

Certificate of analyses/Quality statement**E-cigarette: Atomizers IJOY Tornado****E-liquid: Z01016008**

Testprocedures/References

Sampling

- Machine for e-cigarettes for aerosol generation and recording for routine analysis terms and standard conditions (draft DIN Standards Committee for Food and Agricultural Products NA057-04-01-05 AK)
- Preparations for inhalation, aerodynamic assessment (PharmEur 2.9.18)

Analytics

- Determination of aldehydes and ketones in air via reaction with 2,4-dinitrophenylhydrazine, separation and detection of the derivative method by Waters, testing by BioChem Laboratory for Biological and Chemical Analysis GmbH
- Determination of nicotine content by HPLC / UV method , testing / method by BioChem Laboratory for biological and Chemische Analytik
- Determination of metals by AAS/GTT, testing/method by Techpharm GmbH

In accordance with DIN-EN-ISO 9001: 2015 and 17025: 2005 samples were taken and tested by qualified laboratories under GMP condition.

Results correspond with expected values

Date Signature

04.11.2016

Head of Quality Control

Test item	Expected value	result	evaluation
Setting e-cigarette	Specification		
1. resistance (Ohm)	0,2	0,19-0,20	corresponds
2. wattage (W)	60	60	
Setting sampler			
1. Puff duration	2 sec +/- 0,1	2	corresponds
2. Puff frequency	2/minute	2	
3. Number of puffs	60	60	corresponds
4. negative pressure	100-200mbar	100-200 mbar	
Nicotin content * ¹			
1. Volume e-liquid puffed/60 puffs	>0,2 ml	1,64	corresponds
2. mg nicotin/10ml puffed* ²	Minimum 10% = 16 mg	87	
3. mg nicotin/60 puffs* ³		17,3	
Aldehyde + Keton-Emissions* ⁴	(MAK (mcg/m3)) -> mcg/60 puffs		
1. Formaldehyde	(370) < 83 mcg	7,1 mcg	corresponds
2. Acetaldehyde	(91.000) < 20.475 mcg	14,4 mcg	
3. Acroleine	(250) -> < 56 mcg	1,0 mcg	
4. others (Acetone, Propionaldehyde, Crotonaldehyde, ..)	Single value < 50mcg	16,2 mcg	
Metal-Emissions* ⁵	Mcg/60puffs* ⁶		
1. Al (Aluminium)	No limit	9,3	corresponds
2. Cr (Chromium)	0,29	<0,05	
3. Fe (Iron)	No limit	<0,2	
4. Ni (Nickel)	0,60	<0,2	
5. Sn (Tin)	6,40	<0,1	

*1: E-Cigarette working group discussion paper on submission of notification under article 20 of Directive 2014/40/EU Chapter 4

*2: Nicotine dose in total by inhalation content of 10ml e-liquid under standard conditions

*3: Nicotine uptake of standard smoker smoking 6 cigarettes (10 puffs/cigarette)

*4: E-Cigarette working group discussion paper on submission of notification under article 20 of Directive 2014/40/EU Chapter 6.

Calculation expected value: MAK-Wert (mcg/m3) *0,225 (=breath volume puff duration 60 puffs= 30 minutes)

*5: E-Cigarette working group discussion paper on submission of notification under article 20 of Directive 2014/40/EU Chapter 3 e-cigarettes

*6: Inhalation maximum/day according Guideline for Elemental Impurities Draft 23.Juli.2013 Appendix 2, Table 2.1 x safety factor 10