

Water quality - Determination of the estrogenic potential of water and waste water - Part 1: Yeast estrogen screen (*Saccharomyces cerevisiae*) (ISO 19040-1:2018)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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ICS 13.060.70

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English Version

Water quality - Determination of the estrogenic potential
of water and waste water - Part 1: Yeast estrogen screen
(*Saccharomyces cerevisiae*) (ISO 19040-1:2018)

Qualité de l'eau - Détermination du potentiel
oestrogénique de l'eau et des eaux résiduaires - Partie
1: Essai d'oestrogénicité sur levures (*Saccharomyces
cerevisiae*) (ISO 19040-1:2018)

Wasserbeschaffenheit - Bestimmung des estrogenen
Potentials von Wasser und Abwasser - Teil 1: Hefe-
Estrogenscreening (*Saccharomyces cerevisiae*) (ISO
19040-1:2018)

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COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of ISO 19040-1:2018 has been prepared by Technical Committee ISO/TC 147 "Water quality" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 19040-1:2022 by Technical Committee CEN/TC 230 "Water analysis" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 19040-1:2018 has been approved by CEN as EN ISO 19040-1:2022 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

A list of all parts in the ISO 19040 series can be found on the ISO website.

Water quality — Determination of the estrogenic potential of water and waste water —

Part 1:

Yeast estrogen screen (*Saccharomyces cerevisiae*)

WARNING — Persons using this document should be familiar with normal laboratory practice. This document 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.

IMPORTANT — It is absolutely essential that tests conducted in accordance with this document be carried out by suitably trained staff.

1 Scope

This document specifies a method for the determination of the estrogenic potential of water and waste water by means of a reporter gene assay with genetically modified yeast strains *Saccharomyces cerevisiae*. This reporter gene assay is based on the activation of the human estrogen receptor alpha.

This method is applicable to:

- fresh water;
- waste water;
- aqueous extracts and leachates;
- eluates of sediments (fresh water);
- pore water;
- aqueous solutions of single substances or of chemical mixtures;
- drinking water.

The limit of quantification (LOQ) of this method for the direct analysis of water samples is between 8 ng/l and 15 ng/l 17 β -estradiol equivalents (EEQ) based on the results of the international interlaboratory trial (see [Annex F](#)). The upper threshold of the dynamic range for this test is between 120 ng/l and 160 ng/l 17 β -estradiol equivalents (EEQ). Samples showing estrogenic potencies above this threshold have to be diluted for a valid quantification. Extraction and pre-concentration of water samples can prove necessary, if their estrogenic potential is below the given LOQ.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 7027, *Water quality — Determination of turbidity*