

Australian/New Zealand Standard™

Safety in laboratories

Part 9: Recirculating fume cabinets



AS/NZS 2243.9:2009

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 11 May 2009 and on behalf of the Council of Standards New Zealand on 22 May 2009.
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The following are represented on Committee CH-026:

Australian Industry Group
Australian Institute of Occupational Hygienists
CSIRO
Department of Labour, New Zealand
Department of Primary Industries, Vic.
Ministry of Agriculture and Forestry, New Zealand
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Additional Interests:

Department of Consumer and Employment Protection, WA
Recirculating fume cabinet manufacturers/suppliers
University of Sydney

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Part 9: Recirculating fume cabinets

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CH-026, Safety in Laboratories, to supersede AS/NZS 2243.9:2003. It was originally prepared as a result of a request from the Royal Australian Chemical Institute and other organizations for a Standard covering minimum safety requirements for recirculating fume cabinets.

The main changes made to the Standard in preparing this edition are as follows:

- (a) The requirement for the average face velocity to be 0.5 m/s has been replaced with this being the minimum average face velocity and a requirement for individual face velocity readings to be at least 0.3 m/s.
- (b) The recommendation for fan motors to be of brushless and sparkless design has been converted to a requirement for fan motors that are installed in the air stream.
- (c) The requirements and recommendations concerning siting of recirculating fume cabinets have been modified to reduce the likelihood of airflow disturbances at the working aperture.
- (d) The performance and calibration requirements for the anemometer used for face velocity testing have been clarified.

Other Standards in the series promoting safety in laboratories are as follows:

Part 1: Planning and operational aspects

Part 2: Chemical aspects

Part 3: Microbiological aspects and containment facilities

Part 4: Ionizing radiations

Part 5: Non-ionizing radiations—Electromagnetic, sound and ultrasound

Part 6: Mechanical aspects

Part 7: Electrical aspects

Part 8: Fume cupboards

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

	<i>Page</i>
FOREWORD.....	5
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	6
1.2 OBJECTIVE.....	6
1.3 REFERENCED DOCUMENTS	6
1.4 DEFINITIONS	7
SECTION 2 TYPES, SERVICES AND COMPONENTS	
2.1 TYPES OF RECIRCULATING FUME CABINETS.....	9
2.2 LIMITATIONS OF USE	10
2.3 SERVICES	10
2.4 FILTERS	11
SECTION 3 DESIGN AND MATERIALS OF CONSTRUCTION	
3.1 GENERAL	12
3.2 RECIRCULATING FUME CABINET MATERIALS.....	12
3.3 FILTER HOUSING/CASING	14
3.4 RECIRCULATING FUME CABINET DESIGN.....	14
SECTION 4 AIRFLOW, FUME FILTRATION AND VAPOUR ABSORPTION	
4.1 REQUIREMENTS FOR AIRFLOW INTO THE RECIRCULATING FUME CABINET.....	15
4.2 FUME FILTRATION AND ABSORPTION	16
SECTION 5 SITING AND COMMISSIONING	
5.1 SITING.....	17
5.2 COMMISSIONING TESTS	18
SECTION 6 RECOMMENDATIONS AND REQUIREMENTS FOR USE OF RECIRCULATING FUME CABINETS	
6.1 RISK ASSESSMENT PROCESS	20
6.2 GENERAL PROCEDURES	20
6.3 BEFORE USE	21
6.4 DURING USE	21
6.5 AFTER USE	22
6.6 IDENTIFYING FILTER SATURATION.....	22
6.7 FIRE PRECAUTIONS	24
SECTION 7 SERVICING AND MAINTENANCE	
7.1 GENERAL	25
7.2 LOG BOOK.....	25
7.3 CLEANING.....	25
7.4 FILTER CHANGE	25
7.5 MAINTENANCE SCHEDULE.....	26

APPENDICES

A	METHOD FOR CONDUCTING A SMOKE TEST	27
B	METHOD FOR DETERMINING FACE VELOCITY	30
C	EXAMPLE CHECKLIST AND REPORT FORM.....	32

FOREWORD

Recirculating fume cabinets rely on filtration or absorption to remove airborne contaminants released in the cabinet, so that the exhaust air may be safely discharged back into the laboratory atmosphere. Recirculating fume cabinets are suitable for light to moderate use with a limited range of substances. The range of substances for which each cabinet can be used is limited by the need for compatibility with the particular type of absorber or filter fitted to the cabinet.

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**Australian/New Zealand Standard
Safety in laboratories****Part 9: Recirculating fume cabinets**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies safety requirements and gives recommendations for the design, manufacture, use and maintenance of recirculating fume cabinets and the test methods to determine their performance.

NOTE: Requirements for fume cupboards (which extract air to the outside atmosphere) are set out in AS/NZS 2243.8.

1.2 OBJECTIVE

The objective of this Standard is to provide manufacturers of recirculating fume cabinets with design and performance requirements for the cabinets and their filtration systems, and users with requirements and recommendations for their appropriate selection, safe use and maintenance.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- 1807 Cleanrooms, workstations, safety cabinets and pharmaceutical isolators—Methods of test
- 1807.20 Part 20: Determination of sound level at installed workstations, safety cabinets and pharmaceutical isolators
- 2252 Biological safety cabinets (series)
- 2444 Portable fire extinguishers and fire blankets—Selection and location
- 4260 High efficiency particulate air (HEPA) filters—Classification, construction and performance

AS/NZS

- 1530 Methods for fire tests on building materials, components and structures
- 1530.3 Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release
- 1826 Electrical equipment for explosive gas atmospheres—Special protection—Type of protection ‘s’
- 2208 Safety glazing materials in buildings
- 2243 Safety in laboratories
- 2243.8 Part 8: Fume cupboards
- 2647 Biological safety cabinets—Installation and use
- 3000 Electrical installations (known as the Australian/New Zealand Wiring Rules)