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Air Cleaner Test Report

Applicant	:	RHT Industries Limited
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Application Number	:	N/A
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1. Sample Description

Product	:	Air Cleaner
Brand Name	:	b-MOLA
Model No.	:	BM20
No. of Sample Received	:	1
Test Date	:	26 May 2022 – 26 May 2022
Test Item(s)	:	Pollutants Removal Efficiency
Test Requested	:	Acetic Acid
Test Reference(s)	:	In-house method SOP200 (for VOC removal rate)
Test Equipment	:	Honeywell instrument ppbRAE 3000
Equipment no.	:	E002 – 003
Test Result	:	See the attached sheets
Remark	:	N/A

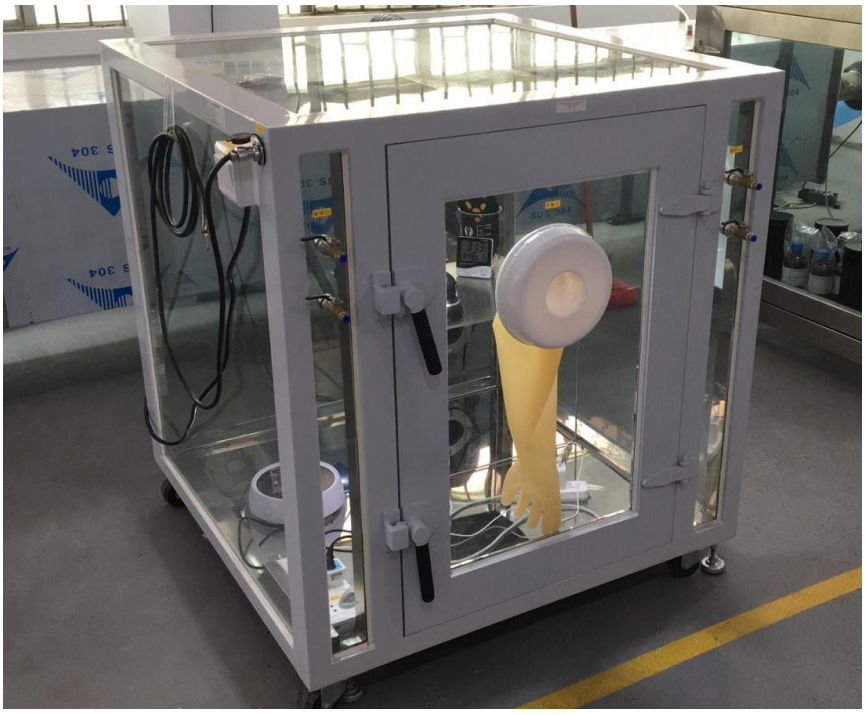
2. Detail Description of the sample

b-MOLA/ BM20

NCCO Filter and HEPA

3. Testing Environment

Temperature	:	25.4 °C
Relative Humidity	:	46 %
Testing Chamber	:	$1m^3$ Testing Chamber
Size (W × H × D) mm	:	1000 × 1000 × 1000



$1m^3$ Testing Chamber

4. Testing Method of Removal Efficiency

In a 1m^3 chamber, chemical was injected into the chamber by a syringe and evaporated by a hot plate. Internal circulation was turned on throughout the test to ensure the uniformity of chemical concentration inside the chamber. Initial concentration (C_0) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) mg/m^3. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C_{60}, the final concentration of chemical.

The test was repeated without the air cleaner to determine the natural decay of the chemical at the test chamber. Chemical was injected into the chamber by a syringe and evaporated by a hot plate with an initial concentration (C_{N0}). The final concentration (C_{N60}) was determined 60 minutes later.

New filters and HEPA have been used for each chemical test.

5. Results of Removal Efficiency

Brand/ Model No.	Operation Mode	Test Chemical	Volume of use (mL)
b-MOLA/ BM20	H	Acetic Acid	0.35

Initial Concentration (mg/m^3)	Natural Decay, k_n (min^{-1})	Total Decay, k_e (min^{-1})	Removal Efficiency (%)
104.60	0.0035	0.0768	> 99.9

Remark: Initial concentration is set within 100±10mg/m^3.

