E-liquid - Determination of nicotine, propylene glycol and glycerol in liquids used in electronic nicotine delivery devices - Gas chromatographic method (ISO 20714:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 20714:2021 sisaldab Euroopa standardi EN ISO 20714:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 20714:2021 consists of the English text of the European standard EN ISO 20714:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 15.12.2021.	Date of Availability of the European standard is 15.12.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 65.160

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 20714

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ICS 65.160

English Version

E-liquid - Determination of nicotine, propylene glycol and glycerol in liquids used in electronic nicotine delivery devices - Gas chromatographic method (ISO 20714:2019)

E-liquide - Détermination de la teneur en nicotine, propylène glycol et glycérol dans les liquides utilisés avec les systèmes électroniques de délivrance de nicotine - Méthode par chromatographie en phase gazeuse (ISO 20714:2019)

E-Liquids - Bestimmung von Nikotin, Propylenglycol und Glycerin in Flüssigkeiten, die in elektronischen Nikotinabgabegeräten verwendet werden - Gaschromatographisches Verfahren (ISO 20714:2019)

This European Standard was approved by CEN on 5 December 2021.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 20714:2021 E

European foreword

The text of ISO 20714:2019 has been prepared by Technical Committee ISO/TC 126 "Tobacco and tobacco products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 20714:2021 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 June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 20714:2019 has been approved by CEN as EN ISO 20714:2021 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*, Subcommittee SC 3, *Vape and vapour products*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

E-liquid — Determination of nicotine, propylene glycol and glycerol in liquids used in electronic nicotine delivery devices — Gas chromatographic method

1 Scope

This document specifies an analytical method to quantify the nicotine, propylene glycol and glycerol content in e-liquids by gas chromatography.

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:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
e-liquid
liquid or gel consumable which may or may not contain nicotine intended for transformation into an aerosol and then inhaled with an *electronic nicotine delivery device* (3.2)

3.2
electronic nicotine delivery device
device used to transform an *e-liquid* (3.1) into an inhalable aerosol

4 Principle

The e-liquid sample is diluted with a solution of isopropanol containing internal standard(s). The nicotine, propylene glycol and glycerol content of the diluted sample is analysed by capillary gas chromatography with flame ionization detection (GC-FID) and quantified by using an internal standard.

5 Reagents

Use only reagents of recognized analytical grade.

5.1 Carrier gas: helium (CAS: 7440-59-7) or hydrogen (CAS: 1333-74-0) of high purity.

5.2 Auxiliary gases: hydrogen (CAS: 1333-74-0) of high purity and air for the flame ionization detector.

5.3 Isopropanol (CAS: 67-63-0), minimum purity 99 %, used with internal standard(s) to prepare the dilution solution.