INTERNATIONAL STANDARD

ISO 11348-2

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Water quality — Determination of the inhibitory effect of water samples on the light emission of *Vibrio fischeri* (Luminescent bacteria test) —

Part 2:
Method using liquid-dried bacteria

Qualité de l'eau — Détermination de l'effet inhibiteur d'échantillons d'eau sur la luminescence de Vibrio fischeri *(Essai de bactéries luminescentes) —*

Partie 2: Méthode utilisant des bactéries déshydratées

Reference number
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Contents

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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.

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 11348-2 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 5, *Biological methods*.

ISO 11348 consists of the following parts, under the general title *Water quality — Determination of the inhibitory effect of water samples on the light emission of* Vibrio fischeri *(Luminescent bacteria test)* :

— *Part 1: Method using freshly prepared bacteria*

— *Part 2: Method using liquid-dried bacteria*

— *Part 3: Method using freeze-dried bacteria*

Annexes A, B and C of this part of ISO 11348 are for information only.

Introduction

Measurements according to this International Standard can be carried out using freshly prepared bacteria, as well as freeze-dried or liquid-dried bacterial preparations.

Standardized work carried out by DIN NAW WI and ISO/TC 147/SC 5 WG 1 has shown that in special cases these different techniques may give different results, especially where water samples contain heavy metals.

Such varying sensitivity is caused by differences in media composition used in the preparation of freeze-dried or liquid-dried bacteria. These protective media influence the bioavailability of toxicants and/or the light emission of luminescent bacteria. This means that the origin and type of preparation need to be taken into account when interpreting the results. This can be difficult sometimes, as freeze-dried and liquid-dried bacteria may be obtained from different suppliers. This in turn can mean that the composition is not known in detail or cannot be revised by the user.

That is why in this International Standard additionally to toxicity measurements with liquid-dried bacteria (ISO 11348-2) and freeze-dried bacteria (ISO 11348-3) a procedure with freshly prepared bacteria is described (ISO 11348-1), the performance of which can be revised by the user in every detail.

The laboratories responsible for the results have the opportunity to select the most suitable technique based on expert judgement and information about the water sample to be tested.

Water quality — Determination of the inhibitory effect of water samples on the light emission of *Vibrio fischeri* (Luminescent bacteria test) —

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1 Scope

ISO 11348 describes three methods for determining the inhibition of the luminescence emitted by the marine bacterium *Vibrio fischeri* (NRRL B-11177). This part of ISO 11348 specifies a method using liquid-dried bacteria.

This method is applicable to:

— waste water,

— aqueous extracts and leachates,

— fresh waters (surface or ground waters) or salt and brackish waters, especially the monitoring of changes in inhibition towards bacteria,

— pore water.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11348. 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 11348 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 5667-16:1998, *Water quality — Guidance on biotesting of samples*.

ISO 7027:—[1)], *Water quality — Determination of turbidity*.

1) To be published. (Revision of ISO 7027:1990)