



Dangerous Goods Safety information sheet

Overview of storage and handling regulations

Introduction

This document is for guidance only and the definitive statutory requirements are contained in the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 (the regulations).

The regulations outlines the statutory requirements for the manufacture, processing, storage, use and disposal of dangerous goods.

In relation to dangerous goods, 'handling' includes manufacture, process, pack, use, sell, supply, carry (including by pipeline) and disposal of dangerous goods.

References to the *Australian Code for the Transport of Dangerous Goods by Road and Rail ADG Code*] in the regulations relate to the current edition of the ADG Code.

Scope of the regulations

The classification of some dangerous goods is at variance to the United Nations (UN) system of classification that, strictly, is only appropriate for transport.

For example, if sulphur is formed to a specific shape (e.g. prills, granules), UN recommendations on transport provide an exemption. However, as sulphur poses a special fire hazard in storage in all its forms, the regulations classify all types of sulphur as dangerous goods for the purpose of storage and handling.

Importantly, goods too dangerous to be transported (Appendix A of the ADG Code), are covered by the regulations and, due to their extreme hazard (high instability or high reactivity), require licensing at very low quantities (50 kg). These goods are not classified under the UN system of classification.

Ammonium nitrate is classified by the UN as a Division 5.1 oxidiser and will continue to be transported in accordance with ADG Code. Safety controls for storage of ammonium nitrate are addressed under the regulations and security controls are covered under the Dangerous Goods Safety (Security Sensitive Ammonium Nitrate) Regulations 2007.

The regulations extends to dangerous goods outside of workplaces (as defined in the *Occupational Safety and Health Act 1984*). However, small quantities of dangerous goods listed in regulation 6(l) will be exempt if present outside of workplaces.

The regulations do not apply to explosives, asbestos, radioactive substances of Class 7 and infectious substances of Division 6.2, or dangerous goods:

- that form part of batteries used in plant
- that form part of the refrigeration system of refrigerated freight containers
- in a fuel container that is fitted to a vehicle, vessel or aircraft, mobile plant, appliance or other device, where the dangerous goods are being used in its operation
- in portable firefighting equipment, portable safety equipment or portable medical equipment when provide for use at the site
- storage or handling systems and pipelines, made safe or thoroughly cleaned and free of dangerous goods

- that are the property of any of the Australian defence forces and that are on any land or in any building owned or held under lease by the Commonwealth
- in pneumatic tyres (compressed gas)
- in balloons or dirigibles (Division 2.2 dangerous goods)
- comprising potable liquids in consumer containers at retail premises
- comprising naturally occurring gas in an underground mine
- comprising of combustible liquid filled electrical cables
- in small quantities specified in regulation 6(l)
- at a mine, that are –
 - (i) within a heap of ore rock that is in the process of being heap leached; or
 - (ii) within the material in a tailings dam; or
 - (iii) an unprocessed ore, whether excavated or not.

Duties of the operator

While everyone in a workplace has duties under the Storage and Handling Regulations, the operator's duties are most significant.

The duties of the operator can be categorised into risk assessment and risk control, provision of information and safety planning responsibilities.

Rural and 'small quantity (below placarding quantity) dangerous goods' locations are exempted from the requirements for emergency plans, and have simplified requirements apply [rr. 123–133].

A rural dangerous goods location is a place:

- with an area of 5 ha or more
- outside a town
- used by the operator for agricultural, horticultural, floricultural, aquaculture or pastoral purposes, and
- where the dangerous goods or combustible liquids are being stored or handled but not supplied to others.

Risk control measures for above placarding quantities

Above the 'placarding quantity' of Schedule 1 of the regulations (see Appendix 1), the site must be placarded.

Adequate risk control measures must be applied to dangerous goods facilities storing or handling above placard quantities.

Approved codes of practice provide guidance on what risk control measures need to be applied for the storage of various types of dangerous goods. For example, Australian Standard AS 1940 *Storage and handling of flammable and combustible liquids* provides guidance for fuel storage facilities.

Operators must be aware of the hierarchy of control measures and need to consider elimination, substitution and quantity reduction of dangerous goods when undertaking a risk assessment as the risk control options of first choice.

Specific performance-based control measures are required by the Storage and Handling Regulations. Any plant and structure associated with the dangerous goods must be designed, manufactured, installed, operated, maintained and repaired in a way that reduces the risk as far as practicable.

There are specific control requirements, such as:

- separating dangerous goods from protected places (e.g. offices, warehouses)
- segregating incompatible dangerous goods
- spillage containment
- fire protection.

Additional duties above manifest quantity

Above the manifest quantity of Schedule 1, which is ten times the placarding quantity, the following additional duties apply:

- documented dangerous goods risk assessment
- licensing of the dangerous goods site
- emergency manifest and site plan at the site
- written emergency plan

While some sites do not require licensing, the safety requirements of the regulations still apply.

Some dangerous goods sites may also be classified as major hazard facilities under the Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007.

Figure 1 summarises the regulatory regime for the storage and handling of dangerous goods. Additionally, Appendix 2 provides a summary of the regulatory requirements for various quantities of dangerous goods stored on a site.

