AS 2031:2025

Australian STANDARD®

STANDARDS Australia

Water quality — Sampling for microbiological analysis (ISO 19458:2006, MOD)



AS 2031:2025

This Australian Standard® was prepared by FT-020, Water Microbiology. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 15 April 2025.

This Standard was published on 27 June 2025.

The following are represented on Committee FT-020:

ACT Health Directorate
Australian Society for Microbiology
Australian Water Association
NSW Health
National Association of Testing Authorities Australia
National Measurement Institute
PathWest Laboratory Medicine WA
Queensland Health
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This Standard was issued for comment as DR AS 2031:2024

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ISBN: 978 1 76175 264 3

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Originated as AS 2031.2—1977.
Jointly revised and redesignated AS/NZS 2031:2001.
Revised and redesignated AS 2031—2012.
Third edition 2025.

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How to read this Standard

This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

Australian and Australian/New Zealand Standards are voluntary unless they are referenced in legislation or called up in contracts.

Requirements

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

Recommendations, permissions and possibilities

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

Structure of Standards

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply.

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

This Standard is a modified adoption of an International Standard. It makes changes to the international text.

The changes to the international text are listed in an appendix at the end of the Standard. This appendix is called Appendix ZZ.

To use this Standard in Australia/New Zealand, the changes in Appendix ZZ need to be followed.

Preface

This Standard was prepared by the Standards Australia Committee FT-020, Water Microbiology, to supersede AS 2031—2012.

The objective of this document is to provide guidance on planning water sampling regimes, on sampling procedures for microbiological analysis and on transport, handling and storage of samples until analysis begins. It focuses on sampling for microbiological investigations.

This document is an adoption with national modifications and has been reproduced from ISO 19458:2006, *Water quality—Sampling for microbiological analysis*.

The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the modifications to ISO 19458:2006 for the application of this document in Australia and New Zealand.

The major changes in this edition are as follows:

(a) The Introduction has been rewritten to better align with Australian and New Zealand conditions.

(b) Additional guidance has been provided on sample collection.

(c) Several additional microorganisms have been included in Table B.1.

As this document is reproduced from an International Standard, the following applies:

(i) In the source text “this International Standard” should read “this document”.

(ii) A full point substitutes for a comma when referring to a decimal marker.

(iii) Substitute “mL” for “ml” wherever it appears.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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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 19458 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 4, *Microbiological methods*.

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Introduction

Appropriate sampling is essential to provide representative samples to the laboratory in charge of testing. Sampling features depend on the objective of sampling, but also on the nature of the sample. Microorganisms are living organisms. In addition, when they are introduced into water, they do not form a perfect solution, but a suspension with an inherent degree of variability.

Sampling objectives may serve different purposes, which are described in the ISO 5667 series of standards (ISO 5667-1, ISO 5667-2 and ISO 5667-3):

a) determination of the compliance of a water with a regulatory quality specification;

b) characterization of any contamination, its level (mean) and its variations:

   1) what is its random variation?

   2) is there a trend?

   3) are there cycles?

c) identification of the sources of pollution.

Regarding the number or frequency of samples, it will vary according to the aim of the sampling.

The minimum number of samples will be low if the mean concentration differs greatly from the specification (much lower or much higher), and the minimum number of samples will be higher if the mean concentration and the specification are close to one another. Similarly, in case b), when looking for a trend: the less obvious the trend, the higher the frequency of sampling (see also Annex A).

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