

Australian Standard[®]

**Private swimming pools—
Water quality**

This Australian Standard was prepared by Committee CS/61, Sanitization of Private Swimming Pools. It was approved on behalf of the Council of Standards Australia on 27 November 1989 and published on 15 December 1989.

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Australian Consumers Association
Australian Federation of Consumer Organizations
Australian Government Analytical Laboratories
Australian Institute of Health Surveyors
Australian Retailers Association
Confederation of Australian Industry
Department of Health, N.S.W.
Department of Sport, Recreation and Racing, N.S.W.
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First published as AS 3633—1989.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5957 8

PREFACE

This Standard was prepared by the Standards Australia Committee on Sanitization of Private Swimming Pools.

This Standard specifies requirements for the sanitization and maintenance of water quality in private swimming pools. Further, this Standard aims at providing information about the various types of treatments available, their effectiveness, and the hazards associated with swimming pools when sanitary levels have not been maintained. Moreover, the Standard includes Appendices which provide detailed information about pool chemicals as well as an explanation of the chemistry of pool treatment. As such, the Standard provides basic information required by the private pool owner as well as technical information for the water treatment specialist.

A Standard dealing with test kits intended for testing the water quality of private swimming pools, as outlined in Section 6, is in course of preparation.

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STANDARDS AUSTRALIA

Australian Standard
Private swimming pools—Water quality

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard applies to private swimming pools and sets out requirements and information for achieving and maintaining sanitary water conditions for the protection of bathers' health and comfort, ensuring the aesthetic appeal of the water as well as protecting the pool, its fittings and its accessories.

1.2 PURPOSE. The purpose of achieving and maintaining a sanitary level of water quality, as well as the efficient operation of equipment, is as follows:

- (a) To disinfect the water by killing disease-producing bacteria, viruses and other organisms (e.g. amoebae, pseudomonas, etc) which could be responsible for—
- (i) primary amoebic meningoencephalitis;
 - (ii) gastro-intestinal infections, e.g. shigellosis;
 - (iii) skin infections, e.g. 'athlete's foot', plantar warts;
 - (iv) eye infections, e.g. conjunctivitis ('pink eye');
 - (v) ear infections, e.g. otitis externa (inflammation of the outer ear);
 - (vi) throat infections, e.g. tonsillitis; and
 - (vii) respiratory infections, e.g. bronchitis.

NOTE: Although each of the above infections may be transmitted through inadequately treated swimming pool water, they may also, and usually more often, be transmitted through physical contact with other bathers, pool surrounds, towels, showers, toilets and animals.

- (b) To prevent eye irritation, see Appendix A.
- (c) To prevent algal growth, see Paragraph A8 of Appendix A.
- (d) To remove pollutants introduced by the bathers, e.g. perspiration and urine.
- (e) To minimize obnoxious odours and tastes.
- (f) To improve the appearance of water by upgrading its clarity and sparkle.

NOTE: Clear, 'sparkling' water does not indicate that the pool is free from bacteria, viruses, amoebae or other disease-causing organisms. It merely indicates that the pool water includes an effective algicide and that the recirculation/filtration system is operating satisfactorily.

- (g) To prevent build up of scale.
- (h) To prevent corrosion to fixtures and plant, see Paragraph A9 of Appendix A.

1.3 RELATED DOCUMENTS. For additional information about swimming pools and their accessories attention is drawn to the following related Standards.

AS	
1838 and	
1839	Premoulded reinforced plastics swimming pools
1900	Children's flotation toys and swimming aids

1926	Fences and gates for private swimming pools
2020	Safety covers for private swimming pools and wading pools (for the protection of children 5 years of age and under)
2160	Contract for the supply and construction of a swimming pool
2610	Spa pools
2610.1	Part 1: Public spas
2610.2	Part 2: Private spas
2783	SAA Concrete Swimming Pools Code
2818	Guide to swimming pool safety

1.4 DEFINITION. For the purpose of this Standard, the definition below apply.

1.4.1 Acid demand—a measurement of the amount of acid that needs to be added to the pool water to lower the pH and total alkalinity to acceptable levels.

1.4.2 Acidic—water with a pH between 0 and 7.

1.4.3 Algicide—a chemical that is capable of killing algae.

1.4.4 Alkaline—water with a pH between 7 and 14.

1.4.5 Alkalinity, total—a measure of the total amount of dissolved alkaline compounds in the pool water.

NOTE: Total alkalinity is a measurement of the resistance of the pool water to a change in pH. For example, if the pool water has high pH and low total alkalinity, the addition of a small amount of acid will lower the pH sharply.

1.4.6 Bactericide—a chemical that is capable of killing bacteria and preferably other micro-organisms such as viruses and amoebae.

1.4.7 Bromine, combined—bromine that has combined with ammonium compounds or organic matter containing nitrogen to form bromamines.

NOTES:

1. Ammonium compounds and organic matter containing nitrogen are normally transmitted to pool water by body wastes e.g. perspiration and by organic contamination e.g. leaves, etc.
2. Combined bromine (i.e. bromamine) is a more effective disinfecting agent than combined chlorine (i.e. chloramine).

1.4.8 Bromine, free—bromine that has not combined with ammonia or organic matter containing nitrogen.

1.4.9 Bromine, total—the sum of combined bromine and free bromine.

1.4.10 Chlorine, combined—chlorine that has combined with ammonium compounds or organic matter containing nitrogen to form chloramines.

NOTES:

1. Ammonium compounds and organic matter containing nitrogen are normally transmitted to pool water by body wastes (e.g. perspiration) and organic contamination (e.g. leaves).