
**Kakovost vode - Adsorpcija snovi na aktivno blato - Šaržni preskus z uporabo
specifičnih analitskih metod**

Water quality - Adsorption of substances on activated sludge - Batch test using specific
analytical methods

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Qualité de l'eau - Adsorption des substances sur la boue activée - Essai de lot utilisant
des méthodes analytiques spécifiques

[SIST ISO 18749:2010](https://standards.itih.ai/catalog/standards/sist/af7ded9d-93c0-43e8-82eb-56b018c5649/sist-iso-18749-2010)

Ta slovenski standard je istoveten z: ISO 18749:2004

ICS:

13.030.20	Tekoči odpadki. Blato	Liquid wastes. Sludge
13.060.30	Odpadna voda	Sewage water

SIST ISO 18749:2010**en**

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Water quality — Adsorption of substances on activated sludge — Batch test using specific analytical methods

*Qualité de l'eau — Adsorption des substances sur la boue activée —
Essai de lot utilisant des méthodes analytiques spécifiques*

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Contents

	Page
1 Scope	1
2 Terms and definitions	1
3 Principle	2
4 Reagents and materials	2
5 Apparatus	4
6 Test environment	5
7 Procedure	5
8 Calculation	7
9 Validity of the test	9
10 Test report	9
Bibliography	10

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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 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 18749 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 5, *Biological methods*.

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Introduction

This test is used as a screening test to determine the degree of adsorption of substances on activated sludge or primary sludge in waste water treatment plants. General information on the adsorption and desorption of test compounds may also be obtained by other tests (see e.g. Reference [5] in the Bibliography).

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Water quality — Adsorption of substances on activated sludge — Batch test using specific analytical methods

WARNING — Activated sludge and sewage contain potentially pathogenic organisms. Take appropriate precautions when handling them. Handle with care toxic test compounds and those whose properties are unknown.

1 Scope

This International Standard specifies a screening test method for the determination of the degree of adsorption of substances on to the activated sludge or primary sludge in a waste water treatment plant.

The conditions described in this International Standard normally correspond to the optimum conditions for the adsorption to occur at the chosen activated-sludge concentration and water hardness during the test period.

The method applies to substances for which an analytical method with sufficient accuracy is available and which, under the conditions of the test and at the test concentration used,

- a) are water-soluble;
- b) or, if only slightly water-soluble, allow sufficiently stable suspensions, dispersions or emulsions to be prepared;
- c) are not significantly removed from the test solution during the test by known abiotic processes such as stripping or foaming;
- d) do not deflocculate activated sludge;
- e) are not readily biodegradable (for a discussion of biodegradability, see ISO/TR 15462).

An important parameter that can influence the reliability of the test results is the stability of the test compound during the test. If no information on the stability is available, it is recommended that this be checked before the test. If any transformation (e.g. due to hydrolysis) is observed, it is recommended that the degree of adsorption of the transformation products be determined, if possible. Since biodegradability of the test compound may also lead to an incorrect assessment of the degree of adsorption, it is recommended that the biodegradability be investigated in advance using standard biodegradation tests which are preferably based on oxygen consumption or on carbon dioxide production and in which adsorption has no influence on the test result. If biodegradation cannot be excluded, sterilized sludge may be used (see Clause 7). There is generally no need to carry out adsorption tests on substances which are readily biodegradable as they are sufficiently removed biologically in waste water treatment plants. Substances which are easily adsorbed on activated sludge in waste water treatment plants are preferably removed by adsorbing them in sludge digesters and degrading them anaerobically. For such substances, high adsorption may be a reason for carrying out anaerobic biodegradation tests. An overview of standardized biodegradation tests is given in ISO/TR 15462.

The test compound concentrations used in this method are usually very low and therefore no negative effects are to be expected on the capacity of the activated sludge to adsorb even toxic test compounds. When there is any doubt, it is recommended that microscopic investigations of the flocs and suitable toxicity tests such as that specified in ISO 8192 be carried out.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.