



# **Guide to Standards - Dangerous Goods**

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## Introduction

This document provides information on Standards and other industry specific information (including the Australian Dangerous Goods Code) that may be of interest to anyone working with different types of dangerous goods, including manufacturers, importers, suppliers, installers and users.

The publications outlined in this guide cover requirements (including the storage and handling) for dangerous goods transported by road and rail in relation to the 7<sup>th</sup> edition of the Australian Dangerous Goods Code (ADG7). Organisations and personnel wishing to transport dangerous goods by ship and air should follow the procedures covered in:

- Transporting dangerous goods by air  
[IATA Dangerous Goods \(HAZMAT\) Regulation](#)
- Transporting dangerous goods by ship  
[International Maritime Dangerous \(IMDG\) Code](#)



An invaluable resource which applies to the handling and transport of dangerous goods is [HB 76:2010, Dangerous Goods – Initial Emergency Response Guide](#). This Handbook is consistently mentioned throughout this guide and it provides information on dealing with accidents, spills, leaks, hazards or fires involving dangerous goods and the protective clothing to be worn in emergency procedures.



The Australian Dangerous Goods Code (ADG7) references many Australian Standards, which represent good practice, as defined by industry experts. By complying with these Standards, your transport activity will be deemed-to-satisfy the relevant section of the Code's performance requirements. The [ADG7 + Referenced Standards](#) Service provides you with online access to the most recent Code and its referenced Australian and ISO Standards (via hyperlinks).

**Disclaimer:** The information contained in these pages is provided by way of indicative guidance only and SAI Global Limited does not represent that it is accurate or complete or suitable for any particular specific purposes. The onus remains with users to satisfy themselves of their requirements and needs for their own particular circumstances.

## General Information

### Classifications of Dangerous Goods

Dangerous goods supplied in Australia and New Zealand should be classified, labelled, packaged, stored and transported according to Australian Standards which include the following classes:

- Class 1 - Dangerous Goods - Explosives
- Class 2 - Dangerous Goods - Gases
- Class 3 - Dangerous Goods - Flammable Liquids
- Class 4 - Dangerous Goods - Flammable Solids; Substances Liable to Spontaneous Combustion; Substances which in Contact with Water, Emitting Flammable Gases
- Class 5 - Dangerous Goods - Oxidizing Substances and Organic Peroxides
- Class 6 - Dangerous Goods - Toxic and Infectious Substances
- Class 7 - Dangerous Goods - Radioactive Material
- Class 8 - Dangerous Goods - Corrosive Substances
- Class 9 - Dangerous Goods - Miscellaneous Dangerous Goods and Articles

Detailed information on labelling requirements for different types of dangerous goods is included in [AS 1216-2005, Class labels for dangerous goods](#).

More information (including Model Codes of Practice for managing the use of dangerous goods, labelling these types of substances and the preparation of material safety data sheets) is also available from [Safe Work Australia](#).

Dangerous goods supplied in Australia and New Zealand should be marked with UN numbers, class numbers and HAZCHEM codes. Some classes of dangerous goods are also classified according to packaging groups.

#### UN Numbers

United Nations (UN numbers) consist of 4 digits and they can be found in the information in:

- [HB 76:2010, Dangerous Goods – Initial Emergency Response Guide](#)
- [Australian Dangerous Goods Code \(ADG7\)](#)
- [UN Manual of Tests and Criteria](#)

#### Class Numbers

Information on methods used to label dangerous goods by class according to appropriate criteria is included in [AS 1216-2006, Class labels for dangerous goods](#). Packaging groups for dangerous goods can be assessed by completing the types of tests that are included in the [AS 2106, Methods for the determination of the flash point of flammable liquids \(closed cup\) Series](#).

#### HAZCHEM Numbers

Different types of dangerous goods are also designated with three digit alpha-numeric codes providing initial emergency response information for different classes of dangerous goods. These codes are termed HAZCHEM numbers and information on this coding system is summarised in [HB 76:2010](#).

## Australian Dangerous Goods Code & Other Relevant Codes, Schemes and Authorities

Personnel responsible for supplying dangerous goods and transporting them by road and rail should follow the procedures outlined in the 7th edition of the [Australian Dangerous Goods Code \(ADG7\)](#). A list of Australian Standards is included in Volume 1 of this Code. This Code is also based on the [UN Recommendations on the Transport of Dangerous Goods - Model Regulations Fourteenth revised edition](#). For more information on this topic refer to the [Transportation of Dangerous Goods](#) section of this guide.

Industrial chemicals sold and used in Australia and New Zealand need to be registered and assessed by the [National Industrial Chemicals Notification and Assessment Scheme - NICNAS](#) under the [Australian Inventory of Chemical Substances \(ACIS\)](#). Agricultural and veterinary chemicals (e.g. pesticides and herbicides) need to be registered and assessed by the [Australian Pesticides and Veterinary Medicines Authority \(APVMA\)](#).

Organisations and personnel transporting explosives (including fireworks) should consult the [Australian Code for the Transport of Explosives by Road and Rail](#). The Code is regulated by Government bodies who are members of the [Australian Forum of Explosives Regulators](#).



Please note: In cases where 'limited quantities' of dangerous goods are being transported, the above publications may not be required. For information on this, please consult the [Australian Dangerous Goods Code \(ADG7\)](#). Advice may also be available from [Competent Authorities for Road and Rail Transport](#).

## Work Health and Safety – Safe Work Method Statements

Safe Work Method Statements (SWMS) are fully editable templates written by Ex-OHS Inspectors to comply with current legislation. SWMS document processes for identifying and controlling health and safety hazards and risks.

The following publications can be used by any business that is in the presence of dangerous goods (including the transport sector) to assist in managing their WHS requirements:

- [TransWHSMS, Transport Industry WHS Management System](#)
- [50020 V1, Transport Industry OHS Management System](#)
- [50013 V2, Transport Industry WHS Management System](#)
- [S8.0.12.0053, Safe Work Method Statement - Franna- Loading and Unloading Trucks](#)
- [S8.1.12.0283, Safe Work Method Statement - Trucks – Loading and Unloading](#)
- [S8.1.12.0047, Safe Work Method Statement - Chemical loading on vehicle](#)
- [S8.1.12.0244, Safe Work Method Statement - Shipping Container unloading](#)
- [S8.1.12.0286, Safe Work Method Statement - Vehicle Accident](#)
- [S813.0392, Safe Work Method Statement - Hazardous Chemicals - Working Around](#)

## Emergency Response Guides

Organisations and personnel transporting dangerous goods by road and rail should follow the techniques described in [Australian Dangerous Goods Code \(ADG7 Code\)](#). This Code indicates that organisations transporting dangerous goods should have an 'emergency information holder' in each of their vehicles, which includes emergency procedures and information that follows (in the form or substantially in the form) of:

- [HB 76:2010, Dangerous Goods - Initial Emergency Response Guide](#)
- [AS 1678, Emergency procedure guide - Transport Series](#)

Emergency procedure guides are not available for all classes of dangerous goods (such as radioactive substances). In cases where no emergency procedures are available, organisations and personnel transporting dangerous should ensure each vehicle transporting dangerous goods has a copy of [HB 76:2010](#). This Handbook includes information on the below:

- The latest United Nations (UN) numbers
- Up-dated guide numbers
- A new guide 52 covering requirements for desensitised explosives
- New technical names, including military designations for terrorist materials
- Text changes to reflect the joint Australia/New Zealand status of the handbook
- A summary of the six steps that should be followed to manage emergencies for dangerous transported by road

[AS 1678, Emergency procedure guide - Transport Series](#) includes information on transportation documentation requirements for particular classes of dangerous goods. Generally, the title of these publications include the Standard designation followed by the class of dangerous good (e.g. AS 1678.3.1.001-2003 - AS 1678 is the Standard designation and 3.1 is the Class).

