

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 27 Mar 2019 – 27 Mar 2019  
Test Item(s) : Pollutants Removal Efficiency  
Test Reference(s) : In-house method SOP200 (for VOC removal rate)

### Results of Removal Efficiency for Chemical Pollutant

Brand / Model No.	Operating Mode	Test Chemical	Initial Concentration	Removal Efficiency (%)
GojiAir / H1	SS	Acetic Acid	100.7 ppm	>99.9

Remark: Initial concentration is set within 100±10ppm.

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<sub>0</sub>) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) ppm. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C<sub>60</sub>, the final concentration of chemical.

The test was repeated again 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<sub>N0</sub>). The final concentration (C<sub>N60</sub>) was determined 60 minutes later

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

## Calculation

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

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

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

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

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 26 Mar 2019 – 26 Mar 2019  
Test Item(s) : Pollutants Removal Efficiency  
Test Reference(s) : In-house method SOP200 (for VOC removal rate)

### Results of Removal Efficiency for Chemical Pollutant

Brand / Model No.	Operating Mode	Test Chemical	Initial Concentration	Removal Efficiency (%)
GojiAir / H1	SS	Acetone	93.3 ppm	>99.9

Remark: Initial concentration is set within 100±10ppm.

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<sub>0</sub>) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) ppm. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C<sub>60</sub>, the final concentration of chemical.

The test was repeated again 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<sub>N0</sub>). The final concentration (C<sub>N60</sub>) was determined 60 minutes later

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

## Calculation

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

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

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

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

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 28 Mar 2019 – 28 Mar 2019  
Test Item(s) : Pollutants Removal Efficiency  
Test Reference(s) : In-house method SOP200 (for VOC removal rate)

### Results of Removal Efficiency for Chemical Pollutant

Brand / Model No.	Operating Mode	Test Chemical	Initial Concentration	Removal Efficiency (%)
GojiAir / H1	SS	Ammonia	99.1 ppm	98

Remark: Initial concentration is set within 100±10ppm.

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<sub>0</sub>) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) ppm. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C<sub>60</sub>, the final concentration of chemical.

The test was repeated again 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<sub>N0</sub>). The final concentration (C<sub>N60</sub>) was determined 60 minutes later

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

## Calculation

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

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

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

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

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 26 Jun 2018 – 28 Jun 2018  
Test Standard(s) : GB/T 18801-2015  
Test Item(s) : 1. Clean Air Delivery Rate (CADR) for solid pollutant  
2. Cumulative Clean Mass (CCM) for solid pollutant

### Result of Clean Air Delivery Rate (CADR) for solid pollutant

Brand / Model No.	Operating Mode	Test Particulate	Natural Decay Rate	CADR (m <sup>3</sup> /h)
GojiAir / H1	SS	Cigarette smoke	0.0010	85.7

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

1. Test Particulate

Cigarette smoke particles ( $\geq 0.3\mu\text{m}$ )

2. Test Environment

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

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

3. Test Apparatus

- 1) Testing Chamber (30m<sup>3</sup>)
- 2) High Density Particle Counter (SX-L301N)

4. 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 particle concentration and turn of the high efficiency air filter of the testing chamber.

- 4) Light a cigarette and use low pressurized air to inject smoke into the testing chamber until the concentration reaches  $(2 \times 10^6 - 2 \times 10^7)$  particle/L, close the smoke injector and turn on the mixing fan for 10 minutes.
- 5) When the mixing fan is completely stop, record the initial concentration of the particle ( $\geq 0.3 \mu\text{m}$ ) as  $C_0$ .
- 6) Turn on the sample air purifier. Record the particle concentration every 2 minutes for the next 20 minutes.
- 7) Repeat Procedure 1) – 6) without turning on the air cleaner, record the natural decay rate of the testing chamber.

### Calculation

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

$k_e$ : Total decay rate ( $\text{min}^{-1}$ )  $k_n$ : Natural decay rate ( $\text{min}^{-1}$ )

$V$ : Volume of the testing chamber ( $\text{m}^3$ )



### Result of Cumulative Clean Mass (CCM) for solid pollutant

CCM Level	CCM <sub>PM</sub> (mg)
P1	$3000 \leq \text{CCM}_{\text{PM}} < 5000$
P2	$5000 \leq \text{CCM}_{\text{PM}} < 8000$
P3	$8000 \leq \text{CCM}_{\text{PM}} < 12000$
P4	$12000 \leq \text{CCM}_{\text{PM}}$

Remark: If CCM<sub>PM</sub> is smaller than 3000mg, no conclusion will be given for CCM level.

