Under Revision DR 92159 Amendment 1 - May 1990.

Superseded by AS 2252.2-1994

AS 2252.2—1985
UDC 614.44: 615.917: 542.2

Australian Standard® 2252.2—1985

BIOLOGICAL SAFETY CABINETS

Part 2—LAMINAR FLOW BIOLOGICAL SAFETY CABINETS (CLASS II) FOR PERSONNEL AND PRODUCT PROTECTION

STANDARDS ASSOCIATION OF AUSTRALIA
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This Australian standard was prepared by Committee MS/28, Controlled Environment. It was approved on behalf of the Council of the Standards Association of Australia on 4 December 1984, and published on 4 March 1985.

The following interests are represented on Committee MS/28:

Australian Institute of Refrigeration, Air Conditioning and Heating

Australian Medical Association

Commonwealth Serum Laboratories

Confederation of Australian Industry

CSIRO, Australian National Animal Health Laboratories

Department of Housing and Construction

Department of Defence

Department of Health, N.S.W.

Department of Public Works, N.S.W.

Health Commission of Victoria

National Association of Testing Authorities, Australia

National Biological Standards Laboratory

National Council of Chemical and Pharmaceutical Industries

Royal Australian Institute of Architects

Representatives of the following interests also participated in the drafting of this standard:

Companies and consultants specializing in equipment and design for controlled environments.

STANDARDS AUSTRALIA

Amendment No 1
to
AS 2252.2—198[illegible]
Biological safety ca[illegible]
Part 2: Laminar flow biologi[illegible]l [illegible]fety cabinets
(Class II) for personnel and [illegible]uct protection

RE[illegible] TEXT

The 1985 edition of AS 2252.2 is amended as fol[illegible]ws; [illegible] a [illegible]endment(s) should be inserted in the appropriate place.

SUMMARY: This Amendment applies to Appen[illegible]x [illegible]

Published on 7 May 1990.

AUSTRALIAN STANDARD

BIOLOGICAL SAFETY CABINETS

Part 2

LAMINAR FLOW BIOLOGICAL SAFETY CABINETS (CLASS II) FOR PERSONNEL AND PRODUCT PROTECTION

AS 2252.2–1985

First published.....1980
Second edition.....1985

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PREFACE

This edition of this standard was prepared by the Association's Committee on Controlled Environment, to supersede AS 2252, Part 2—1980, in order to make the requirements for the HEPA type filters (Clause 4.5) more specific and to widen the choice of material(s) of construction for filter frames. It is Part 2 of a three-part standard for biological safety cabinets.

The other parts of the standard are—

Part 1—Biological Safety Cabinets (Class I) for Personnel Protection

Part 3—Gastight Biological Safety Cabinets (Class III), for Personnel Protection against Agents for Extreme Hazard*

The issue in 1972 of a draft standard for public review for cleanrooms and work-stations drew a comment from the Commonwealth Serum Laboratories that certain biological work needed to be done under aseptic conditions and, also, that potentially dangerous materials had to be contained; the fact was that the proposed standards† did not adequately cater for these situations. A need was also established for standards applying to cabinets designed to minimize the inherent risks to personnel working with hazardous biological agents.

The CSL submission led to the decision to prepare AS 2252, Biological Safety Cabinets in three parts.

In the preparation of this standard, reference was made to the booklet published by the Public Health Service of the United States Department of Health, Education and Welfare, entitled 'Classification of Etiological Agents on the Basis of Hazard'. Although written for American conditions, this booklet describes the basis for the classification of such hazardous agents and lists bacterial, fungal, parasitic, viral, rickettsial and chlamydial agents in five classes. The least hazardous agents are in Class 1 and those requiring the greatest restrictions are in Class 4. Class 5 contains agents which are specifically excluded from the U.S. by law. The list of organisms prohibited in Australia differs somewhat from the American list. Details can be obtained from the Quarantine Division of the Department of Health, Canberra.

Laminar flow biological safety cabinets (Class II) are not to be confused with laminar flow work-stations described in AS 1386 which do not provide protection for personnel.

Appendix A, Purchasing Guidelines, provides a basis for contractual matters.

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* In course of preparation.

† Since published as AS 1386, Cleanrooms and Work-stations and AS 1387, Code of Practice for Cleanrooms and Work-stations.

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PART 2—LAMINAR FLOW BIOLOGICAL SAFETY CABINETS (CLASS II) FOR PERSONNEL AND PRODUCT PROTECTION

FOREWORD

In order to adequately guard against inherent risks to personnel, products and experiments associated with hazardous biological agents, consideration is necessary in respect of the type of cabinet containment required and of the competence of operators. This, in turn, calls for definition of the degree of hazard, and the following terms, which relate directly to those used by the United States Public Health Service (PHS), have been adopted:

No or minimal hazard—the risk level of agents and/or operations of no or minimal danger to personnel, animals or plants under ordinary conditions of handling (PHS Class 1).

Ordinary or potential hazard—the risk level associated with agents which produce disease in man, animals or plants and which can be contained by normal microbiological techniques. The level of competence for personnel should be that expected of staff in a hospital diagnostic microbiological laboratory (PHS Class 2).

Special hazard—the risk level associated with agents which are highly infectious or toxic for man, animals or plants with the production of dangerous disease. Also included are agents with genetic alterations and those which may have a synergistic effect with other materials. Appropriate containment measures are required. The level of competence for personnel should be at least that expected in staff of a hospital diagnostic microbiological laboratory. In addition, personnel must have had proper training in the handling of dangerous agents (PHS Class 3).

Extreme hazard—the risk level associated with agents which are extremely dangerous for man, animals, or plants causing serious epidemic disease. They may have various dangerous combinations of the following characteristics:

(a) Low infective dose.

(b) High pathogenicity.

(c) Potential for spread outside the laboratory.

(d) Concentration.

(e) Genetic alteration or genetic recombination that significantly increases pathogenicity.

Stringent containment measures are required. Personnel must have a high level of competence in microbiology and must have had special training in the handling of dangerous agents (PHS Class 4).

To cope with risks posed by hazardous biological agents, it has been necessary to design cabinets which fall into three separate classes. Each class has a specific application according to the hazard and as to whether protection is required for product and experiment in addition to personnel.

The Commonwealth Government established a Recombinant DNA Monitoring Committee in 1981 to evaluate the hazards that may be associated with work with recombinant DNA and to develop and administer guidelines which would minimize the possibility of hazards if they exist causing harm to individuals or to the community. Applications for advice on containment conditions for specific experimental proposals should be submitted to the Secretary, Recombinant DNA Monitoring Committee, Department of Science and Technology, P.O. Box 65, Belconnen, A.C.T., 2616.