There are two categories within the AS 1678 Series of emergency procedure guides:

1. [Group Text Emergency Guides](#)  
Provide general information on the requirements for transporting different classes of dangerous goods. Organisations will need to include the correct shipping name, UN and HAZCHEM numbers for the types of dangerous goods they are transporting.
2. [Emergency Guides for Specific Dangerous Goods](#)  
Provide specific information on the requirements for transporting specific dangerous goods. These Guides already contain the correct shipping name, UN and HAZCHEM numbers for the dangerous good being transported.

### **Dangerous Goods Classes where there are 'Current' Standards**

- Class 2.1 - Flammable gases  
[AS 1678.2A1-2004, Emergency procedure guide – Transport – Group text EPG for Class 2 substances – Flammable, compressed gas](#) and [AS 1678.2D1-1998, Emergency procedure guide – Transport – Group text EPGs for Class 2 substances – Compressed and liquefied gases – Aerosols](#)
- Class 2.2 - Non-flammable and Non-toxic gases  
[AS 1678.2C1-2004, Emergency procedure guide – Transport – Group text EPGs for Class 2 substances – Non-flammable, compressed gas](#)
- All types of Class 2 gases  
[AS 1678.2M1-2004, Emergency procedure guide - Transport - Group text EPGs for Class 2 substances - Compressed and liquefied gases - Mixed load of gases in cylinders](#)
- Class 3 - Flammable liquids  
[AS 1678.3A1-2004, Emergency procedure guide – Transport – Group text EPGs for Class 3 substances – Flammable liquids](#)
- Class 5.1 - Oxidizing substances  
[AS 1678.5A1-2006, Emergency procedure guide – Transport Group text EPG for Class 5 substances – Oxidizing agents](#)

- Class 5.2 - Organic peroxide  
[AS 1678.5K1-2006, Emergency procedure guide – Transport – Group text EPGs for Class 5 substances – Organic peroxides](#) and [AS 1678.5Q1-2006, Emergency procedure guide – Transport – Group text EPGs for Class 5 substances – Organic peroxides, temperature controlled](#)
- Class 8 - Corrosive Substances  
[AS 1678.8A1-2004, Emergency procedure guide – Transport – Group text EPGs for Class 8 substances – Corrosive substances](#)

### Dangerous Goods Classes where there are No ‘Current’ Standards

- Class 4 - Flammable Solids; Substances Liable to Spontaneous Combustion; Substances which in Contact with Water, Emitting Flammable Gases
- Class 6 - Toxic and Infectious Substances
- Class 7 - Radioactive Material

For these types of classes where there are no current Standards, Emergency Procedure Guides should follow the information included in [HB 76-2010, Dangerous Goods - Initial Emergency Response Guide](#).

### General Storage and Handling

Standards covering storage and handling requirements for dangerous goods are regulated by State Workplace Health and Safety Authorities, [Safe Work Australia](#) and [Competent Authorities for Road and Rail Transport](#). See the [Regulators](#) section of this guide for further details.

General information on the storage and handling requirements for all types of dangerous goods can be found in [AS/NZS 3833:2007, The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers](#).

The storage and handling Standard for Class 9 dangerous goods is [AS/NZS 4681:2000, The storage and handling of Class 9 \(miscellaneous\) dangerous goods and articles](#).

### Storage and Handling in Port Areas

Requirements and recommendations for the handling and transport of dangerous cargoes in port areas (including facilities, berths and operations) is included in [AS 3846-2005, The handling and transport of dangerous cargoes in port areas](#). The purpose of this Standard is to provide minimum acceptable safety requirements for the handling and transport of dangerous goods at port facilities, including operating procedures, repair work, emergency planning and fire protection.

### General Classes of Dangerous Goods

Agricultural and Veterinary Chemicals (Fertilisers and Pesticides) Miscellaneous (class 9) types of dangerous goods used and located on farms should be stored by meeting the requirements outlined in:

- Australian farms  
[AS 2507-1998, The storage and handling of agricultural and veterinary chemicals](#).
- New Zealand farms  
[NZS 8409:2004, Management of agrichemicals](#)

Ammonium nitrate fertilisers are commonly used agricultural chemicals. These fertilisers can be stored and handled by following the information included in [AS 4326-2008, The storage and handling of](#)



**oxidizing agents**. This Standard sets out requirements and recommendations for the safe storage and handling of oxidizing agents that meet the Division 5.1 classification criteria of the ADG Code.

Pesticides are also commonly used as agricultural chemicals and are classified as organic peroxides. Requirements and recommendations for the storage, handling, dispensing and disposal of organic peroxides can be found in [AS 2714-2008, The storage and handling of organic peroxides](#).

The SWMS publication [S813.0403, Safe Work Method Statement - Irrigation System - Landscaping - Installation](#) provides comprehensive information on the safety steps involved with the supply and installation of irrigation systems into commercial and domestic landscape areas on public and private property.

## Aerosols

Aerosol containers used in Australia and New Zealand should be designed, manufactured, labelled, packaged and tested to the requirements covered in [AS 2278.1-2008, Aerosol containers – Metal aerosol dispensers of capacity 50 mL to 100 mL inclusive](#). Aerosols are classified under Standards and regulations as Class 2 flammable gases.

Aerosol containers are classified as flammable gases. Large quantities of flammable gases should be stored and handled by following the procedures described in [AS 4332-2004, The storage and handling of gases in cylinders](#).

## Corrosive Substances (Batteries)

Organisations and personnel storing (including in fixed tanks) industrial and commercial quantities of corrosive substances should follow the procedures described in [AS 3780-2008, The storage and handling of corrosive substances](#). Eyewash facilities used in areas where corrosive substances are being used should conform to the requirements defined in [AS 4775-2007, Emergency eyewash and shower equipment](#).

Those responsible for transporting large quantities of batteries should follow the information contained in:

- [AS 1678.8A1-2004, Emergency procedure guide – Transport – Group text EPGs for class 8 substances – Corrosive substances](#)
- [HB 76-2010, Initial Emergency Response Guide](#)

Battery rooms should be designed to meet the requirements outlined in the [AS 3011, Electrical installations - Secondary batteries installed in buildings Series](#) and [AS 2676, Guide to the installation, maintenance, testing and replacement of secondary batteries in buildings Series](#) which includes airflow requirements for battery rooms storing vented and sealed batteries.

Secondary batteries are commonly used with forklifts. Information on requirements for facilities where these types of batteries are charged is included in [AS 2359.6-1995, Powered industrial trucks – Safety code](#).

