) Place the air cleaner to be tested in the chamber according to the requirements of standard and set the air cleaner controls to the conditions for test. Test for proper operation, then shut off with switch external to test chamber.
   2) Using the chamber HEPA filter, allow the test chamber air to clean until the background pollutants reaches a level. Simultaneously operate the environment control devices until the room conditions (temperature and RH) reach a specified state. Turn off the chamber environmental control system (HEPA filter and humidifiers).
   3) A certain amount of gaseous pollutant is added into the chamber using the gaseous pollutant generator. After the initial concentration reaches the requirements of standards, close the generator.
   4) Mix the gaseous pollutant for 10 min, then turn off ceiling mixing fan.
   5) Wait for fan to stop, the initial concentration of sample is gathered.
   6) Turn on air cleaner. The sample is collected after 60 min.
   7) According to the step 1) ~ 6), turn off air cleaner, test the natural decay.
5. Computational formula

Natural decay rate $N_t'(\%)=\frac{C_0'-C_t'}{C_0'}\times 100$

Where: C_0' = the original concentration of control group; C_t' = the final concentration of control group

Total decay rate $N_t(\%)=\frac{C_0-C_t}{C_0}\times 100$

Where: C_0 = the original concentration of test group; C_t = the final concentration of test group

Removal rate $K_t(\%)=\frac{C_0\times(1-N_t')-C_t}{C_0\times(1-N_t')}\times 100$

Test Results

Number of Sample	Pollutant	Test Time (min)	Control group		Test group		Removal rate
			Concentration C' (mg/m^3)	Natural decay rate N_t' (%)	Concentration C (mg/m^3)	Total decay rate N_t (%)	K_t (%)
KJ20192583-1	Ammonia	0	2.13	——	2.07	——	——
		60	2.04	4.2	1.18	43.0	40.5
	Hydrogen Sulfide	0	1.09	——	1.05	——	——
		60	1.04	4.6	0.68	35.2	32.1

To be continued

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Method for Testing Air Disinfection (Laboratory Test):

1. Test Equipments
   1) Test microorganism: *Staphylococcus albus*
   2) Microbial aerosol generator: TK-3
   3) Culture media: NA
   4) Sampling equipment: Liquid impingement sampler
2. Test Conditions
   1) The volume of the test chamber:1 m^3
   2) Environment temperature: (20~25) ℃
   3) Environment humidity: (50~70) % RH
3. Operation Conditions of the Machine
   Set the switch to position "The highest gear".
4. Test Procedures
   1) Get a bacteria slant culture (4~7 generation) which is incubated at 37 ℃ for 24 h, wash the culture from this slant with 10 mL NB, filter the liquid culture by aseptic cotton buds, and dilute this inoculums with NB as appropriate.
   2) The equipments are placed in the test chambers respectively, close the door, and open the HEPA filter. Simultaneously operate the environmental control devices until the experimental cabin temperature to be (20~25) ℃, relative humidity to be (50~70)%RH, Turn off the chamber environmental control system.
   3) Release microbial aerosol: turn on the microbial aerosol generator, then turn on the ceiling fan, turn off the fan after 5 min, and let stand for 5 min.
   4) Original Bacteria aerosols collected by liquid impingement sampler.
   5) The test group started the air cleaner and sampled after 60 min of action, and the control group also sampled in the corresponding time period.
   6) Choose 2 NA plates (the same batch) as the negative control, and culture them on the same condition with the samples.
   7) Run the test three times.
5. Computational Formula

Natural decay rate $N_t(\%)=\frac{V_0-V_t}{V_0}\times 100$

Where: V_0 = Original Bacteria Count of Control group; V_t = Bacteria Count after Treatment of Control group .

Killing Rate $K_t(\%)=\frac{V_1\times(1-N_t)-V_2}{V_1\times(1-N_t)}\times 100$

Where: V_1 = Original Bacteria Count of test group; V_2 = Bacteria Count after Treatment of test group.

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Test results

Number of Sample	Test Bacteria	Test Time (min)	Test Number	Control Group: Original Bacteria Count V_0 (cfu/m^3)	Control Group: Bacteria Count after Treatment V_t (cfu/m^3)	Control Group: Natural Decay Rate N_t (%)	Test Group: Original Bacteria Count V_1 (cfu/m^3)	Test Group: Bacteria Count after Treatment V_2 (cfu/m^3)	Killing Rate K_t (%)
KJ20192583-1	*Staphylococcus albus*	60	1	2.82×10^6	2.08×10^6	26.24	3.62×10^6	3.20×10^2	99.99
			2	2.05×10^6	1.57×10^6	23.41	3.87×10^6	3.20×10^2	99.99
			3	2.88×10^6	2.24×10^6	22.22	3.10×10^6	3.20×10^2	99.99

Note: The negative control group was sterile growth.

End of report

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