Australian Standard®

Safety in laboratories

Part 2: Chemical aspects

STANDARDS AUSTRALIA

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This Australian Standard was prepared by Committee CH/26, Safety in Laboratories. It was approved on behalf of the Council of Standards Australia on 6 July 1990 and published on 15 October 1990.

The following interests are represented on Committee CH/26:

Australian Government Analytical Laboratories

Australian Institute of Petroleum

Chemical Confederation of Australia

National Association of Testing Authorities, Australia

Additional interests participating in the preparation of Standard:

Board of Works, Vic.

CSIRO, Division of Chemicals and Polymers

CSIRO, Occupational Health and Safety Section, A.C.T.

Department of Agriculture and Rural Affairs

Monash University

Oil companies

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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—1982, *Safety in laboratories*, Part 2: *Chemical*. This edition has been completely reformatted to improve clarity and incorporates additional information on staff responsibilities, laboratory waste storage and disposal, and compressed and liquified gases.

The lists of toxic and reactive substances in the Appendices of the Standard have been updated to reflect current knowledge on the subject.

The Standard is Part 2 of a nine-part series designed to promote safety in laboratory operations, and is aimed at specific aspects of safety common to chemical laboratories.

The other Parts in the AS 2243 series are as follows:

Part 1: General
Part 3: Microbiology
Part 4: Ionizing radiations
Part 5: Non-ionizing radiations
Part 6: Mechanical aspects
Part 7: Electrical aspects
Part 8: Fume cupboards
Part 9: Recirculating fume cabinets

It is recommended that Part 1 be used in conjunction with this Part, and that additional Parts be obtained where justified by the type of operations carried out in the particular laboratory.

CONTENTS

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard sets out requirements and recommended procedures for safe working practices in the chemical laboratory. It includes procedures for handling flammable, toxic, unstable and highly reactive chemicals and makes special reference to the handling of compressed and liquefied gases. The Standard also includes information on hazards associated with working in the chemical laboratory.

1.2 REFERENCED AND RELATED DOCUMENTS A list of referenced and related documents is given in Appendix A.

1.3 DEFINITIONS For the purpose of this Standard, the definitions in AS 2243.1 and those below apply.

1.3.1 Cryogenic fluids—fluids having a boiling point below 200 K (−73 °C) at atmospheric pressure (i.e. approximately 101 kPa at sea level).

NOTE: The limiting temperature selected for defining cryogenic substances is somewhat arbitrary and many variations appear in the literature.

1.3.2 Flammable—capable of being readily ignited and of burning in air.

1.3.3 Flammable liquid—any Class 3.1 or Class 3.2 liquid (see Clause 3.3.1).

1.3.4 Combustible liquid—any Class 3.3 or Class 3.4 liquid (see Clause 3.3.1).

1.3.5 Threshold limit value (TLV)—a proprietary name registered by the American Conference of Governmental Industrial Hygienists (ACGIH) which refers to airborne concentrations of substances or levels of physical agents to which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.