## Primary Batteries

Primary batteries are usually disposable and they are mostly used with consumer products. They are also used with portable types of information technology equipment (mobile phones and portable equipment). Manufacturing, safety and labelling requirements for primary is included in the [IEC 60086, Primary batteries Series](#) and [EN 60086, Primary batteries Series](#).

## Secondary Batteries

Secondary batteries are designed to be recharged and they can be used in a variety of applications. These batteries are more commonly used to provide back-up and stand-by power supply in buildings and generators. In these instances secondary batteries should be manufactured and maintained according to:

- [AS 4086.1-1993, Secondary batteries for use with stand-alone power systems – General requirements](#)
- [AS 4086.2-1997, Secondary batteries for use with stand-alone power systems – Installation and maintenance.](#)

Secondary batteries designed to be recyclable should be marked with the International Recycling symbol and information on this is included in [IEC 61429 Ed 1.0, Marking of secondary cells and batteries with the international recycling symbol ISO 7000-1135](#) or [I.S. EN 61429:1997, Marking of Secondary Cells and Batteries With The International Recycling Symbol ISO 7000-1135 and Indications Regarding Directives 98/86/eec and 91/57/eec.](#)

## Lead-acid Starter Batteries

Starter batteries should be manufactured to meet the requirements outlined in [AS 2149-2003, Starter batteries – Lead-acid.](#)

Information on battery chargers used with starter batteries can be found in the section [Battery Charges](#) of this guide.

## Traction Batteries

Traction batteries are commonly used to provide power to forklifts (also known as industrial trucks) and should be tested to:

- [AS 2402.1.1-2005, Traction batteries - Lead-acid - Vented cells - Requirements](#)
- [AS 2402.2.1-2005, Traction batteries - Lead-acid - Valve-regulated cells - Requirements](#)

Installation requirements for traction batteries are included in:

- [AS 2402.1.2-2005, Traction batteries - Lead-acid - Vented cells - Installation and usage](#)
- [AS 2402.2.2-2005, Traction batteries - Lead-acid - Valve-regulated cells – Installation and usage](#)

Information on battery chargers used with traction batteries can be found in the section [Battery Charges](#) of this guide (below).

## Battery Charges

Battery chargers for batteries using vented and valve-regulated cells should be tested to:

- Vented cells  
[AS 2401.1-1994, Battery chargers for lead-acid batteries - Domestic type - Battery chargers for vented cells](#)
- Valve-Regulated Cells  
[AS/NZS 2401.2:1995, Battery chargers for lead-acid batteries - Domestic type - Battery chargers for valve-regulated cells](#)

Electrical safety requirements for battery chargers are included in [AS/NZS 60335.1:2011, Household and similar electrical appliances - Safety - General requirements \(IEC 60335-1 Ed 5, MOD\)](#) and [AS/NZS 60335.2.29:2004, Household and similar electrical appliances - Safety - Particular requirements for battery chargers](#).

## Cigarette Lighters

Manufacturing and safety requirements for cigarette lighters supplied in Australia and New Zealand are included in the [AS/NZS 4867, Cigarette Lighters Series](#).

In terms of dangerous goods, butane used with cigarette lighters is classified as a cryogenic flammable gas. Organisations and personnel storing large quantities of flammable gases stored in cylinders should follow the procedures outlined in [AS 4332-2004, The storage and handling of gases in cylinders](#).

## Explosives

Definitions for terms covering requirements for different types of explosives is included in [AS 2187.0-1998, Explosives – Storage, transport and use – Terminology](#).

Information on packaging and labelling details for different types of explosives is included in [AS 1216-2006, Class labels for dangerous goods](#).

Information on methods used to manufacture, store and transport different types of fireworks is included in [AS 2187.3-1999, Explosives – Storage, transport and use – Pyrotechnics – Shopgoods fireworks – Design, performance and testing](#) and [AS 2187.4-1998, Explosives – Storage, transport and use – Pyrotechnics – Outdoor displays](#).

Organisations and personnel storing explosives should follow the procedures that are described in [AS 2187.1-1998, Explosives – Storage, transport and use – Storage](#) and [AS 2187.2-2006, Explosives – Storage and use – Use of explosives](#). [AS 2187.2-2006](#) does not include information on storage and handling requirements for the types of explosives listed below:

- Safety ammunition
- Propellant powders
- Pyrotechnics (Fireworks)
- Military Explosives

## Paints

Paints supplied in Australia and New Zealand may be classified as flammable liquids, however there are some types of paints that are non-toxic, non-flammable and environmentally friendly. Flashpoint and viscosity tests are used to determine categories for different types of flammable liquids. Paints classified as flammable liquids should be designated with UN numbers.

Paints supplied in aerosol containers should conform to [AS 2278.1-2008, Aerosol containers - Metal aerosol dispensers of capacity 50 mL to 1000 mL inclusive](#). Properties for different types of paints can be determined by completing tests that are included in the [AS/NZS 1580, Paints and related materials - Methods of test Series](#) and [AS/NZS 3730, Guide to the properties of paints for buildings Series](#).

Suspension tests used to determine non-volatile content levels for paints are included in [AS 1580.301.1-2005, Paints and related tests – Methods of test – Non-volatile content by mass](#)

[AS 1216-2006, Class labels for dangerous goods](#) includes information on labelling requirements for flammable liquids. Information on packaging and labelling requirements for paints is included in the [Uniform Schedules for Drugs and Poisons](#) which has been created by the Australian Government Department of Health and Ageing Therapeutic Goods Administration.

Organisations and personnel responsible for commercial and industrial quantities of paints should follow the procedures outlined in [AS 1940-2004, The storage and handling of flammable and combustible liquids](#).

There are a number of Safe Work Method Statements (SWMS) applicable for painting:

- [S8.1.12.0095, Safe Work Method Statement - Painting - Enviro Wash System](#)
- [S8.1.12.0250, Safe Work Method Statement - Spray Painting – Booth](#)
- [S8.1.12.0251, Safe Work Method Statement - Spray Painting Outdoors](#)
- [S8.2.12.0183, Safe Work Method Statement - Painting- general safety guidelines](#)

## Radioactive Substances

Information on recommended practices for storing and handling radioactive materials can be found in:

- [ANSI N14.7-2013, Radioactive materials – Guidance for packaging Type A – Quantities of radioactive materials](#)
- [ANSI N14.36-2013, Radioactive materials – Measurement of radiation level and surface contamination for packages and conveyances](#)

Information on the transportation of radioactive substances by road or rail can be found in the [Transportation of Dangerous Goods](#) section of this guide.

## Oxidizing Substances and Organic Peroxides

Information on storage and handling requirements for Class 5.1 oxidizing substances is included in [AS 4326-2008, The storage and handling of oxidizing agents](#). Organic peroxides (Class 5.2) dangerous goods should be stored and handled by following the details outlined in [AS 2714-2008, The storage and handling of organic peroxides](#).

## Miscellaneous Classes of Dangerous Goods

Information on the storage and handling for miscellaneous classes of dangerous goods can be found in [AS/NZS 4681:2000, The storage and handling of class 9 \(miscellaneous\) dangerous goods and articles](#).

