

---

---

**Water quality — Determination of the  
methylene blue active substances  
(MBAS) index — Method using  
continuous flow analysis (CFA)**

*Qualité de l'eau — Mesurage de l'indice des substances actives au bleu  
de méthylène (SABM) — Méthode par analyse en flux continu (CFA)*



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

Foreword.....	iv
Introduction .....	v
1 Scope .....	1
2 Normative references .....	1
3 Interferences .....	1
4 Principle .....	2
5 Reagents .....	2
6 Apparatus .....	4
7 Sampling and sample pretreatment .....	5
8 Procedure .....	5
9 Calculation of the results .....	7
10 Expression of results .....	8
11 Precision .....	8
12 Test report .....	8
Annex A (informative) Example of a flow diagram for the determination of MBAS index by continuous flow analysis (CFA) .....	9
Annex B (informative) Precision data.....	10
Bibliography .....	11

## 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 16265 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

## 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.

This document is a preview generated by EVS

# Water quality — Determination of the methylene blue active substances (MBAS) index — Method using continuous flow analysis (CFA)

**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).