ICS 13.060.50 SLOVENSKÁ TECHNICKÁ NORMA Máj 2026

STN	**Kvalita vody Stanovenie dusičnanov vo vode skúmavkovou metódou pre malé objemy vzoriek Časť 1: Farebná reakcia s dimetylfenolom (ISO 23696-1: 2023)**	**STN EN ISO 23696-1 75 7493**

Water quality - Determination of nitrate in water using small-scale sealed tubes - Part 1: Dimethylphenol colour reaction (ISO 23696-1:2023)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/26

Rozpracovaná prekladom.

Obsahuje: EN ISO 23696-1:2025, ISO 23696-1:2023

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 23696-1

December 2025

ICS 13.060.50

English Version

Water quality - Determination of nitrate in water using small-scale sealed tubes - Part 1: Dimethylphenol colour reaction (ISO 23696-1:2023)

Qualité de l'eau - Détermination du nitrate dans l'eau par la méthode à petite échelle en tubes fermés - Partie 1: Réaction colorimétrique au diméthylphénol (ISO 23696-1:2023)

Wasserbeschaffenheit - Bestimmung von Nitrat in Wasser mittels Küvetten - Teil 1: Verfahren mit Dimethylphenol (ISO 23696-1:2023)

This European Standard was approved by CEN on 14 December 2025.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 23696-1:2025 E

Contents

Page

European foreword

The text of ISO 23696-1:2023 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 23696-1:2025 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of an identical text or by endorsement, at the latest by June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

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.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Endorsement notice

The text of ISO 23696-1:2023 has been approved by CEN as EN ISO 23696-1:2025 without any modification.

INTERNATIONAL STANDARD

ISO 23696-1

First edition
2023-02

Water quality — Determination of nitrate in water using small-scale sealed tubes —

Part 1: Dimethylphenol colour reaction

Qualité de l'eau — Détermination du nitrate dans l'eau par la méthode à petite échelle en tubes fermés —

Partie 1: Réaction colorimétrique au diméthylphénol

Reference number
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Contents

Page

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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

A list of all parts in the ISO 23696 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Nitrate plays an important role in nature and are naturally present in ecosystems. The main anthropic sources are agriculture (fertilizers and manure) and industrial sources such as food, chemical, paper companies, etc. and as a result of natural nitrification processes of reduced forms of nitrogen. In turn, nitrate can be converted to nitrogen gas by denitrifying bacteria. This process takes on strategic importance within biological water purification plants.

The presence of significant concentrations of nitrate in surface and bathing water, drinking water and wastewater can pose a risk to human health and/or environment.

INTERNATIONAL STANDARD **ISO 23696-1:2023(E)**

Water quality — Determination of nitrate in water using small-scale sealed tubes —

Part 1: Dimethylphenol colour reaction

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 qualified staff.

1 Scope

This document specifies a method for the determination of nitrate as NO_3-N in water of various origin such as natural water (including groundwater, surface water and bathing water), drinking water and wastewater, in a measuring range of concentration between 0,10 mg/l and 225 mg/l of $N0_3$-N using the small-scale sealed tube method. Different measuring ranges of small-scale sealed tube methods can be required.

The measuring ranges can vary depending on the type of the small-scale sealed tube method of different manufacturers.

It is up to the user to choose the small-scale sealed tube test with the appropriate application range or to adapt samples with concentrations exceeding the measuring range of a test by preliminary dilution.

NOTE 1 The results of a sealed-tube test are most precise in the middle of the application range of the test.

Manufacturers' small-scale sealed tube methods are based on dimethylphenol colour reaction depending on the typical operating procedure of the small-scale sealed tube used, see Clause 9.

NOTE 2 Laws, regulations or standards can require that the data is expressed as NO_3- after conversion with the stoichiometric conversion factor 4,426 81 in Clause 11.

NOTE 3 In the habitual language, use of sewage treatment and on the displays of automated sealed-tube test devices, NO_3 without indication of the negative charge has become the common notation for the parameter nitrate and especially for the parameter nitrate-N. This notation is adopted in this document even though not being quite correct chemical nomenclature.

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 5667-1, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques*

ISO 5667-3, *Water quality — Sampling — Part 3: Preservation and handling of water samples*

ISO 5667-10, *Water quality — Sampling — Part 10: Guidance on sampling of waste water*

ISO 8466-1, *Water quality — Calibration and evaluation of analytical methods — Part 1: Linear calibration function*

ISO 8655-2, *Piston-operated volumetric apparatus — Part 2: Pipettes*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*