E-Cigarette Aerosol Analysis Report

Report No. : TCT201126C901 Date : Dec. 03, 2020 Page No.: 1 of 6

Applicant: **GEEKVAPE TECHNOLOGY CO., LTD.**

Address: **7th Floor,#3 west Block, Lao Bing Building, XingYe Rd#3012, Bao'an District, Shenzhen, Guangdong, China**

The following sample was submitted and identified by/on behalf of the client as:

Sample Name:	GEEKVAPE K1 Cartridge 1.2Ω
Model No.:	K1 Cartridge 1.2Ω
MOD:	8-12W
Tank:	2.0ml
Coil:	1.2ohm FeCrAl
Power level in testing:	Voltage/Wattage of tested sample is un-adjustable
Adjustable air inlet or not:	No
Trade Mark:	Geekvape
Sample Received Date:	2020.11.26
Testing Period:	2020.11.26-2020.12.03
Test Method:	Please refer to the following page(s).
Test Result(s):	Please refer to the following page(s).
Remark:	Test data of this report was extracted from report No.TCT201126C013.

Test Items		Test Requested
1	Carbonyl Compounds: Formaldehyde, Acetaldehyde, Acrolein, Crotonaldehyde	Emission testing according to Article 20 of Tobacco Product Directive (2014/40/EU)
2	Metals: Aluminum, Chromium, Iron, Nickel, Tin, Lead, Cadmium, Arsenic, Antimony	
3	Nicotine consistency	

Checked by

Sin Lu

Signed for and on behalf of TCT

Noel Yin

Technical Manager

Test Results:

Test Condition for test items except Nicotine consistency test:

With reference to the CORESTA RECOMMENDED METHOD Nº 81 method parameter, Afnor standardization XP D90-300-3,International Standard ISO 20768:2018 and PD CEN/TR 17236:2018, a smoke machine was used to collect the vapor.

Puff Duration	3.0s±0.1s
Puff Volume	55mL±0.3mL
Puff Frequency	30s±0.5s
Puff of Each Group	20
Group Interval Time	300s±120s
Maximum Flow	18.5mL/s±1.0mL/s
Pressure Drop	< 50hPa
Group	5
Total Number of Puff	100
Total Duration of Vaporization	300s

The temperature and relative humidity of the test atmosphere during machine preparation and testing were kept within the following limits: temperature ±2℃, relative humidity ±5%

Sample Description:

No.1 GEEKVAPE K1 Cartridge 1.2Ω with 1.2ohm FeCrAl

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1. Carbonyl Compounds Content(s)

Method: The aerosol generated by the e-cigarette is absorbed by the impactor containing 40mL acidified solution of 2,4-dinitrophenylhydrazine (DNPH) in acetonitrile. The solution was filtered and analyzed by reverse phase high‐performance liquid chromatography and determined using a UV detector.

Test Item	CAS No.	Unit	LOD	LOQ	Content(s)
					No.1
Formaldehyde	50-00-0	ug/100puffs	0.667	2	25.7
Acetaldehyde	75-07-0	ug/100puffs	0.667	2	15.0
Acrolein	107-02-8	ug/100puffs	0.667	2	ND
Crotonaldehyde	4170-30-3	ug/100puffs	0.667	2	ND

Note:
- ug = Microgram
- ND = Not Detected (lower than LOD)
- LOD = Limit of Detection
- LOQ = Limit of Quantitation
- E-Liquid Used: E-liquid B (AFNOR XP D90-300-3)

2. Metals Content(s)

Method: Wipe the clamp with isopropyl alcohol. Let stand for a minute. 20 ml of nitric acid was added to the impactor and placed in series with the Cambridge filter to absorb the aerosol. The Cambridge filter was removed and placed in nitric acid, shaken at 210 rpm for 30 min, and the solution was filtered and analyzed by ICP-MS.

