

**Certificate of analyses/Quality statement****E-cigarette: Atomizers IJOY Limitless XL RTA 2****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                               | 0,11-0,15    | 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           |             |
| 4. negative pressure                                     | 100-200mbar                       | 100-200 mbar |             |
| Nicotin content * <sup>1</sup>                           |                                   |              |             |
| 1. Volume e-liquid puffed/60 puffs                       | >0,2 ml                           | 0,84         | corresponds |
| 2. mg nicotin/10ml puffed* <sup>2</sup>                  | Minimum 10% = 16 mg               | 99           |             |
| 3. mg nicotin/60 puffs* <sup>3</sup>                     |                                   | 10,0         |             |
| Aldehyde + Keton-Emissions* <sup>4</sup>                 | (MAK (mcg/m3))<br>-> mcg/60 puffs |              |             |
| 1. Formaldehyde  | (370) < 83 mcg                    | 9,0 mcg      | corresponds |
| 2. Acetaldehyde  | (91.000) < 20.475 mcg             | 18,9 mcg     |             |
| 3. Acroleine   | (250) -> < 56 mcg                 | 1,3 mcg      |             |
| 4. others (Acetone, Propionaldehyde, Crotonaldehyde, ..) | Single value < 50mcg              | 19,9 mcg     |             |
| Metal-Emissions* <sup>5</sup>                            | Mcg/60puffs* <sup>6</sup>         |              |             |
| 1. Al (Aluminium)  | No limit                          | 24,3         | corresponds |
| 2. Cr (Chromium)   | 0,29                              | <0,05        |             |
| 3. Fe (Iron)   | No limit                          | 0,1          |             |
| 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