

## **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

Application Number : KJ191002-15

Report Number : REPAP19120501

Report Issue Date : 09 Dec 2019

Total Page : 9 Pages (including this page)

This document is issued by the Company under its General Conditions of Service printed overleaf. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30days only. This document cannot be reproduced except in full, without prior approval of the Company.

**Acron International Technology Limited**  
*IAQ Contractor, IAQ Control Facilities Supplier, IAQ Consultant*  
*Subsidiary company of the Hong Kong University of Science and Technology*  
*Under the Entrepreneurship Program*

## TABLE OF CONTENT

---

1. Sample Description	3
2. Detail Description of the sample	4 – 5
3. Testing Environment	6
4. Testing Method of Removal Efficiency	7
5. Result of Removal Efficiency	8 – 9

## 1. Sample Description

Product : Air Cleaner

Brand Name : b-MOLA

Model No. : MOLA150

No. of Sample Received : 1

Test Date : 04 Dec 2019 – 04 Dec 2019

Test Item(s) : Pollutants Removal Efficiency

Test Requested : Tetrachloroethylene

Test Reference(s) : In-house method SOP200 (for VOC removal rate)

Test Equipment : Honeywell instrument ppbRAE 3000

Equipment no. : E002 - 002

Test Result : See the attached sheets

Remark : Client claimed that model MOLA150 same as IA50/BM150 in terms of power, parts, components and structures. Only different is the selling platform.

## 2. Detail Description of the sample



**b-MOLA/MOLA150**



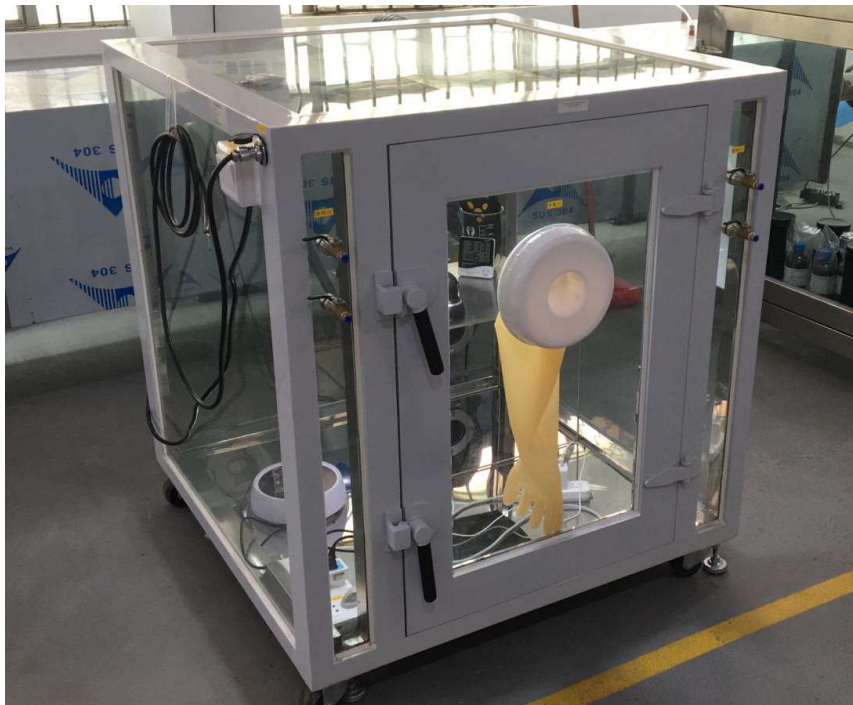
**NCCO Reactor (NA213020300) and Activated Carbon HEPA**

### 3. Testing Environment

---

Temperature	: 22.5 °C
Relative Humidity	: 20 %
Testing Chamber	: 1m <sup>3</sup> Testing Chamber
Size (W × H × D) mm	: 1000 × 1000 × 1000

---



**1m<sup>3</sup> Testing Chamber**

#### 4. Testing Method of Removal Efficiency

In a 1m<sup>3</sup> 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 ( $\pm 10$ ) mg/m<sup>3</sup>. 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.