There may be occasions where mixed classes (such as gases and flammable liquids) are stored in the one area. In these instances, organisations and personnel should follow the information in [AS/NZS 3833:2007, The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers](#).

## Gas

### Gas Installations

Different types of fuel gases can be installed by following the information included in the [AS 5601, Gas installations Series](#), which are also available as [AS/NZS 5601 SET:2013 Gas installations Set](#).

Gas appliances specifically for boats and caravans should be installed by following the information in [AS/NZS 5601.2:2013, Gas installations – LP Gas installations in caravans and boats for non-propulsive purposes](#).

## Gas Cylinders

Gas Cylinder Testing Stations should be used to inspect cylinders at regular intervals. Information on procedures that should be followed by Gas Cylinder Testing Stations is included in the [AS 2337, Gas cylinder test stations Series](#).

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For further information on the [Gas Cylinder Testing Certification Scheme](#) you can refer to the [SAI Global Product Certification Schemes](#) section of this guide or contact SAI Global [Product Certification Services](#) Group on the following:  
**PHONE:** +61 2 8206 6322  
**EMAIL:** [product@saiglobal.com](mailto:product@saiglobal.com)

## Manufacturing

Information on design and manufacturing requirements for cylinders containing gases other than acetylene, aerosols, or cylinders used with aircraft equipment are included in [AS 2030.1-2009, Gas cylinders – General requirements](#). Additional requirements for different types of gases are included in:

- [AS 2030.2-1996, The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene](#)
- [AS 2030.4-1985, The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders – Insulated](#)
- [AS 2030.5-2009, Gas cylinders - Filling, inspection and testing of refillable cylinders](#)

Cylinders containing acetylene should be manufactured according to the information that is included in [AS 2527-2006, Cylinders for dissolved acetylene](#). Manufacturing requirements for aerosol containers are included in [AS 2278.1-2008, Aerosol containers - Metal aerosol dispensers of capacity 50 mL to 1000 mL inclusive](#).

Regulators and valves used to manufacture cylinders should be tested to:

- [AS 4267-1995, Pressure regulators for use with industrial compressed gas cylinders](#)
- [AS 2473, Valves for compressed gas cylinders Series](#)

Manufacturing requirements for aluminium and steel cylinders containing compressed gases is included in:

- [AS 1777-2005, Aluminium cylinders for compressed gases - Seamless - 0.1kg to 130kg](#)
- [AS 2875-1995, Alloy steel cylinders for compressed gases – Seamless 0.1 kg to 500 kg](#)

- [AS 2469-2005, Steel cylinders for compressed gases – Welded two-piece construction – 0.1kg to 150kg](#)
- [AS 2470-2005, Steel cylinders for compressed gases – Welded three-piece construction with longitudinal joint – 11kg to 150kg](#)
- [AS 3577-2006, Steel cylinders for compressed gases - Welded - 150 kg to 500 kg](#)

Cylinders designed to store dissolved acetylene should be manufactured to [AS 2527-2006, Cylinders for dissolved acetylene](#).

Steel cylinders sold, supplied and refilled in Australia and New Zealand should be designed to meet the requirements covered in:

- [AS 2469-2005, Steel cylinders for compressed gases – Welded two-piece construction – 0.1kg to 150kg](#)
- [AS 2470-2005, Steel cylinders for compressed gases – Welded three-piece construction with longitudinal joint - 11kg to 150kg](#)
- [AS 3577-2006, Steel cylinders for compressed gases – Welded – 150kg to 500kg](#)

Aluminium cylinders sold, supplied and used in Australia and New Zealand should be designed to conform to:

- [AS 2875-1995, Alloy steel cylinders for compressed gases – Seamless 0.1kg to 500kg](#)
- [AS 1777-2005, Aluminium cylinders for compressed gases – Seamless 0.1 kg to 130kg](#)

Regulators used with gas cylinders in industrial applications should be manufactured and tested to [AS 4267-1995, Pressure regulators for use with industrial compressed gas cylinders](#). Valves used with gas cylinders should be tested to the [AS 2473, Valves for compressed gas cylinders Series](#).

Gas cylinders, tanks, containers or bottles filled with LP gas for vehicle conversions should be designed and manufactured to the requirements specified in [AS/NZS 3509-2009, LP Gas fuel vessels for automotive use](#).

Hoop wrapped cylinders supplied in Australia and New Zealand should be tested to meet requirements outlined in [AS 2764-2002, Fibre reinforced plastics \(FRP\) aluminium alloy gas cylinders – Hoop overwrapped](#).

Information on labelling requirements for cylinders used for different applications is also included in [AS 4484-2004, Gas cylinders for industrial, scientific, medical and refrigerant use – Labelling and colour coding](#).

## Storage and Handling

Organisations and personnel storing commercial and industrial quantities of different gases stored in cylinders in one area should follow the methods described in [AS 4332-2004, The storage and handling of gases in cylinders](#). This Standard covers storage and handling requirements for the following types of dangerous good classes:

- Class 2.1 - Flammable gases
- Class 2.2 - Non-flammable, non-toxic gases
- Class 2.3 - Toxic gases



Information on storing and handling other types of gases (for only one type of gas in one area) can be found in:

- [AS/NZS 1596:2008, The storage and handling of LP Gas](#)
- [AS 1894-1997, The storage and handling of non-flammable cryogenic and refrigerated liquids](#)
- [AS/NZS 2022:2003, Anhydrous ammonia – Storage and handling](#)
- [AS/NZS 2927:2001, The storage and handling of liquefied chlorine gas](#)
- [AS 3961-2005, The storage and handling of liquefied natural gas](#)

Persons responsible for handling refrigerant gases can use [S8.1.12.0213, Safe Work Method Statement – Refrigerant Gases](#).

### Filling, Decanting and Refilling

Cylinders should be refilled and inspected by following the methods described in [AS 2030.5-2009, Gas cylinders – Filling, inspection and testing of refillable cylinders](#). Additional information on filling and inspection requirements for cylinders containing acetylene and welded insulated cylinders is included in:

- [AS 2030.1-2009, Gas cylinders - General requirements](#)
- [AS 2030.2-1996, The verification, filling, inspection and maintenance of cylinders for the storage and transport of compressed gases – Cylinders for dissolved acetylene](#)
- [AS 2030.4-1985, The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases – Welded cylinders – Insulated](#)
- [AS 2030.5-2009, Filling, inspection and testing of refillable cylinders](#)

Cylinders containing medical air and oxygen should be decanted and filled by following the procedures that are described in [AS 3848.1-1999, Filling of portable gas cylinders – Decant filling of medical air and oxygen into portable cylinders – Safe procedures](#).

Diving (SCUBA) cylinders and cylinders used for non-underwater breathing (SCBA) should be decanted and filled by the methods prescribed in [AS 3848.2-1999, Filling of portable gas cylinders – Filling of portable cylinders for self-contained underwater breathing apparatus \(SCUBA\) and non-underwater self-contained breathing apparatus \(SCBA\) – Safe procedures](#).

