

Air Cleaner Test Report

Applicant : RHT Industries Limited

Address : Block B, 2/F, Goodwill Industrial Building, No. 36-44 Pak Tin Par
Street, Tsuen Wan, New Territories, Hong Kong

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Acron International Technology Limited
IAQ Contractor; IAQ Control Facilities Supplier; IAQ Consultant
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1. Sample Description

Product : Air Cleaner

Brand Name : b-MOLA

Model(s) : MOLA300

No. of Sample Received : 1

Test Date : 14 Oct 2019 – 15 Oct 2019

Test Standard(s) : GB/T 18801-2015
GB/T 18883-2002

Test Item(s) : Clean Air Delivery Rate (CADR)

Test Requested : Toluene

Test Equipment : Honeywell instrument ppbRAE 3000

Test Method : Sampled by in house method SOP-110

Equipment No. : E002 - 001

Test Result : Refer to the attached sheets

Remark : Client claimed that model MOLA300 same as IA60/BM300 in terms of power, parts, components and structures. Only different is the selling platform.

2. Detail Description of the sample



b-MOLA/MOLA300



NCCO Reactor (NA213020300) and Activated Carbon HEPA

3. Testing Environment

Temperature	: 25.6 °C
Relative Humidity	: 40 %
Testing Chamber	: 30m ³ Testing Chamber
Size (W × D × H)	: 3.55m × 3.52m × 2.55m



30m³ Testing Chamber

4. Testing Method of Clean Air Delivery Rate (CADR)

Tests were performed in accordance to GB/T 18801-2015.

1. Test Chemical

Toluene: AR grade

2. Test Environment

Temperature: $(25 \pm 2) ^\circ\text{C}$

Relative Humidity: $(50 \pm 10) \%$

3. Test Procedure

- 1) Place the air cleaner into the testing chamber. Open the air cleaner to the highest operation power to check if it is function correctly. Then turn off the air cleaner and close the testing chamber door.
- 2) Turn on high efficiency air filter of the testing chamber until the concentration of particles ($\geq 0.3 \mu\text{m}$) is less than 1000 particle/L.
- 3) Record the background toluene concentration and turn of the high efficiency air filter of the testing chamber.
- 4) Inject gaseous toluene into the testing chamber until the concentration reaches $(2.00 \pm 0.40) \text{ mg/m}^3$, close the chemical injector and turn on the mixing fan for 10 minutes.
- 5) When the mixing fan is completely stop, record the initial concentration of toluene as C_0 .
- 6) Turn on the sample air purifier. Record toluene concentration every 5 minutes for the next 60 minutes.
- 7) Repeat Procedure 1) – 6) without turning on the air cleaner, record the natural decay rate of the testing chamber.

5. Result of Clean Air Delivery Rate (CADR)

Brand/ Model No.	Operation Mode	Test Chemical	Volume (mL)
B-MOLA/MOLA300	SS	Toluene	0.15

Initial Concentration (mg/m ³)	Natural Decay, k _n (min ⁻¹)	Total Decay, k _e (min ⁻¹)	CADR (m ³ /h)
2.01	0.0006	0.2050	367.9

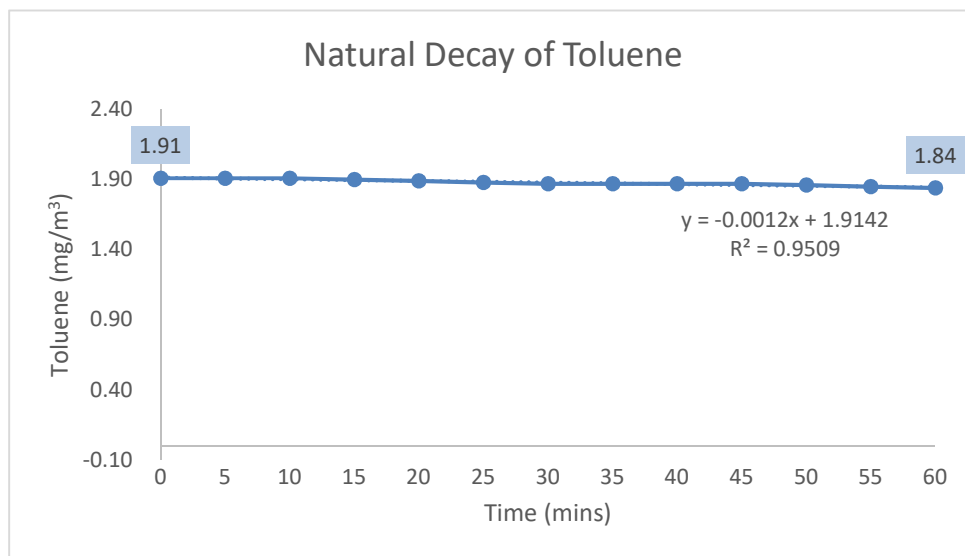


Figure a. Natural Decay of Toluene

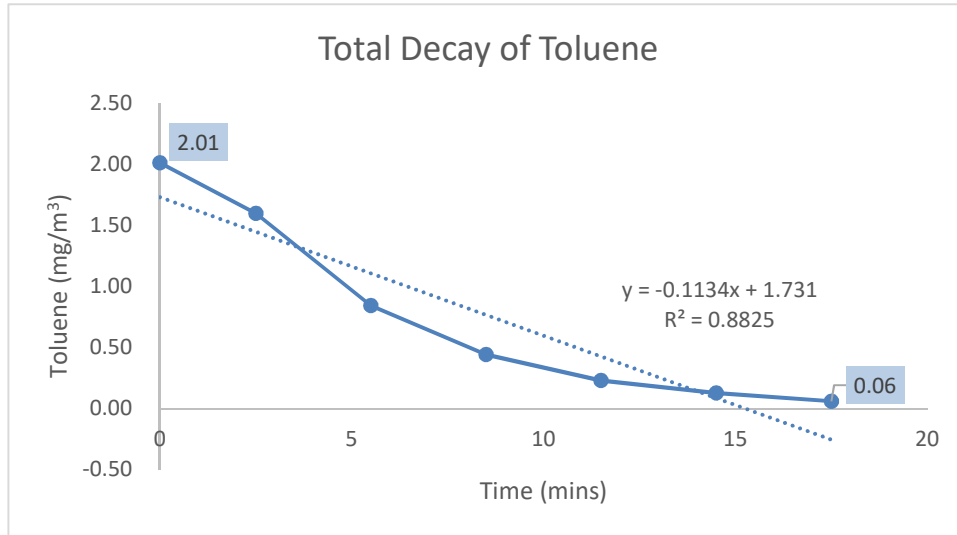


Figure b. Total Decay of Toluene

Calculation

$$\text{CADR (m}^3/\text{h)} = 60 \times (k_e - k_n) \times V$$

k_e : Total decay rate (min⁻¹)

k_n : Natural decay rate (min⁻¹)

V : Volume of the testing chamber (m³)

End of Report