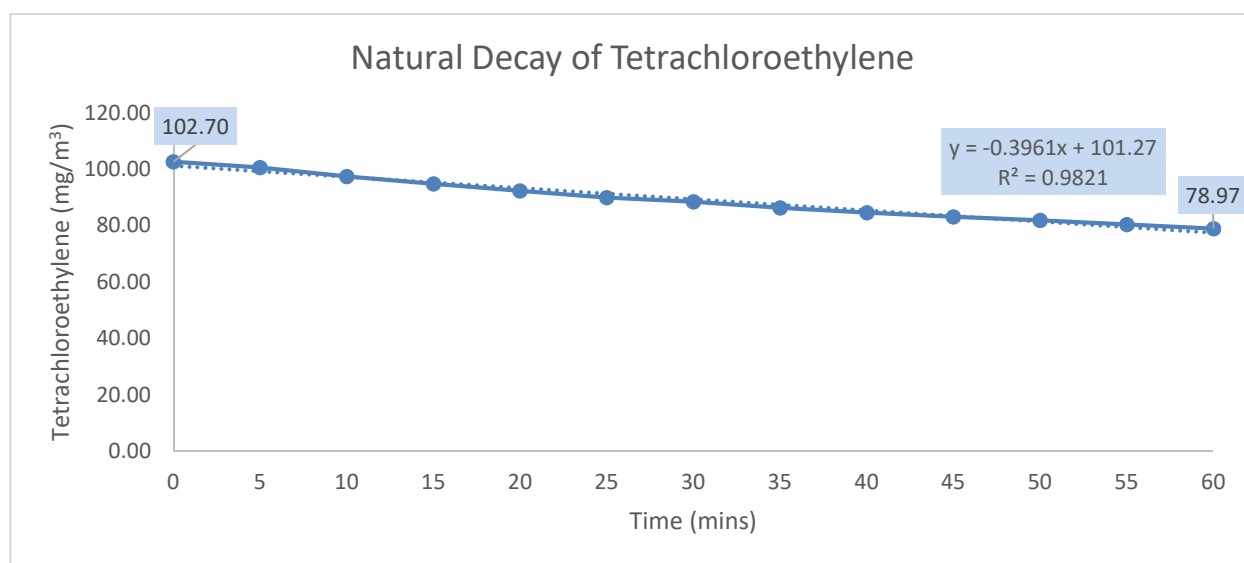


## 5. Results of Removal Efficiency

Brand/ Model No.	Operation Mode	Test Chemical	Volume (mL)
B-MOLA/MOLA150	SS	Tetrachloroethylene	0.085

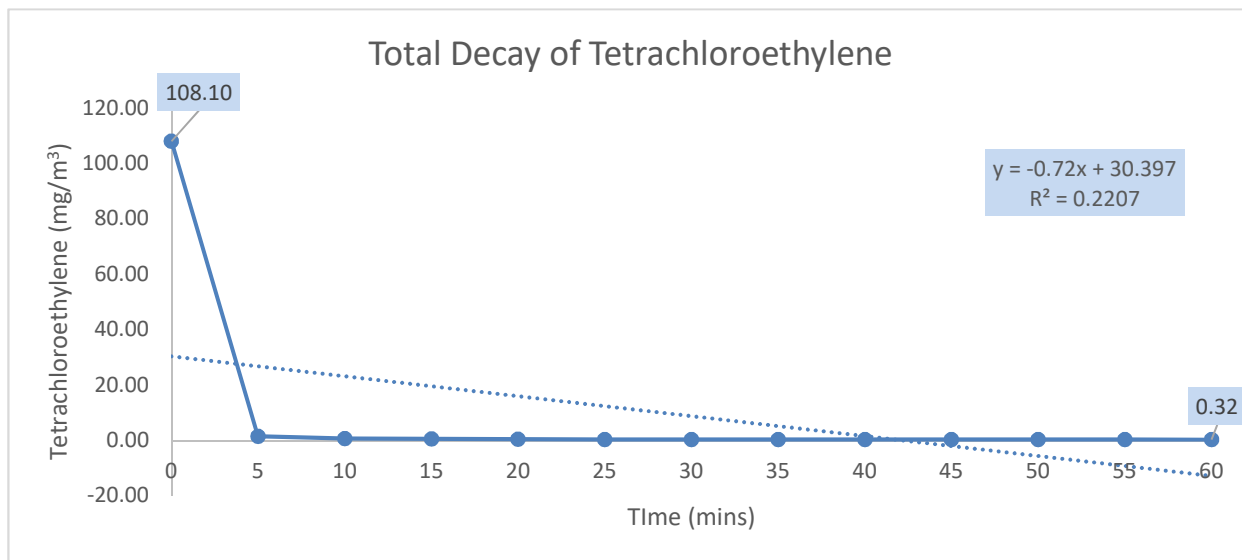
Initial Concentration (mg/m <sup>3</sup> )	Total Decay, $k_e$ (min <sup>-1</sup> )	Total Decay, $k_e$ (min <sup>-1</sup> )	Removal Efficiency (%)
108.10	0.0044	0.0524	>99

Remark: Initial concentration is set within 100±10mg/m<sup>3</sup>.



**Figure a. Natural Decay of Tetrachloroethylene**





**Figure a. Total Decay of Tetrachloroethylene**

Calculation:

---

$$A_1 = \frac{C_0 - C_{60}}{C_0}$$

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

$$\text{Removal Efficiency} = \frac{C_0(1 - A_2) - C_{60}}{C_0(1 - A_2)}$$

A<sub>1</sub>: Removal rate (%)  
 A<sub>2</sub>: Natural decay rate (%)  
 C: Concentration of testing subject (mg/m<sup>3</sup>)

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