
Elektronske cigarete in e-tekočine - Referenčne e-tekočine

Electronic cigarettes and e-liquids - Reference e-liquids

Elektronische Zigaretten und Liquids für elektronische Zigaretten - Referenz-E-Liquids

Cigarettes électroniques et e-liquides - E-liquides de référence

Ta slovenski standard je istoveten z: EN 17375:2020

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ICS:

65.160

Tobak, tobačni izdelki in
oprema

Tobacco, tobacco products
and related equipment

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Electronic cigarettes and e-liquids - Reference e-liquids

Cigarettes électroniques et e-liquides - E-liquides de
référence

Elektronische Zigaretten und Liquids für elektronische
Zigaretten - Referenz-E-Liquids

This European Standard was approved by CEN on 15 June 2020.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 17375:2020) has been prepared by Technical Committee CEN/TC 437 “Electronic cigarettes and e-liquids”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.

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EN 17375:2020 (E)

1 Scope

This document specifies reference e-liquids to be used to test emissions generated by electronic cigarettes [1].

This document applies to the reference e-liquids to be used when an electronic cigarette is sold empty, without an e-liquid, and where the product information or instructions for use are not specific in terms of the compositional characteristics of the e-liquid to be used with the device.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp/ui>

3.1
electronic cigarette
product, that vapourises e-liquid to generate an inhalable aerosol carried by air drawn through the device by the user

Note 1 to entry: Electronic cigarette is also referred to as e-cig, vapour product, vaping product, personal vapouriser or ENDS/ENNDS.

Note 2 to entry: Electronic cigarette differs from tobacco products in that they do not contain tobacco.

3.2
e-liquid

base liquid, which may or may not contain nicotine and/or additives, intended for transformation into an aerosol by an electronic cigarette

3.3
reference e-liquid

e-liquid containing specific ingredients of a known quantity, to be used as a standard

4 Preparation and storage of reference e-liquids

4.1 General

The formulations of two reference e-liquids that shall be used within the scope of this document are given in Table 1.

4.2 Ingredients

4.2.1 Propylene glycol (CAS: 57-55-6), commonly termed (PG), shall comply with the following specific requirements:

NOTE These values are taken from the European Pharmacopeia Monograph. [2]

- purity: 99,5 % or higher;
- diethylene glycol: not more than 0,1 %.

4.2.2 Glycerol (CAS: 56-81-5), commonly termed vegetable glycerine (VG), shall comply with the following specific requirements:

NOTE These values are taken from the European Pharmacopeia Monograph. [3]

- purity: 98,0 % or higher;
- diethylene glycol: not more than 0,1 %;
- total impurities: not more than 0,5 %.

4.2.3 Nicotine or (S)-3-(1-methyl-2-pyrrolidinyl) pyridine (CAS: 54-11-5) shall comply with the following specific requirements:

NOTE These values are taken from the European Pharmacopeia Monograph. [4]

- purity: 99,0 % or higher;
- specific impurities:
 - anatabine: not more than 0,3 %;
 - β -nicotyrine: not more than 0,3 %;
 - myosmine: not more than 0,3 %;
 - nicotine -N-oxide: not more than 0,3 %;
 - nornicotine: not more than 0,3 %;
 - anabasine: not more than 0,3 %;
- unspecified impurities: not more than 0,1 % each;
- total impurities: not more than 0,8 %.

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4.2.4 Ethanol (CAS: 64-17-5) shall not be denatured and shall comply with the following specific requirements:

NOTE These values are taken from the European Pharmacopeia Monograph. [5]

- purity: 95,0 % or higher;
- methanol: not more than 200 ppm (v/v);
- acetaldehyde: not more than 10 ppm (v/v);
- benzene: not more than 2 ppm (v/v).

4.2.5 Water (CAS: 7732-18-5) shall comply with the following specific requirements:

NOTE These values are taken from the European Pharmacopeia Monograph. [6]

- conductivity not greater than 5,1 $\mu\text{S}/\text{cm}$ at 25 °C;
- nitrates: maximum 0,2 ppm;
- microbiological count less than 100 CFU/mL;
- total organic carbon or oxidisable substances: less than 0,5 mg/L.

4.3 Composition of reference e-liquids

4.3.1 To perform tests, there are two reference e-liquids (see 4.3.2 and 4.3.3) and their composition is described in 4.3.4.

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4.3.2 A reference e-liquid, termed 70/30, which contains propylene glycol (PG) (4.2.1) and glycerol (vegetable glycerine) (VG) (4.2.2) in a ratio of 7:3 respectively.

4.3.3 A reference e-liquid, termed 50/50, which contains propylene glycol (PG) (4.2.1) and glycerol (vegetable glycerine) (VG) (4.2.2) in a ratio of 1:1 respectively.

4.3.4 The compositions of the reference e-liquids are detailed in Table 1. Masses are expressed in g per 100 g, and are not corrected for purity of the particular ingredient.

Table 1 — Composition of reference e-liquids

Ingredients	e-liquid 70/30 (g/100 g)	e-liquid 50/50 (g/100 g)
Propylene glycol (PG) (4.2.1)	67,90 \pm 0,50	48,00 \pm 0,50
Glycerol (VG) (4.2.2)	29,10 \pm 0,50	48,00 \pm 0,50
Nicotine (4.2.3)	1,00 \pm 0,05	1,00 \pm 0,05
Ethanol (4.2.4)	1,00 \pm 0,05	1,00 \pm 0,05
Water (4.2.5)	1,00 \pm 0,10	2,00 \pm 0,10

4.4 Storage of reference e-liquids

The maximum expiry date of the reference e-liquids is determined by the earliest expiry date of an individual ingredient.

Reference e-liquids shall be stored under conditions that prevent alteration of their compositions. It is recommended to store at a temperature between 5 °C and 25 °C, away from light sources, and in an airtight (preferably glass) container. Prior to use, the reference e-liquids shall be brought to ambient room temperature.

5 Use of reference e-liquids

5.1 Selection of reference e-liquid

Electronic cigarettes complying with the scope of this document shall be tested with one of the two reference e-liquids listed in Table 1. The manufacturer shall justify the choice made between the two reference e-liquids; as a guide low power devices would be better suited to using the e-liquid with PG/VG 70/30 ratio, and high power devices would be better suited to using the e-liquid with the PG/VG 50/50 ratio. The product information available to the consumer shall indicate which reference e-liquid was used for the emissions testing.

5.2 Period of use after opening

Reference e-liquids should be used within 24 h after opening if stored appropriately.

E-liquids are hygroscopic. Exposing opened containers of e-liquids to ambient atmosphere might change their compositions, so exposure of the reference e-liquids to ambient atmosphere should be minimized.

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