Stationary source emissions - Determination of total mercury - Automated measuring systems

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 14884:2022 sisaldab Euroopa standardi EN 14884:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 14884:2022 consists of the English text of the European standard EN 14884:2022.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.12.2022.	Date of Availability of the European standard is 14.12.2022.
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 13.040.40

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14884

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Supersedes EN 14884:2005

English Version

Stationary source emissions - Determination of total mercury - Automated measuring systems

Émissions de sources fixes - Détermination de la concentration en mercure total - Systèmes de mesurage automatisés

Emissionen aus stationären Quellen - Bestimmung der Gesamtquecksilber-Konzentration - Automatische Messeinrichtungen

This European Standard was approved by CEN on 14 November 2022.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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, Türkiye and United Kingdom.

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

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Contents

Page

European foreword

This document (EN 14884:2022) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

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 2023, and conflicting national standards shall be withdrawn at the latest by June 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.

This document supersedes EN 14884:2005.

Annex B provides details of significant technical changes between this document and the previous edition.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Türkiye and the United Kingdom.

Introduction

This document describes the quality assurance procedures related to automated measuring systems (AMS) for the determination of total mercury in waste gas, in order to meet the uncertainty requirements on measured values given by regulations, e.g. EU Directives [1], national or other legislation.

This document is derived from EN 14181, which specifies general procedures for establishing quality assurance levels (QAL) for AMS installed on industrial plants for the determination of the flue gas components and other flue gas parameters. It amends EN 14181 and provides guidance specific to total mercury measurements. It is only applicable in conjunction with EN 14181.

The calibration and validation of mercury AMS that measure the total vapour phase mercury content is based on parallel measurements with the manual method described in EN 13211. The species of mercury (elemental Hg^0 and oxidized Hg^{2+}) and the physical occurrence (gaseous, dust-bound or within droplets) can vary significantly depending on the type of process to be monitored and this is taken into account when implementing the SRM.

1 Scope

This document specifies requirements for the calibration and validation (QAL2), the ongoing quality assurance during operation (QAL3) and the annual surveillance test (AST) of AMS used for monitoring total mercury emissions from stationary sources to demonstrate compliance with an emission limit value (ELV). This document is derived from EN 14181 and is only applicable in conjunction with EN 14181.

This document is applicable by direct correlation with the standard reference method (SRM) described in EN 13211.

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.

EN 13211, *Air quality — Stationary source emissions — Manual method of determination of the concentration of total mercury*

EN 14181:2014, *Stationary source emissions — Quality assurance of automated measuring systems*

EN 17255-1, *Stationary source emissions — Data acquisition and handling systems — Part 1: Specification of requirements for the handling and reporting of data*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13211 and EN 14181 apply.

ISO and IEC maintain terminology 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/

4 Symbols and abbreviations

4.1 Symbols

a	intercept of the calibration function
$\hat{a}$	best estimate of a
b	slope of the calibration function
$\hat{b}$	best estimate of b
D_i	difference between SRM value, y_i and calibrated AMS value $\hat{y}_i$
$\overline{D}$	average of D_i
E	emission limit value
h	water vapour content (by volume)
i	counter
N	number of paired samples in parallel measurements
k_v	test value for variability