

Vee kvaliteet. Lühikese ahelaga polüklooritud alkaanide (SCCP) määramine vees negatiivse keemilise ionisatsiooniga (NCI) gaasikromatograafia-massispektromeetria (GC-MS) meetodil

Water quality - Determination of short-chain polychlorinated alkanes (SCCPs) in water - Method using gas chromatography-mass spectrometry (GC-MS) and negative-ion chemical ionization (NCI) (ISO 12010:2012)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 12010:2014 sisaldab Euroopa standardi EN ISO 12010:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 12010:2014 consists of the English text of the European standard EN ISO 12010:2014.
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Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.04.2014.	Date of Availability of the European standard is 16.04.2014.
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English Version

Water quality - Determination of short-chain polychlorinated alkanes (SCCPs) in water - Method using gas chromatography-mass spectrometry (GC-MS) and negative-ion chemical ionization (NCI) (ISO 12010:2012)

Qualité de l'eau - Détermination des alcanes polychlorés à chaîne courte (SCCP) dans l'eau - Méthode par chromatographie gazeuse-spectrométrie de masse (GC-MS) avec ionisation chimique négative (ICN) (ISO 12010:2012)

Wasserbeschaffenheit - Bestimmung von kurzkettigen Chloralkanen (SCCP) in Wasser - Verfahren mittels Gaschromatographie-Massenspektrometrie (GC-MS) und negativer chemischer Ionisation (NCI) (ISO 12010:2012)

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Foreword

The text of ISO 12010:2012 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 12010:2014 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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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Endorsement notice

The text of ISO 12010:2012 has been approved by CEN as EN ISO 12010:2014 without any modification.

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Introduction

The user should be aware that particular problems might require the specifications of additional marginal conditions.

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Water quality — Determination of short-chain polychlorinated alkanes (SCCPs) in water — Method using gas chromatography-mass spectrometry (GC-MS) and negative-ion chemical ionization (NCI)

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 in accordance to this International Standard be carried out by suitably qualified staff.

1 Scope

This International Standard specifies a method for the quantitative determination of the sum of short-chain polychlorinated *n*-alkanes, also known as short-chain polychlorinated paraffins (SCCPs), in the carbon bond range *n*-C₁₀ to *n*-C₁₃ inclusive, in mixtures with chlorine mass fractions ("contents") between 49 % and 67 %, including approximately 6 300 of approximately 8 000 congeners.

This method is applicable to the determination of the sum of SCCPs in unfiltered surface water, ground water, drinking water and waste water using gas chromatography-mass spectrometry with electron capture negative ionization (GC-ECNI-MS).

The method can be applied to samples containing 0,1 µg/l to 10 µg/l. Depending on the waste water matrix, the lowest detectable concentration is estimated to be >0,1 µg/l.

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 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: Preservation and handling of water samples*

ISO 8466-1, *Water quality — Calibration and evaluation of analytical methods and estimation of performance characteristics — Part 1: Statistical evaluation of the linear calibration function*

ISO/TS 13530, *Water quality — Guidance on analytical quality control for chemical and physicochemical water analysis*

3 Principle

Determination of the sum of SCCPs in the carbon bond range *n*-C₁₀ to *n*-C₁₃ inclusive, in technical and environmental transposed mixtures with chlorine mass fractions ("contents") between 49 % and 67 % (e.g. approximately 3 to 10 chlorine atoms per molecule) and independent of the C-number distribution pattern of the congeners. No recognition of the chlorine content is necessary.

SCCPs in whole water samples are fortified with an internal standard and extracted using liquid-liquid extraction with an organic solvent. The sample enrichment procedure is followed by a clean-up procedure to eliminate interfering compounds. Gas chromatography (GC) is undertaken using a short capillary column within a short