

# TEST REPORT

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**Request date :** *Quote signed 1 July 2016*

**Subject :** Analysis of e-cigarette emissions for notification purpose.

**Sample identification :** E-cigarette JK015  
Resistance JC013

**Reference documents :** EU Directive 2014/40  
Standard XP D90-300 part 3 (2016-07-26)

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It contains 6 pages.**

## 1. SAMPLE DESCRIPTION

Samples were received at the laboratory week 23/2016.

5 e-cigarettes with spare resistances showing the following particulars :

- **E-cigarette JK015**
  - Tank : 2 ml;
  - Power adjustable : 1W-80W;
  - Air inflow adjustable.
- **Resistance JC013**
  - 0.5  $\Omega$ .
  - 12-25 W



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## 2. LIST OF TESTS

Tests performed are summarized in table1.

Tests performed	Standards
Determination of nicotine content in emissions. Consistency of the emissions	XP D90-300 part 3 (2016-07-26)
Determination of diacetyl, acetyl propionyl and acetoin content in emissions.	XP D90-300 part 3 (2016-07-26)
Determination of formaldehyde, acetaldehyde and acrolein contents in emissions.	XP D90-300 part 3 (2016-07-26)
Determination of antimony, nickel, chromium, cadmium, lead and arsenic contents in emissions.	XP D90-300 part 3 (2016-07-26)

Table n° 1 : Tests performed

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### 3. TESTS

#### 3.1. PROCEDURES

Procedures used by LNE are in conformity with the listed standard.

Emissions tests were carried out using an analytical smoking machine Cerulean CET18 with power of electronic cigarette fixed at 25 W.

Tests were duplicated for each preparation between week 31 and 37/2016.

#### 3.2. RESULTS

The results are shown in the tables on the following pages.

##### 3.2.1 Determination of nicotine content in emissions and consistency of the emissions

Tests	Nicotine (mg/20 puffs)	Nicotine (mg/100 puffs)
1	3,06*	13,1
	2,40	
	2,57*	
	2,70	
	2,40*	
2	2,74*	14,2
	3,37	
	2,54*	
	2,86	
	2,66*	

Table 2 : Results

\* values used for determination of consistency of nicotine emission.

Measured content of nicotine (CAS# 54-11-5) in emission :  $13,6 \pm 1,1$  mg/100 puffs

Under the conditions of the test, the electronic cigarette **JK015** with resistance **JC013** delivers a dose of nicotine at consistent levels.

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## 3.2.2 Determination of diacetyl, acetyl propionyl and acetoin content in emissions

Tests	Diacetyl (µg/200 puffs)	Acetyl propionyl (µg/200 puffs)	Acetoin (µg/200 puffs)
1	< 6	< 50	< 50
2	< 6	< 50	< 50

Table 3 : Results

Measured contents in emissions :

- diacetyl (CAS# 431-03-8) < 6 µg/200 puffs;
- acetyl propionyl (CAS# 600-14-6) < 50 µg/200 puffs;
- acetoin (CAS# 513-86-0) < 50 µg/200 puffs.

## 3.2.3 Determination of formaldehyde, acetaldehyde and acrolein contents in emissions

Tests	Formaldehyde (µg/200 puffs)	Acetaldehyde (µg/200 puffs)	Acrolein (µg/200 puffs)
1	143	47	49
2	689	489	131

Table 4 : Results

Measured contents in emissions :

- formaldehyde (CAS #50-00-0)  $416 \pm 35$  µg/200 puffs;
- acetaldehyde (CAS #75-07-0)  $268 \pm 22$  µg/200 puffs.
- acrolein (CAS #107-02-8)  $89 \pm 7$  µg/200 puffs.

### 3.2.4 Determination of antimony, nickel, chromium, cadmium, lead and arsenic contents in emissions

Tests	Antimony (Sb) (µg/200 puffs)	Nickel (Ni) (µg/200 puffs)	Chromium (Cr) (µg/200 puffs)	Cadmium (Cd) (µg/200 puffs)	Lead (Pb) (µg/200 puffs)	Arsenic (As) (µg/200 puffs)
1	< 1	< 0,3	< 0,2	< 0,3	< 0,3	< 0,3
2	< 1	< 0,3	< 0,2	< 0,3	< 0,3	< 0,3

Table 5 : Results

Measured contents in emissions :

- antimony (CAS #7440-36-0) < 1 µg/200 puffs;
- nickel (CAS #7440-02-0) < 0,3 µg/200 puffs;
- chromium (CAS #7440-47-3) < 0,2 µg/200 puffs;
- cadmium (CAS #7440-43-9) < 0,3 µg/200 puffs;
- lead (CAS #7439-92-1) < 0,3 µg/200 puffs;
- arsenic (CAS #7440-38-2) < 0,3 µg/200 puffs.

Trappes, 19 September 2016

Le Responsable de l'essai



Laurent DUTERTRE

The results mentioned only apply to samples, products and equipment submitted to LNE and as defined in this document.