



Gas cylinders for industrial, scientific, medical and refrigerant use—Labelling and colour coding



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- Australasian Fire and Emergency Service Authorities Council
 - Australia New Zealand Industrial Gas Association
 - Australian Chamber of Commerce and Industry
 - Australian Gas Association
 - Engineers Australia
 - Gas Energy Australia
 - Gas Technical Regulators Committee
 - National Association of Testing Authorities Australia
 - SafeWork NSW
 - Welding Technology Institute of Australia
 - WorkSafe Victoria
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Australian Standard[®]

Gas cylinders for industrial, scientific, medical and refrigerant use—Labelling and colour coding

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee ME-002, Gas Cylinders, to supersede AS 4484—2004.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify the legible identification of the cylinder with the name or abbreviated symbol of the contained gas or, where applicable, its refrigerant number and the colours for the external cylinder surfaces.

This revision recognizes the completion of the change-over of the medical gas cylinders to the colour coding requirement in general accordance with ISO 32:1977, *Gas cylinders for medical use—Marking for identification of content*. This provides a means to identify certain medical gas cylinders by shoulder colour only. The letter ‘N’ markings on the shoulder of a medical gas cylinder, which were used to differentiate between the old and new colour schemes, are now redundant. As white is the colour assigned to the body of medical gas cylinders, it is not accepted as an alternative to Silver Grey.

The refrigerant numbers specified in this Standard are identical with those given in ISO 817:2014, *Refrigerants—Designation and safety classification*.

Certain gases have both refrigerant and industrial applications (e.g. ammonia, carbon dioxide, sulphur dioxide and, propane) and may be listed in Tables 1, 2 and 3. The allocation of identification colours then depends on the application for which the gas is intended.

Statements expressed in mandatory terms in notes to Tables and Figures are deemed to be requirements of this Standard.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA

Australian Standard**Gas cylinders for industrial, scientific, medical and refrigerant use—
Labelling and colour coding**

1 SCOPE

This Standard specifies the requirements for labelling and colour coding to identify the contents of compressed gas cylinders for industrial, scientific, medical and refrigerant gases, which are used in accordance with AS 2030, Parts 1, 2, 4 and 5.

Colour coding includes special identification for eductor tubes to indicate liquid withdrawal.

This Standard applies to gas cylinders of water capacity in the range 0.1 kg to 150 kg used as single cylinders or in bundles of cylinders. Cylinders with a water capacity outside the above range, or where the total water capacity of a bundle of cylinders exceeds 810 L, with colour coding may follow this Standard.

This Standard does not apply to cylinders used for self-contained underwater breathing apparatus (SCUBA), self-contained breathing apparatus (SCBA), or fire extinguishing agents and portable fire extinguishers. For identification of these cylinders reference should be made to the relevant product or application Standard.

The colour coding requirements of this Standard do not apply to liquid petroleum gas (LP Gas) cylinders in a cylinder of 12 kg water capacity or less, which are usually considered for domestic use and are finished in a range of colours.

The colour coding requirements of this Standard do not apply to cylinders which are either imported for use but not refilling in Australia (colours of country of origin are applicable), nor for cylinders which are imported for the specific purpose of filling for export.

2 REFERENCED DOCUMENTS

The following Standards are referred to in this Standard:

AS

2030	Gas cylinders
2030.1	Part 1: General requirements
2030.5	Part 5: Filling, inspection and testing of refillable cylinders
2030	The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases
2030.2	Part 2: Cylinders for dissolved acetylene
2030.4	Part 4: Welded cylinders—Insulated
2473	Valves for compressed gas cylinders
2473.3	Part 3: Outlet connections for medical gases (including pin-indexed yoke connections)
2700	Colour standards for general purposes
2896	Medical gas systems—Installation and testing of non-flammable medical gas pipeline systems
2902	Medical gas systems—Low pressure flexible hose assemblies

ISO

32 Gas cylinders for medical use—Marking for identification of content

10286 Gas cylinders—Terminology

EN

1089 Transportable gas cylinders—Gas cylinders identification (excluding LPG)

1089-3 Part 3: Colour coding

Australian Dangerous Goods Code (ADG Code)

Safe Work Australia

Labelling of Workplace Hazardous Chemicals Code of Practice

Therapeutic Goods Administration

Standard for the Uniform Scheduling of Medicines and Poisons No. 7 (SUSMP)

Therapeutic Goods Order No. 69—General requirements for labels for medicines

3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2030.1 and those below apply.

