AS/NZS 2243.8:2014

Australian/New Zealand Standard™

Safety in laboratories

Part 8: Fume cupboards

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CH-026, Safety in Laboratories. It was approved on behalf of the Council of Standards Australia on 18 November 2013 and on behalf of the Council of Standards New Zealand on 5 December 2013.
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The following are represented on Committee CH-026:

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Australian Institute of Occupational Hygienists
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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

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Part 8: Fume cupboards

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PREFACE

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CH-026, Safety in Laboratories, to supersede AS/NZS 2243.8:2006.

The objective of this Standard is to provide requirements for fume cupboards relating to their safety and performance, along with recommendations and procedures for their selection, installation, testing and use.

This edition includes requirements for risk assessment and permits the consideration of manifolded duct systems.

This Standard is Part 8 in a series aimed at promoting safety in laboratories. Parts 2–10 are intended to be read in the context set by Part 1.

The series is as follows:

Part 1: Planning and operational aspects
Part 2: Chemical aspects
Part 3: Microbiological safety and containment
Part 4: Ionizing radiations
Part 5: Non-ionizing radiations—Electromagnetic, sound and ultrasound
Part 6: Plant and equipment aspects
Part 7: Electrical aspects (obsolescent)
Part 8: Fume cupboards (this Standard)
Part 9: Recirculating fume cabinets
Part 10: Storage of chemicals

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

CONTENTS

Page

FOREWORD

The primary reason for using a fume cupboard is to provide safe working conditions for the operator and other laboratory personnel. The fume cupboard provides a mechanical means of capturing, diluting and exhausting all fume, especially that which is hazardous or noxious.

The efficiency and safety of a fume cupboard depends upon the smooth entry of air, effective containment and scavenging of fume from the chamber, its siting with respect to air movement and laboratory ventilation, the materials used in its construction, the complete fume exhaust system, its controls and, if fitted, its cleaning system (e.g. scrubbers and filters) and the safe and remote dispersal of fumes to the atmosphere.

Existing fume cupboard installations will, in many instances, not comply with this Standard and consequently should not be used for applications that could create a hazard. In the interests of laboratory safety, a high priority should be allocated to the preparation of a program for upgrading substandard fume cupboard installations to meet the requirements of this Standard. Fully ducted fume cupboards that do not comply with this Standard should be replaced or upgraded to the required levels as soon as practicable.

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Australian/New Zealand Standard
Safety in laboratories

Part 8: Fume cupboards

S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies safety requirements for the design, manufacture, use and maintenance of fume cupboards. The Standard also sets out methods of test for determining the performance of fume cupboards. It includes the method for conducting a smoke test and the method for determining face velocity.

This Standard covers fume cupboards that are intended primarily for use in general chemical operations but may be used for the special applications set out in Appendix D, provided that the additional requirements specified therein are complied with.

Recirculating fume cabinets (which recirculate air and do not extract to the outside atmosphere) are not covered by this Standard (see AS/NZS 2243.9).

1.2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents for informative purposes are listed in the Bibliography.

AS

1668 The use of ventilation and airconditioning in buildings
1668.2 Part 2: Mechanical ventilation in buildings

1807 Cleanrooms, workstations, safety cabinets and pharmaceutical isolators—Methods of test
1807.15 Part 15: Determination of illuminance
1807.20 Part 20: Determination of sound level at installed workstations, safety cabinets and pharmaceutical isolators

2444 Portable fire extinguishers and fire blankets—Selection and location

AS/NZS

1826 Electrical equipment for explosive gas atmospheres—Special protection—Type of protection ‘s’

2208 Safety glazing materials in buildings

2243 Safety in laboratories
2243.3 Part 3: Microbiological safety and containment
2243.6 Part 6: Plant and equipment aspects

2430 Classification of hazardous areas
2430.3.6 Part 3.6: Examples of area classification—Laboratories, including fume cupboards and flammable medical agents
2982 Laboratory design and construction
2982.1 Part 1: General requirements