

Vapour products - Determination of nicotine in vapour product emissions - Gas chromatographic method (ISO 24199:2022)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 24199:2022 sisaldab Euroopa standardi EN ISO 24199:2022 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 24199:2022 consists of the English text of the European standard EN ISO 24199:2022.
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.
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English Version

Vapour products - Determination of nicotine in vapour  
product emissions - Gas chromatographic method (ISO  
24199:2022)

Produits de vapotage - Détermination de la teneur en  
nicotine dans les émissions de produits de vapotage -  
Méthode par chromatographie en phase gazeuse (ISO  
24199:2022)

Dampfprodukte - Bestimmung von Nikotin in  
Emissionen von Dampfprodukten -  
Gaschromatographisches Verfahren (ISO 24199:2022)

This European Standard was approved by CEN on 2 July 2022.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## European foreword

This document (EN ISO 24199:2022) has been prepared by Technical Committee ISO/TC 126 "Tobacco and tobacco products" in collaboration with 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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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## Endorsement notice

The text of ISO 24199:2022 has been approved by CEN as EN ISO 24199:2022 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](http://www.iso.org/directives)).

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For an explanation of 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 [www.iso.org/iso/foreword.html](http://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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 437, *Electronic cigarettes and e-liquids*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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## Introduction

In many countries, the regulation of vapour products requires reporting for nicotine compounds in emissions. Therefore, there is a necessity to have an International Standard in place to get reliable/comparable data on nicotine in electronic cigarette emissions.

This document was developed for the determination of nicotine in the aerosol from vapour products utilizing gas chromatography coupled with a flame ionization detector. The experimental design parameters<sup>[1][2]</sup> used to collect the aerosolised vapour should be evaluated and documented for each analysis.

The document is based on the CORESTA recommended method (CRM) 84<sup>[3]</sup>, which was written on the basis of the results obtained in an interlaboratory study conducted in 2015 involving 18 laboratories<sup>[4]</sup> and an interlaboratory study conducted in 2019 involving 11 laboratories<sup>[5]</sup>.

# Vapour products — Determination of nicotine in vapour product emissions — Gas chromatographic method

## 1 Scope

This document specifies an analytical method to quantify nicotine of collected vapour product emissions by gas chromatography.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 20768, *Vapour products — Routine analytical vaping machine — Definitions and standard conditions*

ISO 24197:—,<sup>1)</sup> *Vapour products — Determination of e-liquid vaporised mass and aerosol collected mass*

## 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 <https://www.electropedia.org/>

### 3.1

#### **vapour product**

device intended for human use, which normally contains electronic components that vaporize a liquid to generate an aerosol carried by the air drawn through the device by the user

[SOURCE: ISO 20768:2018, 3.1, modified – Note 1 to entry has been removed]

### 3.2

#### **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

[SOURCE: ISO 20714:2019, 3.1]

### 3.3

#### **aerosol collected mass**

##### **ACM**

mass of aerosol collected on a glass fibre filter pad resulting from the operation of a vapour product by a routine analytical vaping machine after a defined number of puffs

Note 1 to entry: Routine analytical vaping machine is covered by ISO 20768.

1) Under preparation. Stage at the time of publication: ISO/DIS 24197:2022