

INTERNATIONAL STANDARD

ISO
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Water quality — Determination of surfactants —

Part 1:

Determination of anionic surfactants by
measurement of the methylene blue index
(MBAS)

Qualité de l'eau — Dosage des agents de surface —

*Partie 1: Dosage des agents de surface anioniques par mesurage de
l'indice au bleu de méthylène (indice SABM)*



Reference number
ISO 7875-1:1996(E)

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.

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.

International Standard ISO 7875-1 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical, biochemical methods*.

This second edition cancels and replaces the first edition (ISO 7875-1:1984, of which it constitutes a technical revision).

ISO 7875 consists of the following parts, under the general title *Water quality — Determination of surfactants*:

- *Part 1: Determination of anionic surfactants by measurement of the methylene blue index (MBAS)*
- *Part 2: Determination of non-ionic surfactants using Dragendorff reagent*

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Introduction

Natural and synthetic anionic surface-active substances may be determined as methylene-blue active substances (MBAS); they are referred to as MBAS index, a summary parameter.

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Water quality — Determination of surfactants —

Part 1:

Determination of anionic surfactants by measurement of the methylene blue index (MBAS)

1 Scope

This part of ISO 7875 specifies a spectrometric method for the determination of anionic surfactants by measurement of the methylene blue index (MBAS) in aqueous media.

The method is applicable to drinking water, surface water as well as waste water, for example for the determination of the primary degradation of surfactants under investigation in test systems containing natural or synthetic waste water. It applies for both laboratory scale and technical waste-water treatment plants.

In the case of effluents originating from municipal waste-water treatment plants, the MBAS index comprises not only synthetic but also, to a considerable extent, natural anionic surface active substances

This method is applicable to a range of concentrations from 0,1 mg/l to 5,0 mg/l and the limit of detection is about 0,05 mg/l for solutions of standard surfactants in distilled water

Under the experimental conditions, sulfonates and sulfates are the compounds chiefly measured, but some positive and negative interferences may occur (see clause 9).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7875. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7875 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5667-2:1991, *Water quality — Sampling — Part 2: Guidance on sampling techniques*.

ISO 5667-3:1994, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples*.

3 Principle

Formation of salts from methylene blue and anionic surfactants in an alkaline medium. Extraction of these salts with chloroform and acid treatment of the chloroform solution. Elimination of any interferences by extraction of the anionic surfactant-methylene blue complex from alkaline solutions and shaking with acidic methylene blue solution.