3.1 Colour coding

The coloured materials applied or permanently affixed to a cylinder as a coating, sleeve or some other form.

3.2 Composite cylinder

A fibre wrapped transportable gas cylinder that can be either hoop-wrapped or fully wrapped, and with or without an aluminium, steel or non-metallic liner, intended for compressed gas under pressure.

3.3 Industrial gas

Gas that is used in a technical process in industrial production or similar activity, excluding medical and breathing applications (see ISO 10286, Entry Number 720).

3.4 Label

A means of providing identification of the contents of a gas cylinder including:

- (a) Self-adhesive labels.
- (b) Text which is applied by stencilling or other means.
- (c) Any attachment to the cylinder whose sole purpose is to act as a label carrier.

3.5 Medical gas

Any gas or mixture of gases intended to be administered to patients for therapeutic, diagnostic or prophylactic purposes, or to be used for surgical tool applications (see AS 2473.3—2007).

NOTE: In Australia, medical gases are listed on the Australian Register of Therapeutic Goods.

3.6 Refrigerant gas

Gas that is used in a heat cycle usually including, for enhanced efficiency, a reversible phase change from a gas to a liquid (see ISO 10286, Entry Number 721).

3.7 Scientific gas

Gas that is used for analysis, calibration and other similar purposes in scientific laboratories (see ISO 10286, Entry Number 722).

4 LABELLING

4.1 General

The contents of a cylinder or bundle of cylinders, shall be identified on its label. The colours of the cylinder or bundle of cylinders shall be a secondary means of identification.

Identification is achieved by symbols and text representing the contents of the cylinder being either directly printed or stencilled on the cylinder's surface or in the form of pre-printed labels applied to the cylinder's surface.

The cylinder shall be legibly labelled.

NOTE: ADG Code, Labelling of Workplace Hazardous Chemicals CoP, SUSMP and TGO No. 69 have labelling requirements that may apply to gas cylinders.

As the colour coding of a cylinder includes the body colour and if applicable, its body labels, not more than 20% of the body of the cylinder may be used for promotional or marketing purposes.

4.2 Location and durability

4.2.1 Location of label(s)

The required label(s) should be located as close as practicable to the valve end of each gas cylinder or to the outlet on a bundle of cylinders.

On a composite cylinder a complying label may be applied under a clear outer resin layer or under a clear outer filament winding.

4.2.2 Durability of labels

Each label and their means of attachment shall be of material that ensures the label will remain in place and be legible after normal exposure to conditions incident to transport, storage and use.

4.3 Body labels

Body labels may be used on the body of a cylinder to identify the name and/or the chemical symbol of the contained gas.

When used, body labels shall be applied to two opposing sides of a cylinder, unless the water capacity of the cylinder is less than 15 L where a single body label may be applied.

For bundles of cylinders a body label shall be applied to a minimum of one cylinder on at least two opposite sides of the bundle.

The body label text shall be in either black or white, with the colour being selected to contrast with the body colour.

Body labels shall be clearly visible.

4.4 Special labelling

Where the contents of the cylinder have a special condition, such as a specific storage temperature, or the constituents are in special or laboratory proportions, such as multi-component gas mixtures, the cylinder shall be identified in accordance with one of the following:

- (a) By labelling to show the special condition, and the special or analysed proportions.
- (b) By a label indicating that the contents are a special gas mixture and referring to a report that is attached to the cylinder.

The major constituent or balance gas need not have the percentage marked and should be shown as, 'IN _____ (name of balance gas)' or 'BALANCE _____ (name of balance gas)'. The minor constituents should have their proportions given as a percentage, or p.p.m. (volume) or other means as appropriate.