
**Water quality — Determination
of short-chain polychlorinated
alkanes (SCCPs) in sediment, sewage
sludge and suspended (particulate)
matter — Method using gas
chromatography-mass spectrometry
(GC-MS) and electron capture
negative ionization (ECNI)**

*Qualité de l'eau — Détermination des alcanes polychlorés à chaîne
courte dans les sédiments et matières en suspension (particules) —
Méthode par chromatographie en phase gazeuse-spectrométrie de
masse (CPG-SM) et ionisation chimique négative (ICN)*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The committee responsible for this document is ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

Introduction

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

Water quality — Determination of short-chain polychlorinated alkanes (SCCPs) in sediment, sewage sludge and suspended (particulate) matter — Method using gas chromatography-mass spectrometry (GC-MS) and electron capture negative ionization (ECNI)

WARNING — Persons using this document should be familiar with normal laboratory practice. This document 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 with this document 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 50 % and 67 %, including approximately 6 000 of approximately 8 000 congeners.

This method is applicable to the determination of the sum of SCCPs in sediment and suspended (particulate) matter, sewage sludge, and soil using gas chromatography-mass spectrometry with electron capture negative ionization (GC-ECNI-MS).

Depending on matrix and the detection capabilities of the GC-ECNI-MS, the method can be applied to samples containing, e.g. 0,03 µg/g to 3 µg/g sum of SCCPs.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5667-12, *Water quality — Sampling — Part 12: Guidance on sampling of bottom sediments*

ISO 5667-13, *Water quality — Sampling — Part 13: Guidance on sampling of sludges*

ISO 5667-17, *Water quality — Sampling — Part 17: Guidance on sampling of bulk suspended solids*

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 12010, *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/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 50 % and 67 %