
**Water quality — Guidelines for the
determination of total organic carbon (TOC)
and dissolved organic carbon (DOC)**

*Qualité de l'eau — Lignes directrices pour le dosage du carbone organique
total (COT) et carbone organique dissous (COD)*

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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.

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 8245 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

This second edition cancels and replaces the first edition (ISO 8245:1987) which has been technically revised.

Annexes A and B of this International Standard are for information only.

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Introduction

It is absolutely essential that tests conducted in accordance with this International Standard be carried out by suitably qualified staff.

Total organic carbon (TOC) is a measure of the carbon content of dissolved and undissolved organic matter present in water. It does not give information on the nature of the organic substance.

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Water quality — Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)

1 Scope

This International Standard gives guidance for the determination of total carbon (TC), total inorganic carbon (TIC) and total organic carbon (TOC) in drinking water, ground water, surface water, sea water and waste water. It also defines terms and specifies interferences, reagents, and sample pretreatment for water samples.

The method described in this International Standard applies to water samples containing organic carbon content ranging from 0,3 mg/l to 1000 mg/l. The lower limit concentration is only applicable in special cases, for example drinking water, measured by highly sensitive instruments. Higher concentrations may be determined after appropriate dilution.

This International Standard does not deal with the instrument-dependent specifications.

Purgeable organic substances, such as benzene, toluene, cyclohexane and chloroform, can also be determined using this method.

Cyanide, cyanate and particles of elemental carbon (soot), when present in the sample, can be determined together with the organic carbon.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5667-3, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples*.

3 Terms and definitions

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

3.1

total carbon

TC

sum of organically bound and inorganically bound carbon present in water, including elemental carbon

3.2

total inorganic carbon

TIC

sum of inorganic carbon present in water in the form of elemental carbon, total carbon dioxide, carbon monoxide, cyanide, cyanate and thiocyanate

NOTE TOC instruments most often measure TIC as CO₂ originating only from hydrogencarbonates and carbonates.