Test Item	CAS No.	Unit	LOD	LOQ	Content(s)
					No.1
Aluminum(Al)	7429-90-5	ug/100puffs	0.025	0.25	ND
Chromium(Cr)	7440-47-3	ug/100puffs	0.005	0.05	ND
Iron(Fe)	7439-89-6	ug/100puffs	0.005	0.05	ND
Nickel(Ni)	7440-02-0	ug/100puffs	0.025	0.25	ND
Tin(Sn)	7440-31-5	ug/100puffs	0.25	2.5	ND
Lead(Pb)	7439-92-1	ug/100puffs	0.025	0.25	ND
Cadmium(Cd)	7440-43-9	ug/100puffs	0.005	0.05	ND
Arsenic(As)	7440-38-2	ug/100puffs	0.025	0.25	ND
Antimony(Sb)	7440-36-0	ug/100puffs	0.025	0.25	ND

Note:
- ug = Microgram
- ND = Not Detected (lower than LOD)
- LOD = Limit of Detection
- LOQ = Limit of Quantitation
- E-Liquid Used: E-liquid B (AFNOR XP D90-300-3)

3. Nicotine Consistency Test

Test Condition: With reference to the CORESTA RECOMMENDED METHOD Nº 81 method parameter and Afnor standardization XP D90-300-3, a smoke machine was used to collect the vapor.

Puff Duration	3.0s±0.1s
Puff Volume	55mL±0.3mL
Puff of Each Group	20
Maximum Flow	18.5mL/s±1.0mL/s
Pressure Drop	< 50hPa

The temperature and relative humidity of the test atmosphere during machine preparation and testing were kept within the following limits: temperature ±2℃, relative humidity ±5%

Method: Wipe the clamp with isopropyl alcohol. Let stand for a minute. The aerosol generated by the e-cigarette is absorbed by the Cambridge filter. Remove the Cambridge filter and place it into a centrifuge tube, add 20 mL of Isopropyl alcohol and 0.2ml Internal standard stock solution. Shaken at 210 rpm for 30 min, and the solution was filtered and analyzed by GC-FID.

Sample No.	Nicotine(CAS No.:54-11-5) Contents(mg/20Puffs)						Total (mg/100puffs)
	Group 1*	Group 2	Group 3*	Group 4	Group 5*	AVG	
No.1	2.11	2.07	1.97	1.97	1.99	2.02	10.1
Deviation(%)	4.4	-	2.4	-	1.8	-	-

Note:
- mg = milligram
- ND = Not Detected (lower than LOD)
- LOD = Limit of Detection = 0.01mg/20Puffs
- LOQ = Limit of Quantitation = 0.1mg/20Puffs
- 1group = 20puffs
- * Values used for determination of consistency of nicotine emission
- E-Liquid Used: E-liquid A (AFNOR XP D90-300-3)
- Under the conditions of the test and with reference to AFNOR XP D90-300-3, the electronic cigarette delivers a dose of nicotine at consistent levels.

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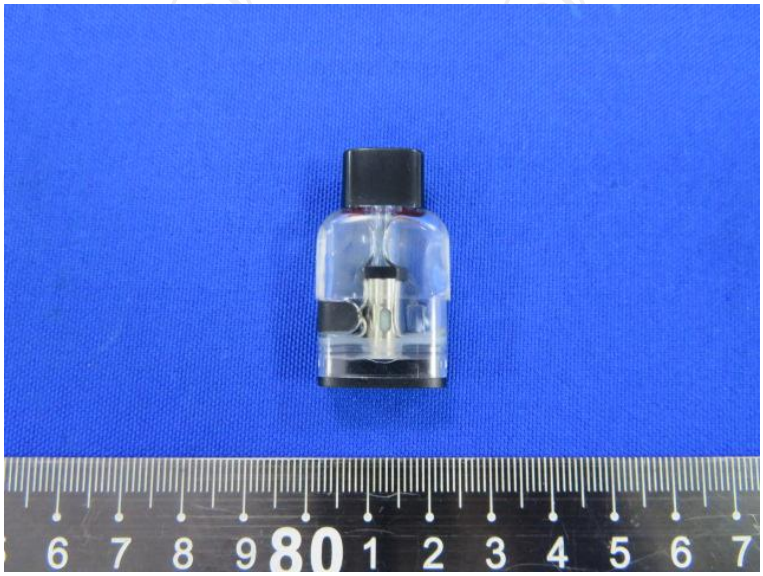
Photo(s) of the sample(s)



GEEKVAPE K1 Cartridge 1.2Ω with 1.2ohm FeCrAl

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

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