

Australian/New Zealand Standard™

Safety in laboratories

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

AS/NZS 2243.5:2004

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 27 November 2003 and on behalf of the Council of Standards New Zealand on 23 February 2004. It was published on 4 March 2004.

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PREFACE

This Standard was prepared by Standards Australia/Standards New Zealand Committee CH-026, Safety in Laboratories, to supersede AS 2243.5—1993, *Safety in laboratories Part 5: Non-ionizing radiations*.

The setting of exposure criteria is not conducted by Standards Australia or Standards New Zealand. Such criteria are set by regulations or organizational policy. They may be found in the occupational health and safety or related regulations that are applicable for the workplace under assessment. Where limits are reproduced in this Standard, they are provided as an example for guidance only and the source is indicated. Readers are requested to ascertain the appropriate regulatory body for their circumstances and check with it for the current requirements or recommendations to be applied.

This revision includes the following modifications:

- (a) Clarification that field work outside the laboratory and exposures of persons for medical purposes are excluded.
- (b) Differentiation between direct and indirect hazards for ultraviolet, visible and laser radiations.
- (c) Revised text on the various types of radiation and updated references to Standards and other documents where various types of radiation are addressed in more detail.
- (d) Clarification of the source of any limits quoted in this Standard and their status.

This Standard is the fifth in the AS/NZS 2243 series aimed at promoting safety in laboratories. Other Parts of the series are as follows:

- Part 1: General
- Part 2: Chemical aspects
- Part 3: Microbiological aspects and containment facilities
- Part 4: Ionizing radiations
- Part 6: Mechanical aspects
- Part 7: Electrical aspects
- Part 8: Fume cupboards
- Part 9: Recirculating fume cabinets
- Part 10: Storage of chemicals

The term 'informative' has been used in this Standard to define the application of the appendices. An 'informative' appendix is only for information and guidance.

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FOREWORD

Except for acoustic and ultrasonic radiation, the non-ionizing radiations that can be detrimental to human health are electromagnetic (see Appendix A). This Standard outlines precautions needed when working with radiations in the ultraviolet (UV), visible, infrared (IR), radiofrequency (RF) and extremely low frequency field (ELF) portions of the electromagnetic spectrum as well as with acoustic and ultrasonic radiation.

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Australian/New Zealand Standard
Safety in laboratories

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

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard—

- (a) provides information on non-ionizing radiations encountered in laboratories and the associated hazards; and
- (b) specifies requirements and gives recommendations in order to prevent injury by these radiations or by other hazards associated with their use.

This Standard does not contain an exhaustive treatment of usage and safety requirements for non-ionizing radiations and reference should be made to other appropriate documents.

NOTES:

- 1 This Standard does not cover field work performed outside the laboratory or exposure of persons to non-ionizing radiations for medical purposes.
- 2 This Standard does not cover requirements for medical examinations for laboratory personnel who may be exposed to non-ionizing radiations. Such medical examinations may be designated in codes of practice, other Standards or the requirements of the regulatory authorities.
- 3 The wavelength band designations given in this Standard are approximate and reflect the conventions used within the referenced literature.
- 4 Appendix A provides a schematic arrangement of the non-ionizing electromagnetic spectrum.
- 5 Appendix B provides advisory material dealing with optical fibre systems.
- 6 Appendix C provides a listing of documents giving other information on non-ionizing radiations.

1.2 OBJECTIVE

The objective of this Standard is to promote safe working practices when using non-ionizing radiations in order to prevent unnecessary exposure of persons working in laboratories containing non-ionizing radiation sources.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1216	Class labels for dangerous goods
1259	Acoustics—Sound level meters
1259.1	Part 1: Non-integrating
1319	Safety signs for the occupational environment
1633	Acoustics—Glossary of terms and related symbols