

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 Chemical Specialties Manufacturers Association
Australian Consumers Association
Australian Federation of Consumer Organizations
Australian Government Analytical Laboratories
Australian Institute of Health Surveyors
Australian Retailers Association
Confederation of Australian Industry
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Department of Sport, Recreation and Racing, N.S.W.
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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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CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 PURPOSE	5
1.3 RELATED DOCUMENTS	5
1.4 DEFINITIONS	5
1.4.1 Acid demand	5
1.4.2 Acidic	5
1.4.3 Algicide	5
1.4.4 Alkaline	5
1.4.5 Alkalinity, total	5
1.4.6 Bactericide	5
1.4.7 Bromine, combined	5
1.4.8 Bromine, free	5
1.4.9 Bromine, total	5
1.4.10 Chlorine, combined	5
1.4.11 Chlorine, free	6
1.4.12 Chlorine, total	6
1.4.13 Hardness, calcium	6
1.4.14 pH	6
1.4.15 Sanitizer	6
1.4.16 Shock dose	6
1.4.17 Solids, total dissolved	6
1.4.18 Stabilizer	6
1.4.19 Superchlorination	6
1.4.20 Swimming pools, private	6
SECTION 2. FILTRATION SYSTEMS	
2.1 FILTRATION SYSTEM VARIABLES	7
2.2 MINIMUM TURNOVER RATE	7
SECTION 3. CHEMICAL AND SANITIZER CONCENTRATIONS	
3.1 CHEMICAL CONCENTRATION REQUIREMENTS	8
3.2 SANITIZER CONCENTRATION REQUIREMENTS	8
SECTION 4. STORAGE AND HANDLING OF CHEMICALS	
4.1 GENERAL	11
4.2 PRECAUTIONS	11
4.3 DISPOSAL OF UNWANTED POOL CHEMICALS	11
4.4 FIRST AID	11
SECTION 5. DOSING	
5.1 GENERAL	12
5.2 CONTINUOUS DOSING	12
5.3 INTERMITTENT DOSING	12
SECTION 6. TESTING	
6.1 TEST EQUIPMENT	13
6.1.1 Test kit using ortho tolidine (O-T) reagent	13
6.1.2 Chemical test kits	13
6.1.3 Dip stick test kit	13
6.1.4 Other test equipment	13

	<i>Page</i>
6.2 TESTS	13
6.2.1 General	13
6.2.2 Sampling	13
6.2.3 pH	13
6.2.4 Total alkalinity	13
6.2.5 Calcium hardness	13
6.2.6 Salt (sodium chloride)	13
6.2.7 Total dissolved solids	14
6.2.8 Chlorine, free, total, and combined	14
6.2.9 Isocyanuric acid	14
6.2.10 Bromine	14
6.2.11 Polyhexamethylene biguanide	14
6.2.12 Hydrogen peroxide	14
 SECTION 7. TYPES OF TREATMENTS	
7.1 WATER SANITIZING PRODUCTS	15
7.2 ALGICIDE PRODUCTS	15
7.3 SUPPLEMENTARY POOL CHEMICALS	15
 SECTION 8. PROCEDURES FOR INITIAL PREPARATION AND ON-GOING MAINTENANCE OF POOL WATER	
8.1 POOL MATERIALS AND DESIGN, AND INITIAL PREPARATION OF POOL WATER FOR USE (POOL START-UP)	20
8.2 ROUTINE POOL WATER MAINTENANCE	21
8.2.1 Daily	21
8.2.2 Weekly	21
8.2.3 Fortnightly	21
8.2.4 Monthly	21
8.2.5 Non-use over short period	21
8.2.6 Preparation after short period of non-use	22
8.2.7 Non-use over long period	22
8.2.8 Preparation after long period of non-use	22
8.3 EMPTYING POOL	22
8.3.1 General	22
8.3.2 Inground pools	22
 APPENDICES	
A POLLUTANTS	23
B WATER TREATMENT PRODUCTS	25
C CHEMICAL BALANCE OF WATER	30
D CHLORINE TREATMENT	33
E BREAKPOINT CHLORINATION	35
F BROMINE TREATMENT	38
G POISON INFORMATION CENTRES	40

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 E.
- (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 algacide 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 DEFINITIONS. For the purpose of this Standard, the definitions 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).