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Water quality — Evaluation of the aerobic biodegradability of organic compounds at low concentrations —

Part 1:

Shake-flask batch test with surface water or surface water/sediment suspensions

Qualité de l'eau — Évaluation de la biodégradabilité aérobie des composés organiques présents en faibles concentrations —

Partie 1: Essai en lots de flacons agités avec des eaux de surface ou des suspensions eaux de surface/sédiments



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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 3.

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 part of ISO 14592 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14592-1 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 5, *Biological methods*.

ISO 14592 consists of the following parts, under the general title *Water quality — Evaluation of the aerobic biodegradability of organic compounds at low concentrations*:

- *Part 1: Shake-flask batch test with surface water or surface water/sediment suspensions*
- *Part 2: Continuous flow river model with attached biomass*

This corrected version of ISO 14592-1:2002 incorporates corrections to

- the reference given in the third item of the list in 8.2.1;
- the reference given in the penultimate line of 8.2.1;
- the reference given in the last line of the second paragraph of 8.4.1.

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Introduction

This International Standard consists of two parts. Part 1 describes a die-away batch test for either surface water with or without added sediment in suspension simulating either a pelagic aquatic environment or a water-to-sediment interface. Part 2 describes a continuous flow system simulating a river with biomass attached to stationary surfaces.

This test has been specifically designed to provide information on the biodegradation behaviour and kinetics of test compounds present in low concentrations, i.e. sufficiently low to ensure that they simulate the biodegradation kinetics which would be expected to occur in natural environmental systems.

Before conducting this test, it is necessary to have information on the biodegradability behaviour of the test compound at higher concentrations (e.g. in standard biodegradation tests), and, if possible, on abiotic degradability or elimination from water, as well as relevant physico-chemical data. This information is necessary for proper experimental planning and interpretation of results.

When this test method is used with a single environmental sample of surface water (either with or without the addition of sediment), a laboratory-derived first-order biodegradation rate can be estimated for one single point in time and space. The test system may be more consistent and provide more reliable biodegradation results if it is adapted to the test compound at a specifically maintained concentration. This may be achieved using the optional semi-continuous procedural variant of the method.