

# Australian/New Zealand Standard™

## Water microbiology

### Method 20: Examination for coagulase positive staphylococci, including *Staphylococcus aureus*, by membrane filtration

#### PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, FT-020, Water Microbiology, as part of a series of methods for the microbiological examination of waters for domestic and industrial use.

Staphylococci, particularly coagulase positive staphylococci and *Staphylococcus aureus*, are of concern in the hospital environment because of their potential to cause infections. They have also been advocated as indicators of the quality of bathing water including swimming pools, hydrotherapy pools and sea water. They are not normally present in drinking water supplies but their detection may be required in food and pharmaceutical manufacture and in hospitals.

Members of the genus *Staphylococcus* are gram-positive cocci, facultatively anaerobic, non-motile, do not form spores and are usually coagulase positive and sensitive to lysostaphin. In the context of this method, coagulase positive staphylococci are defined as producing typical colonies on Baird-Parker agar and a positive result in the coagulase test. *Staphylococcus aureus* is a coagulase positive staphylococcus that can be identified by verifying certain phenotypic characteristics, including biochemical reactions and cell wall components.

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.

#### METHOD

##### 1 SCOPE

This Standard sets out a method for detecting coagulase positive staphylococci and *Staphylococcus aureus* (*S.aureus*) in water by the membrane filtration method.

##### NOTES:

- 1 Membrane filtration is suitable for enumerating microorganisms only when the turbidity of the water is low.
- 2 The optimum range for membrane filter counts is 20-80 colonies. If the confirmed total count from one or more membranes is less than 20, then the derived sample count, which is an estimate of the true count in the sample (population parameter), is regarded as having a low precision. At the other extreme, when membranes containing greater than 80 colonies are counted, the counting error tends to be large. Again, the derived counts are regarded as having low precision. Derived counts of low precision should be indicated on reports by flagging them as 'estimated' or 'approximate'.
- 3 A flow diagram of the procedure is shown in Appendix A.