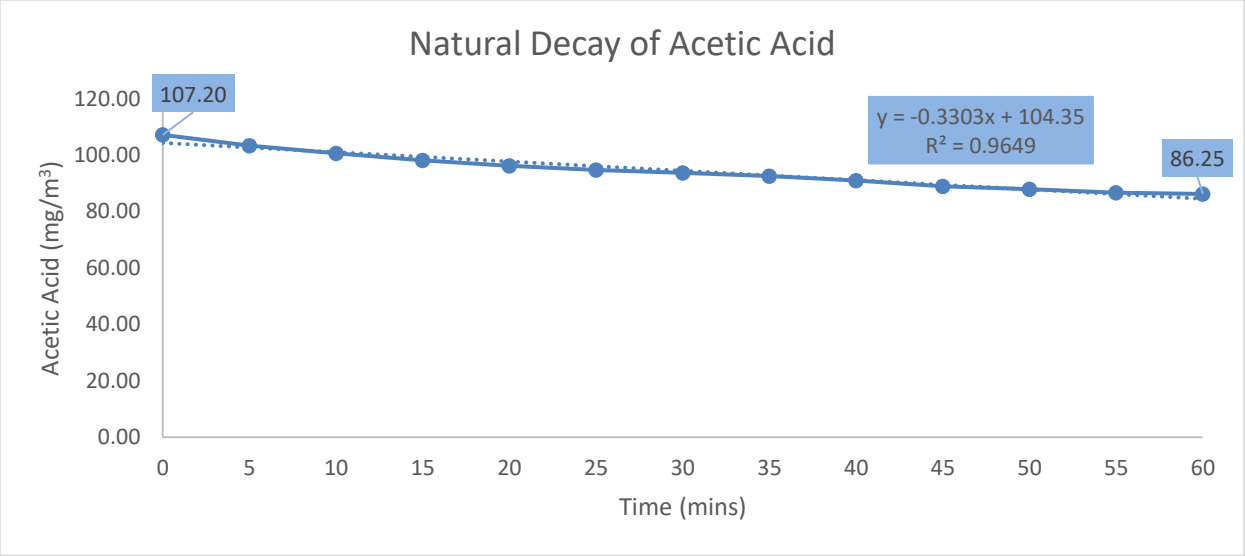


Figure a. Natural Decay of Acetic Acid

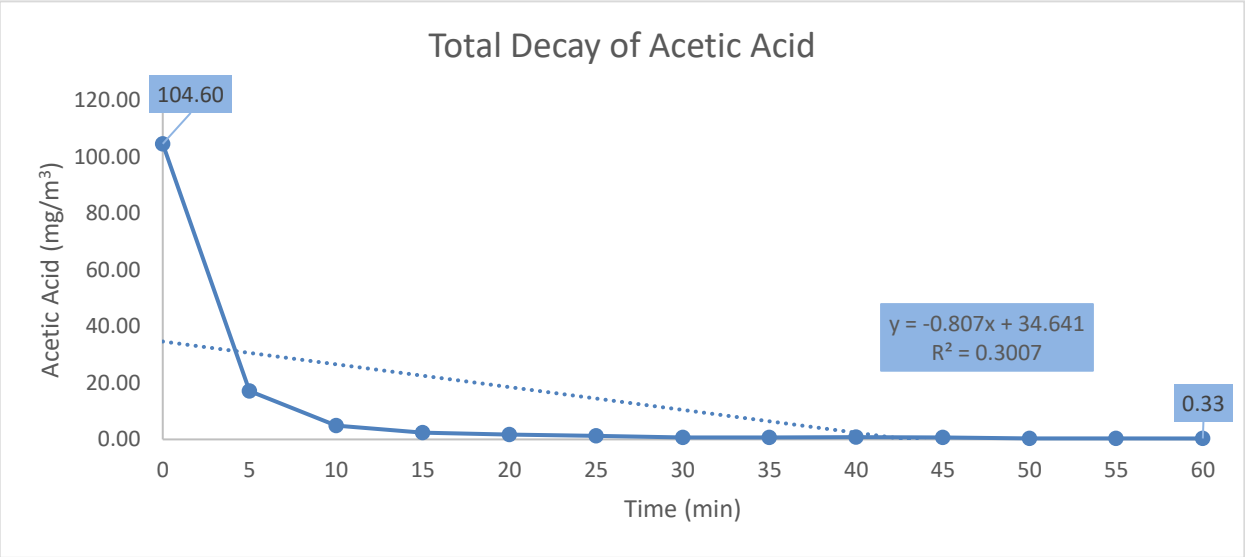


Figure b. Total Decay of Acetic Acid

Calculation:

$$A_2 = \frac{C_{N0} - C_{N60}}{C_{N0}}$$

$$R = \frac{C_0(1 - A_2) - C_{60}}{C_0(1 - A_2)}$$

R:	Removal efficiency	(%)
A_2:	Natural decay rate	(%)
C:	Concentration of testing subject	(mg/m^3)

***** End of Report *****