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Cigarettes — Determination of carbon monoxide in the vapour phase of cigarette smoke with an intense smoking regime — NDIR method

Cigarettes — Dosage du monoxyde de carbone dans la phase gazeuse de la fumée de cigarette obtenue avec un régime de fumage intense — Méthode IRND

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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*.

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.

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Introduction

Historically, a set of ISO standards have been developed to specify the requirements of analytical cigarette smoking machines and their use for the quantitative determination of a number of cigarette smoke constituents (such as total particulate matter, nicotine-free dry particulate matter, water, nicotine or benzo[a]pyrene) with a unique standard smoking regime. The description of this smoking regime is provided in ISO 3308.

Later, requirements to provide smoke constituents data with an intense smoking regime, different from the ISO 3308 standard smoking regime, originated from different countries and the Conferences of the Parties to the Framework Convention on Tobacco Control, resulting in a need to specify the conditions for the use of the intense smoking regime on analytical cigarette-smoking machines. The specifications for the use of the intense smoking regime on analytical cigarette-smoking machines are provided in ISO 20778.

This document took into account practical work conducted in the framework of an interlaboratory study involving 35 laboratories (published as ISO/TR 19478-1 and ISO/TR 19478-2). It provides specifications for the determination of carbon monoxide in the vapour phase of cigarette smoke obtained with an intense smoking regime using NDIR method.

No machine smoking regime can represent all human smoking behaviour.

— It is recommended that cigarettes also be tested under conditions of a different intensity of machine smoking than those specified in this document.

— Machine smoking testing is useful to characterize cigarette emissions for design and regulatory purposes, but communication of machine measurements to smokers can result in misunderstandings about differences in exposure and risk across brands.

— Smoke emission data from machine measurements may be used as inputs for product hazard assessment, but they are not intended to be nor are they valid as measures of human exposure or risks. Communicating differences between products in machine measurements as differences in exposure or risk is a misuse of testing using ISO standards.

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Cigarettes — Determination of carbon monoxide in the vapour phase of cigarette smoke with an intense smoking regime — NDIR method

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1 Scope

This document specifies a method for determination of carbon monoxide (CO) in the vapour phase of cigarette smoke with an intense smoking regime.

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 3402, *Tobacco and tobacco products — Atmosphere for conditioning and testing*

ISO 20778, *Cigarettes — Routine analytical cigarette smoking machine — Definitions and standard conditions with an intense smoking regime*

ISO 20779, *Cigarettes — Generation and collection of total particulate matter using a routine analytical smoking machine with an intense smoking regime*

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
vapour phase
portion of smoke, which passes the particulate phase trap during smoking in accordance with ISO 20779 using a machine conforming to ISO 20778

[SOURCE: ISO 8454:2007, 3.1, modified — ISO 4387 and ISO 3308 have been replaced by ISO 20779 and ISO 20778 respectively.]

3.2
clearing puff
any puff taken after a cigarette has been extinguished or removed from the cigarette holder

[SOURCE: ISO 20778:2018, 3.22]

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