### Gas Distribution Networks

Organisations responsible for managing gas distribution networks should follow the procedures recommended in the [AS/NZS 4645, Gas distribution networks Series](#). These Standards are specifically for gas distribution networks that are not connected to consumer mains, don't convey LP gases and don't convey liquids.

Steel pipelines with hoop stresses greater than 20% are included in [AS 2885.1-2012, Pipelines - Gas and liquid petroleum - Design and construction](#).

Organisations and personnel storing, designing, constructing, installing and operating only one type of gas in one area should follow the details outlined in:

- [AS 1894-1997, The storage and handling of non-flammable cryogenic and refrigerated liquids](#)
- [AS/NZS 2022:2003, Anhydrous ammonia – Storage and handling](#)

- [AS/NZS 2927:2001, The storage and handling of liquefied chlorine gas](#)
- [AS 3961-2005, The storage and handling of liquefied natural gas](#)

## Gas and Liquid Petroleum Pipelines

[AS/NZS 1596-2008, The storage and handling of LP Gas](#) specifies requirements for the location, design, construction, commissioning and operation of installations for the storage and handling of LP gas. Emergency planning requirements for accidents involved with LP gases are also included in this Standard.

Gas and liquid petroleum pipelines used on land or sea (offshore platforms) should be designed by following the details included in [AS 2885.0-2008, Pipelines – Gas and liquid petroleum – General requirements](#) and [AS 2885.1-2012, Pipelines – Gas and liquid petroleum – Design and construction](#). These Standards only cover requirements for pipelines designed to convey single-phase and multi-phase hydrocarbon fluids. A detailed diagram providing information on these types of pipelines is also included in [AS 2885.0-2008](#).

Submarine pipelines should be designed by following the details outlined in [AS 2885.4-2010, Pipelines – Gas and liquid petroleum – Submarine pipeline systems](#).

Gas and liquid petroleum pipelines should be welded by following the procedures that are recommended in [AS 2885.2-2007, Pipelines – Gas and liquid petroleum – Welding](#).

Operational and maintenance requirements that should be followed by organisations and personnel using gas and liquid petroleum pipelines are included in [AS 2885.3-2001, Pipelines – Gas and liquid petroleum – Operation and maintenance](#).

Marking details for pipelines conveying different types of gases and liquids is included in [AS 1345-1995, Identification of the contents of pipes, conduits and ducts](#) and [AS 4977-2008, Petroleum products – Pipeline, road tanker compartment and underground tank identification](#).

Installation and consumer piping for fuel gases (including town gas, natural gas, liquefied petroleum gas in a vapour phase, tempered liquefied petroleum gas, simulated natural gas, or similar substance) is included in the [AS 5601, Gas installations Series](#). Specifically, mandatory requirements and means of compliance for the design, installation and commissioning of LP Gas installations in caravans and boats for non-propulsive purposes is included in [AS/NZS 5601.2:2013](#). The AS 5601 Series is also available as [AS/NZS 5601 SET:2013 Gas installations Set](#). Gas systems connected to LP cylinders are covered in [AS/NZS 1596:2008](#).

Field testing requirements for gas and liquid petroleum pipelines can be determined by following [AS/NZS 2885.5:2012, Pipelines - Gas and liquid petroleum - Field pressure testing](#).

## Underground Petroleum Storage Pipes for Service Stations

Organisations and personnel designing, installing, operating, maintaining and repairing underground pipelines conveying petroleum products and oils should follow the types of practices that are described in [AS 4897-2008, The design, installation and operation of underground petroleum storage systems](#). A checklist that should be followed by personnel operating and maintaining underground petroleum storage pipelines is also included in this Standard.

## Pipelines Dispensing Beverages

Gas piping systems used to dispense beverages should be designed, tested, installed and commissioned by following the details outlined in [AS 5034-2005, Installation and use of inert gases for beverage dispensing](#). This Standard covers requirements for non-toxic and non-flammable (class



2.2) compressed gases. A table listing requirements for inert gas systems used to dispense beverages commonly found in hotels, restaurants and pubs is also included in this Standard.

## Laboratory and Medical Areas

Information on requirements for safety in laboratories can be found in the [AS 2243, Safety in laboratories Series](#).

Organisations with personnel working within laboratories and medical areas can also follow the information included in [AS/NZS 4543, Protection devices against diagnostic medical X-radiation](#).

The SWMS publication [S8.1.12.0143, Safe Work Method Statement - Infectious Waste](#) is a comprehensive 10 page procedure outlining the safety steps for the handling and disposal of infectious waste (including cultures, blood and blood products, needles and other materials that may cause diseases in humans) when cleaning laboratories.

## Medical Gas Pipelines

Medical gas pipelines supplying non-flammable gases should be designed, tested, operated and installed by following the information that is included in [AS 2896-1998, Medical gas systems – Installation and testing of non-flammable medical gas pipeline systems](#). This Standard covers requirements for piped vacuum and venturi ejector suction system. Standards Australia has not established any Standards covering requirements for pipelines that are designed to store flammable medical gases.

## Oxygen and Gas Reticulation Systems

Gas reticulation systems are primarily used to supply gases for industrial, laboratory and medical applications. Oxygen and acetylene piping and reticulation systems should be designed to meet the requirements specified in [AS 4289-1995, Oxygen and acetylene gas reticulation systems](#).

Gas cylinders used with oxygen and gas reticulation systems should be designed and manufactured to the requirements specified in [AS 2030.1-2009, Gas cylinders - General requirements](#). Design and manufacture requirements of foreign cylinders imported for filling and immediate export, or imported full for use and exported for refilling can also be found in this Standard.

Regulators and pressure relief valves used with gas reticulation systems should be manufactured to:

- [AS 1271-2003, Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels](#)
- [AS 4267-1995, Pressure regulators for use with industrial compressed gas cylinders](#)
- [AS 4840-2001, Low pressure regulators for use in industrial compressed gas reticulation systems](#)

These types of valves should be installed by following the methods outlined in [AS 3892-2001, Pressure equipment – Installation](#).

## Toxic and Infectious Substances

Toxic (Class 6.1) substances should be stored and handled by following the details outlined in [AS/NZS 4452:1997, The storage and handling of toxic substances](#). The storage and handling Standard for infectious (Class 6.2) substances is included in [AS/NZS 3816:1998, Management of clinical and related wastes](#). There is also a Handbook available to this Standard called [HB 202-2000, A management system for clinical and related wastes – Guide to the application of AS/NZS 3816-1998, Management of clinical and related wastes](#).

## Storage

Methods for storing gases located in laboratories should follow the requirements outlined in:

- [AS/NZS 2243.2:2006, Safety in laboratories – Chemical aspects](#)
- [AS/NZS 2243.6:2010, Safety in laboratories – Plant and equipment aspects](#)
- [AS/NZS 2243.10:2004, Safety in laboratories – Storage of chemicals](#)

## Vehicle Gas Conversions

Organisations and personnel responsible for connecting LP gas fuel systems to vehicles should follow the procedures outlined in [AS/NZS 1425:2007 LP Gas fuel systems for vehicle engines](#). This Standard also includes information on recommended ventilation rates for vehicle pits.

