AS 2243.3—1991 &
Amendment 1 - February 1993

Australian Standard®

Safety in laboratories

Part 3: Microbiology

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee CH/26, Safety in Laboratories. It was approved on behalf of the Council of Standards Australia on 12 December 1990 and published on 28 March 1991.

The following interests are represented on Committee CH/26:

Australian Government Analytical Laboratories
Australian Institute of Petroleum
Australian Nuclear Science and Technology Organization
Bureau of Steel Manufacturers
Chemical Confederation of Australia
Confederation of Australian Industry
CSIRO, Division of Energy Technology
Department of Agricultural Rural Affairs, Vic.
Department of Defence
National Association of Testing Authorities, Australia
Royal Australian Chemical Institute
University of Melbourne

Additional interests participating in preparation of Standard:

Australian Animal Health Laboratory, Geelong, Vic.
Australian Society for Microbiology
Department of Community Services and Health
Fairfield Hospital, Fairfield, Vic.
Institute of Chemical Pathology and Medical Research
Monash University
Repatriation General Hospital, Concord, NSW
Royal Melbourne Hospital
Royal North Shore Hospital, St Leonards, NSW
Sydney College of TAFE
University of NSW

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PREFACE

This Standard was prepared by the Standards Australia Committee on Safety in Laboratories, under the direction of the Chemical Standards Board, to supersede AS 2243.3—1985. This Standard is the third in the AS 2243 series aimed at promoting safety in laboratories. This Standard deals with microbiological aspects of laboratory work and is intended to be used in conjunction with Parts 1 and 2 in the series, relating to general and chemical safety aspects of laboratory work. This edition of the Standard contains a complete revision of the requirements for laboratories dealing with infectious diseases. It classifies microorganisms into four risk groups and contains a description of four levels of containment for microbiology laboratories.

Other Parts of the AS 2243 series are as follows:

Part 1: *General*
Part 2: *Chemical aspects*
Part 4: *Ionizing radiations*
Part 5: *Non-ionizing radiations*
Part 6: *Mechnical aspects*
Part 7: *Electrical aspects*
Part 8: *Fume cupboards*
Part 9: *Recirculating fume cabinets*

The term 'normative' referred to in the Appendices of this Standard indicates that the Appendix is an integral part of the Standard and that all requirements therein must be met. The term 'informative' indicates that the Appendices are for information only.

AS 2243.3/Amdt 1/1993-02-15

STANDARDS AUSTRALIA

Amendment No. 1 to AS 2243.3—1991 Safety in laboratories Part 3: Microbiology

REVISED TEXT

The 1991 edition of AS 2243.3 is amended as follows; the amendment should be inserted in the appropriate place.

SUMMARY: This Amendment applies to Clause 3.8.2.

Published on 15 February 1993.

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FOREWORD

Safety in all laboratories is an individual, as well as a management responsibility. It is management's responsibility to provide protective equipment, a policy relating to safe work practices within a laboratory and to promote the institution of those practices. It is the laboratory staff's responsibility to carry out the safe work practices and to use protective equipment to minimize injury, not only to themselves, but also to their colleagues. Staff training must be directed toward making safety an attitude of mind and an integral part of all laboratory procedures, so that a constant, purposeful control of the laboratory environment will result. Accidents such as spillages are an obvious hazard, but the production of aerosols is a less obvious hazard that can be a serious source of contamination. In addition to the many problems commonly encountered in chemical laboratories, microbiological laboratories pose the following specific problems:

(a) Infection of laboratory staff, and of the general public or of animals by dissemination of pathogens outside the laboratory.

(b) Cross-contamination.

(c) Contamination with adventitious microorganisms.

The safest procedure is to regard all microorganisms as potential pathogens and to treat them accordingly.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard sets out requirements, responsibilities and general guidelines relating to safety in laboratories where microorganisms are handled. It is intended for laboratories, including animal houses, where microbiological work such as research, teaching, diagnosis, quality control and regulatory analysis, e.g. of foodstuffs, water and effluents, pharmaceuticals and cosmetics, is undertaken. This Standard should be read in conjunction with AS 2243.1.

1.2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1132 Methods of test for air filters for use in air conditioning and general ventilation
1132.5 Method 5: Determination of arrestance efficiency, average arrestance efficiency, dust holding capacity, and dust holding capacity per unit of effective face area for test dusts Nos 1, 2 and 3
1319 Safety signs for the occupational environment
1324 Air filters for use in air conditioning and general ventilation
1336 Recommended practices for eye protection in the industrial environment
1337 Eye protectors for industrial applications
1410 Sterilizers—Steam—Pre-vacuum
1807 Classrooms, workstations and safety cabinets—Methods of test
1807.6 Method 6: Determination of integrity of terminally mounted HEPA filter installations
1885 Code of practice for recording and measuring work injury experience
2243 Safety in laboratories
2243.1 Part 1: General
2243.2 Part 2: Chemical aspects
2243.8 Part 8: Fume cupboards
2243.9 Part 9: Recirculating fume cabinets
2252 Biological safety cabinets
2252.1 Part 1: Biological safety cabinets (Class I) for personnel protection
2252.2 Part 2: Laminar flow biological safety cabinets (Class II) for personnel and product protection
2508 Safe storage and handling information cards for hazardous materials
2567 Cytotoxic drug safety cabinets
2639 Cytotoxic drug cabinets—Installation and use
2647 Biological safety cabinets—Installation and use
2982 Laboratory construction

Worksafe Australia
(NOHSC) Exposure standards for atmospheric contaminants in the occupational environment Cited in 5AC

ISO
3864 Safety colours and safety signs

ANSI
Z35.5 Biological hazard symbol

BS
4402 Specification for safety requirements for laboratory centrifuges

1.3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

1.3.1 Aerosol—suspension in air of finely dispersed solids or liquids.

1.3.2 Antiseptic—substance capable of destroying or preventing growth of microorganisms under prescribed conditions of use, and specifically for application to living tissues.

1.3.3 Aseptic technique—the exercise of special procedures for maintaining—

(a) the sterility of equipment, media, and other materials;

(b) the purity of cultures, by eliminating adventitious contamination; and

(c) protection for the operator and environment.