# ISO 12010:2019 (E)

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

## Contents


Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Principle

5 Interferences

6 Reagents and standards

- 6.1 Solvents for extraction and preparation of stock solutions
- 6.2 Reference SCCP stock solutions
- 6.3 Internal standard stock solutions from individual congeners
- 6.4 Calibration solutions
- 6.5 Extraction auxiliary and clean-up materials

7 Apparatus

8 Sampling and sample pretreatment

9 Procedure

- 9.1 Extraction with liquid-liquid extraction
- 9.2 Extraction with higher content of suspended matter
- 9.3 Extract clean-up
- 9.4 Measurement and integration of the chromatogram
- 9.5 Calibration
- 9.5.1 General
- 9.5.2 Basic calibration
- 9.5.3 Identification and quantification with mass fragment combinations
- 9.5.4 Calculation of the results
- 9.5.5 Quality checks for internal standardization

10 Expression of results

11 Test report

Annex A (normative) Independent quality control check solutions

Annex B (informative) Explanation of the calibration of the sum of SCCPs with multiple linear regression

- B.1 Common calibration with linear regression and inverse calibration
- B.2 Multiple linear regression calibration
- B.3 Multiple regression calibration to analyse the sum of SCCPs
- B.4 Mass spectrometric interpretation of the selected mass ions

Annex C (informative) Typical GC-MS conditions

C.1 Example 1
C.2 Example 2
C.3 Example 3
C.4 Example 4

Annex D (informative) Typical chromatograms of standard solutions and quality control check solutions 1 µg/ml

Annex E (informative) Presentation of goodness of fit

Annex F (normative) Alternative clean-up with column chromatography

F.1 Reagents
F.2 Extract clean-up procedure
F.3 Interferences with chlorinated chemicals (technical products)

Annex G (informative) Alternative clean-up with gel chromatography

Annex H (informative) Chromatograms of real SPM samples

Annex I (informative) Performance data

I.1 Performance data of ISO 12010:2012
I.2 Performance data of this document

Page count: 42