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Vapour products - Determination of e-liquid vaporised mass and aerosol collected mass (ISO 24197:2022)



## EESTI STANDARDI EESSÕNA

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EUROPEAN STANDARD

EN ISO 24197

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

## Vapour products - Determination of e-liquid vaporised mass and aerosol collected mass (ISO 24197:2022)

Produits de vapotage - Détermination de la masse de e-liquide vaporisé et de la masse d'aérosol collecté (ISO/FDIS 24197:2022)

Dampfprodukte- Bestimmung verdampfter E-Liquid-Masse und gesammelter Aerosolmasse (ISO/FDIS 24197:2022)

This European Standard was approved by CEN on 14 November 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 24197:2022) 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of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.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.

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## Endorsement notice

The text of ISO 24197:2022 has been approved by CEN as EN ISO 24197:2022 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 related e-liquids*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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](http://www.iso.org/members.html).

## Introduction

Technical investigation of vapour products requires determining aerosol collected mass (ACM) and e-liquid vaporized mass (EVM) measurements in emissions. Therefore, there is a necessity to have an International Standard in place to get reliable/comparable data on ACM and EVM in electronic cigarette emissions.

The method in this document is based upon the CORESTA recommended method (CRM) 84,<sup>[1]</sup> which was written on the basis of the results obtained from interlaboratory studies conducted in 2015<sup>[2]</sup> and 2019<sup>[3]</sup> involving 18 and 11 laboratories, respectively.

This document has been developed to describe the procedures used to measure the amount of ACM and EVM in the aerosol from vapour products utilizing a gravimetric method. The experimental design parameters<sup>[4][5]</sup> used to collect the aerosolised vapour should be evaluated and documented for each analysis.

# Vapour products — Determination of e-liquid vaporised mass and aerosol collected mass

## 1 Scope

This document specifies a method of measurement of the masses of e-liquid vaporised and the aerosol collected from vapour product(s).

It does not specify the vapour product(s), the vapour product(s) operational settings or, e-liquid to be used.

NOTE Application of this document can be required as a preliminary step for subsequent analyses.

## 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*

## 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

#### 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.

### 3.2

#### puff block

finite series of sequential puffs as defined by the test request

EXAMPLE Puff block 1: puffs 1 to 50, puff block 2: puffs 51 to 100, puff block 3: puffs 101 to 150

### 3.3

#### e-liquid vaporised mass

##### EVM

mass of e-liquid transferred from the vapour product to the aerosol

Note 1 to entry: The term “vapour product mass loss” or “mass loss” refers to the e-liquid vaporised mass.