Cylinders, pressure vessels and tanks used to store LP gas for vehicle conversions should be designed and manufactured to the requirements specified in [AS/NZS 3509:2009, LP Gas fuel vessels for automotive use](#). Pressure vessels used for LP conversions are classified as serially produced pressure vessels and these should be designed and manufactured to the requirements defined in [AS 2971-2007, Serially produced pressure vessels](#).

Information on recommended ventilation rates for areas where vehicle conversions are being undertaken is included in [AS/NZS 1425:2007](#). This Standard also includes information on compliance plates that should be placed on cylinders, tanks and pressure vessels used for LP conversions.

Information on recommended safe work practices (including recommended signs that should be worn by personnel engaged in these types of activities) should be followed by persons doing LP and Compressed Natural Gas (CNG) conversions are outlined in [AS 2746-2008, Working areas for gas-fuelled vehicles](#). This Standard also includes information on ventilation of service pits used to undertake gas conversions.

CNG refuelling stations should be designed, operated and maintained by following the recommendations described in [AS 5092-2009, CNG refuelling stations](#).

Personnel connecting Liquefied Petroleum and CNG gases to industrial equipment should follow the types of techniques that are described in [AS 4983-2010, Gas fuel systems for forklifts and industrial engines](#).

Natural Gas (NG) fuel systems for mounted on vehicle engines should be designed and constructed to meet the requirements of [AS/NZS 2739:2009, Natural gas \(NG\) fuel systems for vehicle engines](#).

## Lubricants and Oils

Lubricants have different types of properties and can be used for a wide variety of applications. Lubricants that are classified with UN numbers are deemed to be dangerous goods.

## Storage and Handling

Organisations and personnel responsible for commercial and industrial quantities of lubricants and oils should follow the procedures outlined in [AS 1940-2004, The storage and handling of flammable and combustible liquids](#) and [AS/NZS 5026:2012, The storage and handling of Class 4 dangerous goods](#).

## Manufacturing

International Standards cover both slideway lubricants and lubricants manufactured from mineral oils. Slideway lubricants are typically used with machine tools and they are designed to provide a surface that is stable under loads. Lubricants manufactured from mineral oils are commonly used with engines and provide high levels of protection against rust and oxidation.

A diagram summarising classes and viscosity grades for the lubricants, gas oils and marine oils is included in [ISO 8681-1986, Petroleum products and lubricants – Method of classification – Definition of classes](#). A table listing codes used to designate different types of lubricants, industrial oils and related products is included in [ISO 6743-99:2002, Lubricants, industrial oils and related products \(class L\) – Classification – Part 99: General](#). More detailed information on classification requirements for all types of lubricants is included in the [ISO 6743, Lubricants, industrial oils and related products \(class L\) - Classification Series](#).

Information on manufacturing and performance requirements for lubricants used for different applications is included in the Standards referenced below:

- Lubricants for Engine Oils
  - [ISO 13738:2011, Lubricants, industrial oils and related products \(class L\) – Family E \(Internal combustion engine oils\) – Specification for two-stroke-cycle gasoline engine oils \(categories EGB, EGC and EGD\)](#)
  - [ISO 24254:2007, Lubricants, industrial oils and related lubricants \(class L\) – Family E \(internal combustion engine oils\) – Specifications for oils for use in four-stroke cycle motorcycle gasoline engines and associated driveways \(categories EMA and EMB\)](#)
- Lubricants for Gears  
[ISO 12925-1:1996, Lubricants, industrial oils and related products \(class L\) – Family C \(gears\) – Gears: Part 1: Specifications for lubricants for enclosed gear systems](#)
- Lubricants for Hydraulic Systems
  - Anti-Rust and Anti-Oxidation Properties  
[ISO 11158:2009, Lubricants, industrial oils and related products \(class L\) - Family H \(hydraulic systems\) - Specifications for categories HH, HL, HM, HV and HG](#)
  - Fire Resistant Properties  
[ISO 12922:2012, Lubricants, industrial oils and related products \(class L\) - Family H \(Hydraulic systems\) - Specifications for hydraulic fluids in categories HFAE, HFAS, HFB, HFC, HFDR and HFDU](#)
  - Environment Friendly Lubricants  
[ISO 15380:2011, Lubricants, industrial oils and related products \(class L\) - Family H \(Hydraulic systems\) - Specifications for categories HETG, HEPG, HEES and HEPR](#)
- Lubricants for Turbines
  - [ISO 8068:2006, Lubricants, industrial oils and related products \(class L\) – Family T \(Turbines\) – Specification for lubricating oils for turbines](#)
  - [ISO 10050:2005, Lubricants, industrial oils and related products \(class L\) – Family T \(Turbines\) – Specifications for triaryl phosphate ester turbine control fluids \(category ISO-L-TCD\)](#)
  - [ISO 4261:1993, Petroleum products – Fuels \(class F\) – Specifications of gas turbine fuels for industrial and marine applications](#)

- Lubricants for Machining  
[ISO 19378:2003, Lubricants, industrial oils and related products \(class L\) – Machine-tool lubricants – Categories and specifications](#)
- Lubricants for Metalworking  
[ISO/TS 12927:1999, Lubricants, industrial oils and related products \(class L\) – Family M \(Metalworking\) – Guidelines for establishing specifications](#). (Note: this Standard covers requirements for non-aqueous and water–miscible metalworking fluids)

## Flammable and Combustible Liquids/Dusts

### Storage

[AS 1940-2004, The storage and handling of flammable and combustible liquids](#) provides requirements and recommendations for the design, construction and operation of installations where flammable or combustible liquids are stored and handled. This Standard also provides requirements for minor storage, package storage, and storage of liquids in tanks, as well as, fire protection and emergency management.

Further information on storage and handling of combustible liquids and combustible dusts can also be found in:

- [AS/NZS 4745:2012, Code of practice for handling combustible dusts](#)
- [AS/NZS 5026:2012, The storage and handling of Class 4 dangerous goods](#)

Minor quantities of flammable and combustible liquids located in different areas should be stored by following the procedures that are described in [AS 1940-2004](#). This Standard also covers information on methods used to store larger quantities of flammable and combustible liquids.

### Classification

Flashpoint and viscosity tests are used to classify flammable and combustible liquids into groups. These types of tests are included in the [AS 2106, Methods for the determination of the flash point of flammable liquids \(closed cup\) Series](#). Viscosity tests for flammable liquids substances are also included in [ASTM D4359-90\(2012\), Standard Test Method for Determining Whether a Material is a Liquid or a Solid](#). Suspension tests used to determine non-volatile content levels for paints are included in [AS 1580.301.1-2005, Paints and related tests – Methods of test – Non-volatile content by mass](#).

### Fire-resistant Separating Walls (Bunds)

Information on requirements for fire-resistant separating walls (also known as bunds) used to store flammable and combustible liquids is also included in [AS 1940-2004](#). Fire resistance tests for bunds and other types of building materials are determined by completing the types of tests that are included in [AS 1530.4:2005, Methods for fire tests on building materials, components and structures – Fire-resistance test of elements of construction](#).

Materials used to manufacture these types of structures can be designed to conform to the [BSI 7959, Materials used for the control of liquid spillages Series](#). Bunds that have been designed to this British Standard should also be tested to [AS 1530.4:2005](#).

