INTERNATIONAL STANDARD

ISO 18857-2

First edition
2009-09-15

Water quality — Determination of selected alkylphenols —

Part 2: Gas chromatographic-mass spectrometric determination of alkylphenols, their ethoxylates and bisphenol A in non-filtered samples following solid-phase extraction and derivatisation

Qualité de l'eau — Dosage d'alkylphénols sélectionnés —

Partie 2: Dosage par chromatographie en phase gazeuse-spectrométrie de masse d'alkylphénols, de leurs éthoxylates et de bisphénol A dans des échantillons non filtrés après extraction en phase solide et dérivation

Reference number
ISO 18857-2:2009(E)

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Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 18857-2 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

ISO 18857 consists of the following parts, under the general title *Water quality — Determination of selected alkylphenols*:

— *Part 1: Method for non-filtered samples using liquid-liquid extraction and gas chromatography with mass selective detection*

— *Part 2: Gas chromatographic-mass spectrometric determination of alkylphenols, their ethoxylates and bisphenol A in non-filtered samples following solid-phase extraction and derivatisation*

Introduction

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

Water quality — Determination of selected alkylphenols —

Part 2:
Gas chromatographic-mass spectrometric determination of alkylphenols, their ethoxylates and bisphenol A in non-filtered samples following solid-phase extraction and derivatisation

WARNING — Persons using this part of ISO 18857 should be familiar with normal laboratory practice. This part of ISO 18857 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 part of ISO 18857 be carried out by suitably qualified staff.

1 Scope

This part of ISO 18857 specifies a gas chromatographic-mass spectrometric (GC-MS) determination of selected alkylphenols, their ethoxylates and bisphenol A in non-filtered samples of drinking, ground, surface, and waste waters following solid-phase extraction and derivatisation.

The lower limit of the working range depends on the matrix, on the specific compound to be analysed and on the sensitivity of the mass spectrometric detection unit. The method is applicable in a working range from 0,005 µg/l to 0,2 µg/l for 4-(1,1,3,3-tetramethylbutyl)phenol (OP), and its mono- (OP_1EO) and diethoxylate (OP_2EO), from 0,03 µg/l to 0,2 µg/l for 4-nonylphenol (mixture of isomers) (NP), and its mono- (NP_1EO) and diethoxylate (NP_2EO), and from 0,05 µg/l to 0,2 µg/l for bisphenol A (BPA).

Depending on the matrix, the method is also applicable to waste water in a working range from 0,1 µg/l to 50 µg/l for OP, OP_1EO, OP_2EO and BPA, and from 0,5 µg/l to 50 µg/l for NP, NP_1EO and NP_2EO. The working ranges are based on experimental work carried out in ruggedness testing. Water samples containing suspended matter at concentrations of more than 500 mg/l and waste water samples are extracted by passing a 100 ml sample through the cartridge.

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*

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*