

English Version

Foodstuffs - Guidelines for the calibration and quantitative determination of pesticide residues and organic contaminants using chromatographic methods

Produits alimentaires - Lignes directrices pour l'étalonnage et le dosage des résidus de pesticides et contaminants organiques par des méthodes chromatographiques

Lebensmittel - Anleitung zur Kalibrierung und quantitativer Bestimmung von Pflanzenschutzmittelrückständen und organischen Kontaminanten mit chromatographischen Verfahren

This Technical Specification (CEN/TS) was approved by CEN on 14 July 2019 for provisional application.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (CEN/TS 17061:2019) has been prepared by Technical Committee CEN/TC 275 “Food analysis - Horizontal methods”, the secretariat of which is held by DIN.

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This document will supersede CEN/TS 17061:2017.

Compared to CEN/TS 17061:2017, the following changes have been made:

- Annex A (informative) containing a list of abbreviations was added;
- The document has been editorially revised.
- Annex A (informative) contains a list of abbreviations.

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1 Scope

This Technical Specification gives guidelines for the execution of calibration and quantitative evaluation of chromatographic procedures for the determination of pesticides and organic contaminants in residue analysis. In addition, the essential requirements for calibration are outlined.

The calibration of analytical procedures and the evaluation of analytical results need to be conducted according to uniform principles in order to allow for a comparison of analytical results (even from different analytical procedures). They constitute the basis of any method validation and of the quality assurance within laboratories [1], [2], [3].

This Technical Specification does not consider issues of identification/qualification and extraction efficiency.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Principle

This document describes the approach for the calibration of chromatographic procedures. The following types of calibration are discussed in more detail:

- external calibration with linear calibration function;
- external calibration with quadratic calibration function;
- calibration with internal standard and linear calibration function;
- calibration with internal standard and quadratic calibration function;
- calibration with standards labelled with stable isotopes (isotopic dilution analysis);
- standard addition to final extract;
- standard addition to sample.

For this purpose, the calibration function and the selection criteria are illustrated on the basis of examples. The calculation formulae refer to the final extract ready for analysis ("test solution").

The description is rounded off by essential items of quality assurance, e.g. the qualification of chromatographic systems or the quality control chart.

5 General

Calibration of a system is understood as the determination of a functional relationship between a measurable quantity and a concentration to be determined. The chosen type of calibration depends on