## Equipment Use

For information on the use of equipment in areas where flammable or combustible liquids dust are, or may be present, refer to the section [Explosion Protected Equipment](#) of this guide,

## Tanks and Containers

Standards covering storage, transportation and manufacturing requirements for tanks and containers that are designed to store dangerous goods cover requirements for freight containers, above ground tanks, underground tanks and road tankers.

Organisations and personnel responsible for removing and disposing of underground petroleum storage tanks should follow the procedures recommended in [AS 4976-2008, The removal and disposal of underground petroleum storage tanks](#).

Steps and platforms used with tanks should conform to the requirements in [AS 1657-1992, Fixed platforms, walkways, stairways and ladders – Design, construction and installation](#).

## Storing Dangerous Goods in Tanks and Containers

Personnel working with and storing mixed classes of dangerous goods in packages and intermediate bulk containers (also known as freight containers) should follow the methods described in:

- [AS/NZS 3833:2007, The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers](#) which covers minimum requirements for the storage and handling of more than one class of dangerous goods in packages or intermediate bulk containers (IBCs) (also known as freight containers) with capacities up to 1.6 m<sup>3</sup>. This Standard should not be used to store radioactive substances
- [AS/NZS 4681-2000, The storage and handling of Class 9 \(miscellaneous\) dangerous goods and articles](#) differs from the requirements covered in [AS/NZS 3833:2007](#) as it can only be used in instances where Class 9 dangerous goods are stored in bulk containers and packaged stores

## Steel Tanks

Steel tanks used to store flammable and combustible liquids can be designed and manufactured by following the information included in [AS 1692-2006, Steel tanks for flammable and combustible liquids](#).

Vertical tanks of any size can also be designed and manufactured by following the information contained in:

- [API 620 Ed 12 \(2013\), Design and construction of large, welded, low-pressure storage tanks](#)
- [API 650, Ed 12 \(2013\), Welded tanks for oil storage](#)
- [PN EN 14015:2004, Specification for the design and manufacture of site built, vertical, cylindrical, flat-bottomed, above ground, welded, steel tanks for the storage of liquids at ambient temperature and above](#)

## Glass-Fibre Reinforced Plastic Tanks

Glass-Fibre reinforced plastic (GRP) tanks are also commonly used to store flammable and combustible liquids. Tanks produced from this material can be designed and manufactured by following the information in:

- [EN 976-1:1998, Underground tanks of Glass-reinforced Plastics \(grp\) – Horizontal cylindrical tanks for the non-pressure storage of liquid petroleum based fuels – Requirements and test methods for single wall tanks](#)
- [EN 976-2:1998, Underground tanks for glass-reinforced plastics \(grp\) – Horizontal cylindrical tanks for the non-pressure storage of liquid petroleum based fuels – Transport, handling storage and installation of single wall tanks](#)
- [UL 1316 Ed. 2 \(1994\), Glass fibre reinforced plastic underground storage tanks for petroleum products, alcohols and alcohol gasoline mixtures](#)

## Above-ground Storage Tanks

Steel horizontal, rectangular and vertical tanks used to store flammable and combustible liquids should be manufactured to the requirements defined in [AS 1692-2006, Steel tanks for flammable and combustible liquids](#). This Standard also includes a detailed summary of information that should be provided by tank manufacturers.

Vertical tanks of any size may also be manufactured to the European and American Standards below:

- [API 620 Ed. 11 \(2008\), Design and Construction of Large, Welded, Low-Pressure Storage Tanks](#)
- [API 650 Ed. 12 \(2013\), Welded Tanks for Oil Storage](#)
- [EN 14015:2004, Specification for the design and manufacture of site built, vertical, cylindrical, flat-bottomed, above ground, welded, steel tanks for the storage of liquids at ambient temperature and above](#)

Steel tanks should be welded by following the procedures described in the [AS/NZS 1554, Structural steel welding Series](#). More specifically, the most common Standard used for welding is [AS/NZS 1554.1:2004, Structural steel welding – Welding of steel structures](#).

## Underground Storage Tanks

Standards Australia has not established any Standards for underground storage tanks. However, underground storage tanks are commonly manufactured from glass fibre reinforced (GRP) and steel and the European and UL Standards covering manufacturing requirements for GRP and steel underground storage tanks is included below:

- [EN 976-1:1998, Underground Tanks Of Glass-reinforced Plastics \(grp\) - Horizontal Cylindrical Tanks For The Non-pressure Storage Of Liquid Petroleum Based Fuels - Requirements And Test Methods For Single Wall Tanks](#)
- [EN 12285-1:2003, Workshop Fabricated Steel Tanks - Part 1: Horizontal Cylindrical Single Skin And Double Skin Tanks For The Underground Storage Of Flammable And Non-flammable Water Polluting Liquids](#)
- [EN 12542:2010, Lpg Equipment and Accessories - Static Welded Steel Cylindrical Tanks, Serially Produced for the Storage of Liquefied Petroleum gas \(lpg\) Having a Volume not Greater Than 13 M\[3\] - Design and Manufacture](#)
- [UL 58 Ed. 9 \(1996\), Steel Underground Tanks for Flammable and Combustible Liquids](#)
- [UL 1316 Ed.2 \(1994\), Glass Fibre Reinforced Plastic Underground Storage Tanks For Petroleum Products, Alcohols, And Alcohol Gasoline Mixtures](#)

Underground storage tanks can be marked by following the information that is included in [AS 4977-2008, Petroleum products – Pipeline, road tanker compartment and underground tank](#)



**identification.** Those responsible for the removal and disposal of underground petroleum storage tanks should follow the information that is included in [AS 4976-2008, The removal and disposal of underground petroleum storage tanks](#).

### Removal and Disposal of Underground Petroleum Storage Tanks

Those responsible for removing and disposing of underground petroleum storage tanks are required to follow the information included in [AS 4976-2008, The removal and disposal of underground petroleum storage tanks](#).

### Road Tankers

Road tankers used to transport dangerous goods should be manufactured to the [AS 2809, Road tank vehicles for dangerous goods Series](#).

### Small Containers (Jerry cans) Used To Store Fuel

Portable plastic and metal containers used to store up to 25 L of fuel should be designed and manufactured to the requirements specified in [AS/NZS 2906:2001, Fuel containers – Portable-plastic and metal](#).

### Explosion Protected Equipment

Electrical equipment used in areas where flammable gases/vapours, or combustible dusts may be present must be designed to be explosion protected and should be certified under the [IECEX](#), or [ANZEx](#) schemes.

Information on requirements and technical instructions on the repair, overhaul, reclamation and modification of equipment designed for use in explosive atmospheres is included in [AS/NZS 3800:2012, Electrical equipment for explosive atmospheres - Repair and overhaul](#).

### Equipment Used in the Presence of Flammable Gases and Vapours

Electrical equipment used in areas where flammable gases and vapours are, or may be present should be zoned according to the information contained in [AS/NZS 60079.10.1:2009, Explosive atmospheres – Classification of areas – Explosive gas atmospheres \(IEC 60079-10-1, Ed.1.0\(2008\) MOD\)](#).

