Water quality - Determination of the methylene blue active substances (MBAS) index - Method using continuous flow analysis (CFA) (ISO 16265:2009)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 16265

February 2012

ICS 13.060.50

English Version

Water quality - Determination of the methylene blue active substances (MBAS) index - Method using continuous flow analysis (CFA) (ISO 16265:2009)

Qualité de l'eau - Mesurage de l'indice des substances actives au bleu de méthylène (SABM) - Méthode par analyse en flux continu (CFA) (ISO 16265:2009)

Wasserbeschaffenheit - Bestimmung des Indexes von methylenblauaktiven Substanzen (MBAS) - Verfahren mittels kontinuierlicher Durchflussanalyse (CFA) (ISO 16265:2009)

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Ref. No. EN ISO 16265:2012: E

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Foreword

The text of ISO 16265:2009 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 16265:2012 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of an identical text or by endorsement, at the latest by August 2012, and conflicting national standards shall be withdrawn at the latest by August 2012.

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Endorsement notice

The text of ISO 16265:2009 has been approved by CEN as a EN ISO 16265:2012 without any modification.

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Introduction

Methods using flow analysis automate wet chemical procedures and are particularly suitable for the processing of many analytes in water in large numbers of samples at a high analysis frequency (up to 100 samples per hour).

A differentiation is made between flow injection analysis (FIA) [1], [2] and continuous flow analysis (CFA) [3]. Both methods share the feature of an automatic dosage of the sample into a flow system (manifold) where the analytes in the sample react with the reagent solutions on their way through the manifold. The sample preparation may be integrated in the manifold. The reaction product is measured in a flow detector (e.g. a photometer). The detector produces a signal from which the concentration of the parameter is calculated.

The MBAS (methylene blue active substances) index is an analytical convention (a method-defined parameter) used for water quality control purposes. It measures surfactants and other substances that react with methylene blue under specified conditions.

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

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WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This 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 with this International Standard be carried out by suitably trained staff.

Trichloromethane and methanol waste solutions should be disposed of properly.

1 Scope

This International Standard specifies a procedure for the determination of the methylene blue active substances (MBAS) index, in the ranges 0,05 mg/l to 0,5 mg/l and 0,5 mg/l to 5,0 mg/l, in various water samples (e.g. ground water, drinking water, surface water, waste water and leachates). Anionic surfactants are the most important substances showing methylene blue activity. This method is therefore useful for estimating the anionic surfactant content [including anionic surfactants with carboxylate groups (e.g. soaps)] of water. Other types of substance may also show methylene blue activity and contribute to the result. On a case-by-case basis, the range of the analysis may be changed and the method used for other concentration ranges provided they cover exactly one decade of concentration units.

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 reference document (including any amendments) applies.

ISO 648, *Laboratory glassware — Single-volume pipettes*

ISO 1042, *Laboratory glassware — One-mark volumetric flasks*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

3 Interferences

The following substances can interfere with the analysis:

— Cationic compounds able to form strong ion-pairs with the active substances in methylene blue.

— Humic acids in concentrations > 20 mg/l.

— Chemicals with a high surface activity (e.g. non methylene blue active surfactants in concentrations > 50 mg/l).

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