Brand/Model no.	Test Number	Total cigarette burnt	Total particle mass (mg)	CADR (m <sup>3</sup> /h)	Decreased Percentage (%)	
GojiAir/ H1	1	0	0	85.7	100	
	2	50	2250	76.0	89	
	3	100	4500	66.7	77	
	4	150	6750	52.6	61	
	5	200	9000	42.8	50	
	CCM <sub>PM</sub> (mg)		9000			
	CCM Level		P3			

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

1. Test particulate

Cigarette smoke particles ( $\geq 0.3 \mu\text{m}$ )

2. Test Apparatus

3m<sup>3</sup> Chamber

30m<sup>3</sup> Chamber

High Density Particle Counter (SX-L301N)

3. Test Procedures

- 1) According to procedures in Part 3, calculate the initial CADR value of the sample air cleaner.
- 2) Transfer the sample air cleaner into 3m<sup>3</sup> chamber, turn on the sample air cleaner and mixing fan.
- 3) Light specific number of cigarette and inject the smoke particles into the 3m<sup>3</sup> chamber. Wait until the particulate concentration reaches below 0.035mg/m<sup>3</sup>, close the sample air cleaner.
- 4) Transfer the sample air cleaner into 30m<sup>3</sup> chamber, test and calculate the CADR value.
- 5) Repeat Procedure 2) – 4), obtain the CADR value after 50, 100, 150 cigarettes are burnt.

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

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 28 Mar 2019 – 28 Mar 2019  
Test Item(s) : Pollutants Removal Efficiency  
Test Reference(s) : In-house method SOP200 (for VOC removal rate)

### Results of Removal Efficiency for Chemical Pollutant

Brand / Model No.	Operating Mode	Test Chemical	Initial Concentration	Removal Efficiency (%)
GojiAir / H1	SS	Ethylbenzene	102.9 ppm	99

Remark: Initial concentration is set within 100±10ppm.

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<sub>0</sub>) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) ppm. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C<sub>60</sub>, the final concentration of chemical.

The test was repeated again 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<sub>N0</sub>). The final concentration (C<sub>N60</sub>) was determined 60 minutes later

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

## Calculation

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

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

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

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

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 14 Nov 2018 – 14 Nov 2018  
Test Standard(s) : GB/T 18204.2-2014  
GB/T 18801-2015  
Test Item(s) : Clean Air Delivery Rate (CADR) for chemical pollutant

### Result of Clean Air Delivery Rate (CADR) for solid pollutant

Brand / Model No.	Operating Mode	Test Chemical	Natural Decay Rate	CADR (m <sup>3</sup> /h)
GojiAir / H1	SS	Formaldehyde	0.001	4.3

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

1. Test Chemical Formaldehyde

2. Test Environment

Temperature: (25 ± 2) °C

Relative Humidity: (50 ± 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 formaldehyde concentration and turn of the high efficiency air filter of the testing chamber.
- 4) Inject gaseous formaldehyde into the testing chamber until the concentration reaches (1.00±0.02) mg/m<sup>3</sup>, 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 formaldehyde as C<sub>0</sub>.

- 6) Turn on the sample air purifier. Record formaldehyde 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.

## Calculation

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

$k_e$ : Total decay rate (min<sup>-1</sup>)     $k_n$ : Natural decay rate (min<sup>-1</sup>)

V: Volume of the testing chamber (m<sup>3</sup>)

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

## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 28 Mar 2019 – 28 Mar 2019  
Test Item(s) : Pollutants Removal Efficiency  
Test Reference(s) : In-house method SOP200 (for VOC removal rate)

### Results of Removal Efficiency for Chemical Pollutant

Brand / Model No.	Operating Mode	Test Chemical	Initial Concentration	Removal Efficiency (%)
GojiAir / H1	SS	Tetrachloroethylene	112.8 ppm	93

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<sub>0</sub>) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) ppm. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C<sub>60</sub>, the final concentration of chemical.

The test was repeated again 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<sub>N0</sub>). The final concentration (C<sub>N60</sub>) was determined 60 minutes later

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

## Calculation

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

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

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

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



## Air Cleaner Test Report

Brand Name : GojiAir  
Model : H1  
Test Date : 27 Mar 2019 – 27 Mar 2019  
Test Item(s) : Pollutants Removal Efficiency  
Test Reference(s) : In-house method SOP200 (for VOC removal rate)

### Results of Removal Efficiency for Chemical Pollutant

Brand / Model No.	Operating Mode	Test Chemical	Initial Concentration	Removal Efficiency (%)
GojiAir / H1	SS	Toluene	106.9 ppm	99

Remark: Initial concentration is set within 100±10ppm.

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<sub>0</sub>) of the chemical was recorded before switching on the air cleaner with a range of 100 (±10) ppm. Then, the air cleaner is switched on for 60 minutes and the chemical concentration was recorded as C<sub>60</sub>, the final concentration of chemical.

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

## Calculation

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

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

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