Electrical equipment used in these areas is required to be installed and maintained by using the information included in:

- [AS/NZS 60079.14:2009, Explosive atmospheres – Electrical installations, design, selection and erection \(IEC 60079-14, Ed. 4.0 \(2007\) MOD\)](#)
- [AS/NZS 60079.17:2009, Explosive atmospheres – Electrical installations inspection and maintenance \(IEC 60079-17, Ed.4.0 \(2007\) MOD\)](#)

A list of flammable gases and vapours, flashpoint levels for gases and vapours and temperature ratings for electrical equipment that may be used with dangerous goods is included in [AS/NZS 60079.20.1:2012, Explosive atmospheres – Material characteristics for gas and vapour classification – Test methods and data](#).

## Equipment Used in the Presence of Combustible Dusts

Electrical equipment used in areas where combustible dusts are present, or may be present, should be zoned by following the information contained in [AS/NZS 60079.10.2:2011, Explosive atmospheres – Classification of areas – Combustible dust atmospheres](#).

Electrical equipment used in these areas should be selected and installed by using the information included in [AS/NZS 61241.14:2005, Electrical apparatus for use in the presence of combustible dust – Selection and installation \(IEC 61241-14, Ed.1.0\(2004\) MOD\)](#).



## SAI Global Product Certification Schemes

SAI Global Limited is the largest provider of third party product certification services in Asia Pacific, and is accredited against a broad range of Australian and International Standards, via its wholly owned subsidiary SAI Global Certification Services Pty Limited.

The [Product Certification Services](#) Group offers a wide range of certification schemes tailored for dangerous goods.

### StandardsMark™

StandardsMark™ is a [System 5 certification scheme](#) which is used to certify manufacturers of electrical equipment to specific product performance Standards. The '5 ticks' StandardsMark™ certification requirements are:

- Testing of sample products by independent accredited laboratories
- Verification of test reports
- Audit of the manufacturing site for initial and ongoing compliance

### CE Programs

CE Program for Pressure Equipment Directive (PED) 97/23/EC is offered to those selling their pressure equipment products in the European Union. The SAI Global certification scope includes European certification of materials, and jointing (welding) approvals, for example fire extinguishers.

CE Program for Simple Pressure Vessel Directive (SPD) 87/404/EEC is offered to those selling their simple pressure vessel products in the European Union. The SAI Global certification scope covers all simple pressure vessel products.

### Gas Cylinder Test Station

Gas Cylinder Test Station certification specifies the requirements for the certification of gas cylinder test stations as specified in the [AS 2337, Gas cylinder test stations Series](#). SAI Global certifies test stations to test cylinders of various categories. Some examples of these categories are:

- welded and brazed (BBQ, camping and other types of LPG cylinders other than automotive)
- seamless (SCUBA, CO2 fire extinguishers)
- composite (previously known as fibre reinforced plastic and breathing apparatus)
- automotive LPG (LPG fuel vessels for cars)
- automotive CNG (natural gas fuel cylinders for trucks and buses).



Please contact the [Product Certification Services](#) Group if you require any further information on the above schemes.

**PHONE:** +61 2 8206 6322

**EMAIL:** [product@saiglobal.com](mailto:product@saiglobal.com)

## Online Resources

Since January 2013, most Australian jurisdictions have enacted the new harmonised WHS Act. Find out what this means with Sherriff's Work Health & Safety Law Guide.

[www.saiglobal.com/WHS](http://www.saiglobal.com/WHS)

Get anywhere, anytime access to information of which Australian Standards are referenced in which Australian Commonwealth, State and Territory legislation.

[www.saiglobal.com/LexConnect](http://www.saiglobal.com/LexConnect)

Do you need to be alerted of regulatory updates and how these changes are applicable to your business processes?

[www.saiglobal.com/Compliance/products-and-services/regulatory-news/asiapac/safety-health-environment-compliance.htm](http://www.saiglobal.com/Compliance/products-and-services/regulatory-news/asiapac/safety-health-environment-compliance.htm)

Do you need online access to the Australian Dangerous Goods Code and all the referenced Australian Standards®?

[www.saiglobal.com/ADGC](http://www.saiglobal.com/ADGC)

Do you need guidance on which Australian Standards® or parts thereof are referred to in legislation?

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## Regulators

### Transporting Dangerous Goods Regulators

A list of State/Territory regulators for the transportation of dangerous goods by road and rail is available from the [Australian Government Department of Infrastructure and Transport](#).

### Storing Dangerous Goods Regulators

#### Safe Work Australia

Website: [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

Email: [info@safeworkaustralia.gov.au](mailto:info@safeworkaustralia.gov.au)

#### WorkCover Authority of NSW

Website: [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

#### WorkSafe Victoria

Website: [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au)

#### Workplace Health and Safety Queensland

Website: [www.deir.qld.gov.au](http://www.deir.qld.gov.au)

#### Department of Mines and Petroleum

Website: [www.dmp.wa.gov.au](http://www.dmp.wa.gov.au)

#### Tasmanian Government Workplace Standards

Website: [www.wst.tas.gov.au](http://www.wst.tas.gov.au)

#### NT Worksafe

Website: [www.worksafe.nt.gov.au](http://www.worksafe.nt.gov.au)

#### Worksafe ACT

Website: [www.worksafe.act.gov.au](http://www.worksafe.act.gov.au)

#### Safe Work SA

Website: [www.safework.sa.gov.au](http://www.safework.sa.gov.au)

### LP Conversion Regulators

A list of regulators and responsible for enforcing regulations and codes of practice for personnel responsible for converting LP gas to vehicles is included in [AS/NZS 1425:2007, LP Gas fuel systems for vehicle engines](#).

### Chemical Safety Regulators

#### Australian Government

#### Australian Pesticides and Veterinary Medicines Authority (APVMA)

Website: [www.apvma.gov.au](http://www.apvma.gov.au)

Email: [contact@apvma.gov.au](mailto:contact@apvma.gov.au)

**Australian Government**

**Australian Government Department of Health and Ageing**

**National Industrial Chemicals Notification and Assessment Scheme - NICNAS**

Website: [www.nicnas.gov.au](http://www.nicnas.gov.au)

Email: [info@nicnas.gov.au](mailto:info@nicnas.gov.au)

**Safe Work Australia**

Website: [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

Email: [info@safeworkaustralia.gov.au](mailto:info@safeworkaustralia.gov.au)

**Gas Regulators**

For a list of gas regulators available from each State and Territory in Australia and New Zealand, refer to the Gas Technical Regulators Committee website [www.gtrc.gov.au/contact](http://www.gtrc.gov.au/contact).

**Customer Service Contacts**

**Information Services Division**

**Standards & Technical Information Group**

**PHONE** (within Australia): 131 242 (Press 1)

**PHONE** (outside Australia): +61 2 8206 6010 (Press 1)

**EMAIL:** [sales@saiglobal.com](mailto:sales@saiglobal.com)

**Also visit:** [StandardsWatch: be alerted when Standards change](#)

**Assurance Services Division**

**Product Certification Services Group**

**PHONE** (within Australia): 1300 360 314

**PHONE** (outside Australia): +61 2 8206 6322

**EMAIL:** [product@saiglobal.com](mailto:product@saiglobal.com)

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