

Foodstuffs - Determination of trace elements - Part 3:
Determination of total mercury in foodstuffs with
atomic absorption directly from the foodstuff
(elemental mercury analysis)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Foodstuffs - Determination of trace elements - Part 3:
Determination of total mercury in foodstuffs with atomic
absorption directly from the foodstuff (elemental mercury
analysis)**

Produits alimentaires - Dosage des éléments-traces -
Partie 3 : Dosage du mercure total par absorption
atomique directe (analyse du mercure élémentaire)

Lebensmittel - Bestimmung von Elementspuren - Teil
3: Bestimmung des Gesamtquecksilbers in
Lebensmitteln durch Atomabsorption direkt aus dem
Lebensmittel (Elementare Quecksilberanalyse)

This European Standard was approved by CEN on 17 February 2025.

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

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European foreword

This document (EN 13806-3:2025) has been prepared by Technical Committee CEN/TC 275 “Food analysis – Horizontal methods”, 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of an identical text or by endorsement, at the latest by September 2025, and conflicting national standards shall be withdrawn at the latest by September 2025.

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 will supersede EN 13806:2002.

The main changes compared to the previous edition are listed below:

- the document has been split up into three separate parts: EN 13806-1 covering the AAS-cold-vapour technique, EN 13806-2 the AFS-cold-vapour technique and EN 13806-3 the solid sample AAS technique;
- full technical revision to bring the technical realization up to date with the latest technology;
- Stabilization of the digest solution;
- Update of statistical data by new interlaboratory study.

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.

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Introduction

This document has been developed in parallel with EN 13806-1 [2] and EN 13806-2 [3]. All three methods were validated in parallel in interlaboratory studies with the same scope. They are statistically compatible in performances. This allows the users of these documents to employ the most appropriate/available method depending on the purpose of their studies. The statistical parameters of these standards are presented in the respective documents.

1 Scope

This document specifies a method for the determination of total mercury (Hg) in foodstuffs using direct atomic absorption spectrometry after thermal decomposition in an oxygen or air flow and concentration by amalgam formation. The method is applicable for solid and liquid samples.

This method was tested in a interlaboratory study carried out on seven different materials with a mercury concentration in the range from 0,005 mg/kg to 5,20 mg/kg and successfully validated in this range.

The following foodstuffs were analysed:

- Saithe (dried);
- Celery (dried);
- Wheat noodle powder;
- Wild mushrooms (dried);
- Pig liver (dried);
- Cacao powder;
- Tuna fish (dried).

The lower limit of the method's applicability varies depending on the food matrix and the water content of the foodstuff. It is a laboratory-specific value and is defined by the laboratory when calculating the limit of quantification (see 9.2).

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 13804, *Foodstuffs - Determination of elements and their chemical species - General considerations and specific requirements*

3 Terms and definitions

No terms and definitions are listed in this document.

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 Principle

The samples to be analysed are weighed directly - without pressure digestion - into suitable sample containers and are thermally decomposed in the analyser system in an oxygen atmosphere at approx. 700 °C. The resulting reaction gases are catalytically cleaned together with the mercury vapour, and the