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Australian Standard®

**Medical refrigeration equipment—
For the storage of blood and blood
products, and containers for the
transport of blood and blood
products**

STANDARDS AUSTRALIA



This Australian Standard was prepared by Committee HT/10, Medical Refrigeration. It was approved on behalf of the Council of Standards Australia on 2 October 1990 and published on 28 March 1991.

The following interests are represented on Committee HT/10:

Australian Chamber of Commerce
Australian Hospital Association
Australian Institute of Refrigeration, Air Conditioning and Heating
Australian Nursing Federation
Australian Red Cross Society
Commercial Refrigeration Manufacturers Association of Australia
Commonwealth Serum Laboratories
Department of Defence
Department of Health, N.S.W.
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Institute of Hospital Engineering, Australia
Institute of Medical and Veterinary Science
Medical Industry Association of Australia

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PREFACE

This Standard was prepared by the Standards Australia Committee on Medical Refrigeration under the direction of the Health Technology Standards Board.

The Standard was prepared in response to a request by the Australian Red Cross Society, which expressed concern that the normal refrigerators available commercially were not suitable for the storage of blood and blood products, and that a Standard to cover refrigeration equipment for such purposes was necessary.

A test has been included at the request of users to estimate the ability of the blood storage refrigeration cabinet to cool warm blood down to a temperature of $5 \pm 1^\circ\text{C}$.

In the preparation of this Standard, account has been taken of the draft revision of BS 4376:1982, *Specification for electrically operated blood storage refrigerators*, BS 2502:1979, *Specification for manufacture of sectional cold rooms (walk-in type)*, AS 1731—1983, *Frozen food retail cabinets*, AS 1430—1986, *Household refrigerators and freezers*, AS 1677—1986, *Refrigerating systems*, and the *Code of Good Manufacturing Practice for Therapeutic Goods*, Commonwealth Department of Health.

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STANDARDS AUSTRALIA

Australian Standard

Medical refrigeration equipment—For the storage of blood and blood products, and containers for the transport of blood and blood products

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for medical refrigeration equipment for the storage of blood and blood products within an ambient temperature range of 10°C to 43°C, as follows:

- (a) Blood and blood products at a temperature of $5 \pm 1^\circ\text{C}$ (see Sections 2 and 4).
- (b) Pre-frozen blood plasma and plasma products at a temperature of -30°C or lower (see Sections 3 and 5).

The Standard covers refrigerated reach-in cabinets and walk-in rooms. Guidance on the use of containers for the transport of blood and blood products are also given (see Section 6).

1.2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

- 1042 Direct-acting indicating electrical measuring instruments and their accessories
- 1284 Electricity meters
- 1284.1 Part 1: General purpose watthour meters
- 1397 Steel sheet and strip—Hot-dipped zinc-coated or aluminium/zinc-coated
- 1449 Wrought alloy steels—Stainless and heat-resisting steel plate, sheet and strip
- 1627 Metal finishing—Preparation and pretreatment of surfaces
- 2171 Code of practice for the manufacture of plastics items for food contact applications
- 3100 Approval and test specification—Definitions and general requirements for electrical materials and equipment
- 3117 Approval and test specification—Bayonet lampholders
- 3121 Approval and test specification for insulating mouldings
- 3140 Approval and test specification—Edison-type screw lampholders
- K108 Metal priming paint, anti-corrosive

1.3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

1.3.1 Blood pack—flexible plastics packs of approximately 500 mL capacity for the storage of blood or red cell concentrates.

1.3.2 Plasma pack—flexible plastics pack of approximately 300 mL capacity for the storage of plasma and plasma components in the frozen state.

1.3.3 Rated storage capacity—the capacity of the refrigeration equipment in terms of 500 mL blood packs or in terms of 300 mL plasma packs, as stated by the manufacturer.

1.3.4 Power consumption—the total power input to the refrigeration equipment.

1.3.5 Service load capacity—the theoretical number of 500 mL blood packs per hour that can be reduced from an entry temperature of 32°C to a storage temperature of 5°C in an ambient temperature of 32°C.

1.4 ELECTRICAL SAFETY The refrigeration equipment shall comply with the relevant requirements of AS 3100.

1.5 CARE AND MAINTENANCE Care and maintenance procedures for refrigeration cabinets shall be in accordance with Appendix A.

1.6 MARKING

1.6.1 Cabinet The cabinet shall be marked in a legible and indelible manner with the following information in a readily accessible position:

- (a) Name or registered trade mark of the manufacturer or distributor.
- (b) Mains power supply voltage(s).
- (c) Rated full load current, in amperes.