Water quality - Determination of selected plant treatment agents and biocide products - Method using solid-phase microextraction (SPME) followed by gas chromatography-mass spectrometry (GC-MS) (ISO 27108:2010)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 27108:2013 sisaldab Euroopa standardi EN ISO 27108:2013 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 27108:2013 consists of the English text of the European standard EN ISO 27108:2013.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.08.2013.	Date of Availability of the European standard is 21.08.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Water quality - Determination of selected plant treatment agents and biocide products - Method using solid-phase microextraction (SPME) followed by gas chromatography-mass spectrometry (GC-MS) (ISO 27108:2010)

Qualité de l'eau - Détermination d'agents de traitement et de produits d'usine sélectionnés - Méthode utilisant une micro-extraction en phase solide (MEPS) suivie d'une chromatographie en phase gazeuse-spectrométrie de masse (CG-SM) (ISO 27108:2010)

Wasserbeschaffenheit - Bestimmung ausgewählter Pflanzenschutzmittel und Biozidprodukte - Verfahren mittels Festphasenmikroextraktion (SPME) gefolgt von der Gaschromatographie und Massenspektrometrie (GC-MS) (ISO 27108:2010)

This European Standard was approved by CEN on 12 April 2013.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 27108:2013: E

Foreword

The text of ISO 27108:2010 has been prepared by Technical Committee ISO/TC 147 “Water quality” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 27108:2013 by Technical Committee CEN/TC 230 “Water analysis” 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 February 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 27108:2010 has been approved by CEN as EN ISO 27108:2013 without any modification.

Contents

Page

Introduction

In recent years, ground water contamination as well as surface water contamination by pesticides has become a matter of public concern. Identification and quantification of pesticides at trace level concentrations often require both high sensitive chromatographic equipment and effective enrichment steps. In the analysis of aqueous samples, sample preparation techniques including solid-phase extraction (SPE) are frequently the most time-consuming steps and in many cases can be effectively replaced by solid-phase microextraction (SPME).

When using this International Standard, it may be necessary in some cases to determine whether and to what extent particular problems could require the specification of additional marginal conditions.

Water quality — Determination of selected plant treatment agents and biocide products — Method using solid-phase microextraction (SPME) followed by gas chromatography-mass spectrometry (GC-MS)

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This International Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted according to this International Standard be carried out by suitably trained staff.

1 Scope

This International Standard specifies a method for the determination of the dissolved amount of selected plant treatment agents and biocide products in drinking water, ground water and surface water by solid-phase microextraction (SPME) followed by gas chromatography-mass spectrometry (GC-MS). The limit of determination depends on the matrix, on the specific compound to be analysed and on the sensitivity of the mass spectrometer. For most plant treatment agents and biocides to which this International Standard applies, it is at least 0,05 µg/l. Validation data related to a concentration range between 0,05 µg/l and 0,3 µg/l have been demonstrated in an interlaboratory trial.

This method may be applicable to other compounds not explicitly covered by this International Standard or to other types of water. However, it is necessary to verify the applicability of this method for these special cases.

NOTE Determinations by this International Standard are performed on small sample amounts (e.g. sample volumes between 8 ml and 16 ml).

2 Normative references

The following referenced documents are indispensable for the application 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 5667-1, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques*

ISO 5667-3, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of water samples*

3 Principle

Substances under investigation are extracted from the water sample by solid-phase microextraction (SPME) according to their equilibrium of distribution. The extraction is performed by a chemically modified fused-silica