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STN	**Parné výrobky Stanovenie vybraných karbonylov v emisiách parných výrobkov (ISO 24211: 2022)**	**STN EN ISO 24211** 56 9592

Vapour products - Determination of selected carbonyls in vapour product emissions (ISO 24211:2022)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/22

Obsahuje: EN ISO 24211:2022, ISO 24211:2022

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 24211

September 2022

ICS 65.160

English Version

Vapour products - Determination of selected carbonyls in vapour product emissions (ISO 24211:2022)

Produits de vapotage - Dosage de carbonyles sélectionnés dans les émissions de produits de vapotage (ISO 24211:2022)

Dampfprodukte - Bestimmung von ausgewählten Carbonylen in Emissionen von Dampfprodukten (ISO 24211:2022)

This European Standard was approved by CEN on 30 August 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 24211:2022) 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of an identical text or by endorsement, at the latest by March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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Endorsement notice

The text of ISO 24211:2022 has been approved by CEN as EN ISO 24211:2022 without any modification.

INTERNATIONAL STANDARD

ISO 24211

First edition
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Vapour products — Determination of selected carbonyls in vapour product emissions

Produits de vapotage — Dosage de carbonyles sélectionnés dans les émissions de produits de vapotage

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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 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.

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).

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.

Introduction

In many countries, regulation of vapour products requires reporting for carbonyl compounds in emissions. Therefore, there is a necessity to have an International Standard in place to get reliable/comparable data for selected carbonyls in vapour product emissions.

The method in this document is based upon the CORESTA recommended method CRM 96[1] which was written on the basis of the results obtained in an interlaboratory study conducted in 2019 involving 11 laboratories.

Carbonyl compounds are known to be derived from the thermal degradation of the base ingredients of the e-liquid formulations. The experimental design parameters [2],[3] used to collect the aerosolised vapour should be evaluated and documented for each analysis.

INTERNATIONAL STANDARD ISO 24211:2022(E)

Vapour products — Determination of selected carbonyls in vapour product emissions

WARNING — The use of this document can involve hazardous materials, operations and equipment. This document does not purport to address all the safety problems associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices, and determine the applicability of any other restrictions prior to use.

1 Scope

This document specifies a method for the determination of the amount of selected carbonyl compounds (formaldehyde and acetaldehyde) as their 2,4-dinitrophenylhydrazones in vapour product emissions using reversed phase liquid chromatography coupled with ultraviolet or diode array detector (LC-UV or LC-DAD).

This document does not include the analysis of other carbonyl compounds, such as acrolein and crotonaldehyde, due to previous work indicated issues associated with stability of these compounds in the e-liquid solutions that were used to evaluate method performance[4].

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 3696, *Water for analytical laboratory use — Specification and test methods*

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

ISO 24197:—[1)], *Vapour products — Determination of e-liquid vaporised mass and aerosol collected mass*