# Australian/New Zealand Standard™



# Water microbiology

# Method 13: *Pseudomonas aeruginosa*— Membrane filtration method

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, Water Microbiology, FT-020, to supersede AS 4276.13—1995.

The Australian/Standard New Zealand Technical Committee reviewed International Standards Organization Draft Standard ISO/DIS 16266, *Water quality—Detection and enumeration of Pseudomonas aeruginosa—Membrane filtration method*, to determine its suitability to replace AS 4276.13—1995. It was decided not to adopt Draft Standard ISO/DIS 16266 due to occupation health and safety concerns regarding the potential carcinogenicity of acetamide. Furthermore, a study conducted by two Australian State Health Laboratories trialing the recommended primary isolation medium concluded that the medium was less selective and that the morphological characteristics of the target microorganism were more variable than colonies on mPA-C agar.

*Pseudomonas* is a large and complex genus of gram-negative bacteria that includes species with both clinical and environmental importance. They are aerobic, non-spore-forming, gram-negative rods which are straight or slightly curved. *Pseudomonas aeruginosa* is an environmental microorganism that can be readily isolated from moist environments and can behave as an opportunistic pathogen. *P. aeruginosa* is an oxidase-positive microorganism that usually produces the pigments pyocyanin and fluorescein, and hydrolyzes casein.

The laboratory should have a clearly defined quality control system to ensure that the apparatus, culture media, reagents and technique are suitable for the test. The use of positive control is part of this system.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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## METHOD

### 1 SCOPE

This Standard sets out a method, using membrane filtration, for enumerating *Pseudomonas aeruginosa* in waters.

NOTES:

1 Membrane filtration is suitable for enumerating microorganisms only when the turbidity of the water is low.

2 A flow diagram of the procedure is shown in Appendix A.

3 Culture media preparation notes are shown in Appendix B.