Dangerous goods licences are covered in more detail in [Licensing and exemptions for storage and handling – guidance note](#).



Figure 1 Schematic showing storage and handling regulatory regime

Licensing

The regulations have provisions for the handling of multiple dangerous goods stores (below manifest quantity) and temporary storages at a dangerous goods site (see r. 25).

Underground petroleum storage systems

Regulation 62 of the regulations require all new underground petroleum storage systems for petroleum products Class 3 dangerous goods and combustible liquids to comply with the requirements in AS 4897 *The design, installation and operation of underground petroleum storage system*. Alternative safety measures for the design, installation and operation of underground storage or handling systems are permitted only if they are documented and achieve the same or a lower level of risk.

Dangerous goods in ports

Requirements for the safe handling of dangerous goods in port areas are covered within Part 8A of the regulations. Berth operators who handle dangerous goods above manifest quantity of the Storage and Handling Regulations will require a dangerous goods site licence.

Infringement notices

The Storage and Handling Regulations contain provisions for the issue of infringement notices for breaches of the regulations.

Infringement notices may be issued for matters including those relating to placarding, segregation, manifests, site plans, emergency plans, risk assessment documentation and others.

An operator may elect to have the matter dealt with by the court.

Appendix 1 Schedule 1 of the regulations

Item	Description of dangerous goods	Packing group	Placarding quantity	Manifest quantity
1.	Division 2.1 except aerosols*	N/A	500 L	5,000 L
2.	Division 2.2 except aerosols	N/A	1 000 L	10,000 L
3.	Division 2.3	N/A	50 L	500 L
4.	Division 2.1 and 2.2 aerosols	N/A	5 000 L	10,000 L
5.	Any one of Class 3, Division 4.1, 4.2 or 4.3, Division 5.1 or 5.2, Division 6.1, Class 8 or Class 9, or any combination of those classes or divisions	I	50 kg or L	500 kg or L
		II and III (aggregate)	1,000 kg or L	10,000 kg or L
		I, II and III (aggregate) where quantity of goods in packing group I does not exceed 50 kg or L	1,000 kg or L	10,000 kg or L
6.	Goods too dangerous to transport	N/A	5 kg or L	50 kg or L
7.	Combustible liquids with fire risk dangerous goods	N/A	1,000 L	10,000 L
8.	Other combustible liquids	N/A	10,000 L	100,000 L

* Excludes empty tanks [r. 25(6)]

Notes:

For the purposes of item 5 in the Table —

- (a) all Type B Division 4.1 Self Reactive Substances that do not have a packing group assigned to them are to be taken to be assigned to packing group I;
- (b) all Types C to F Division 4.1 Self Reactive Substances that do not have a packing group assigned to them are to be taken to be assigned to packing group II;
- (c) all Type B Division 5.2 Organic Peroxides that do not have a packing group assigned to them are to be taken to be assigned to packing group I;
- (d) all Types C to F Division 5.2 Organic Peroxides that do not have a packing group assigned to them are to be taken to be assigned to packing group II;
- (e) Class 9 dangerous goods that do not have a packing group assigned to them are to be taken to be assigned to packing group III;
- (f) all other articles and things that do not have a packing group assigned to them are to be taken to be assigned to packing group II.

Appendix 2 Requirements of Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007 for various quantities of dangerous goods stored on site

Requirement	Below placarding quantity	Exceeding placarding quantity but below manifest quantity	Exceeding manifest quantity
Provisions for spills or leaks	Yes [r. 123]	Yes [r. 51]	Yes [r. 51]
Segregation of DG	Yes [r. 124]	Yes [r. 52]	Yes [r. 52]
Impact protection for DG	Yes [r. 125]	Yes [r. 54]	Yes [r. 54]
Control of ignition sources	Yes [r. 126]	Yes [r. 56]	Yes [r. 56]
Labelling of DG container(s) (compliant with ADG Code)	Yes [r. 127]	Yes [r. 59]	Yes [r. 59]
Decommissioning of DG storage or handling systems	Yes [r. 128]	Yes [r. 63]	Yes [r. 63]
Provision of personal protective equipment (PPE)	Yes [r. 129]	Yes [r. 129]	Yes [r. 129]
Security requirements to prevent unauthorised access to DG	Yes [r. 130]	Yes [r. 66]	Yes [r. 66]
Safety data sheets	Yes [r. 131]	Yes [r. 20]	Yes [r. 20]
Training and supervision of people involved with DG	Yes [r. 132]	Yes [rr. 80, 81]	Yes [rr. 80, 81]
Underground storage and handling systems	Yes [r. 133]	Yes [r. 62]	Yes [r. 62]
Duties for transfer of dangerous goods	No*	Yes [r. 55]	Yes [r. 55]
Adequate separation distances	No*	Yes [r. 58]	Yes [r. 58]
Lighting	No*	Yes [r. 64]	Yes [r. 64]
Clear entrances and exits	No*	Yes [r. 65]	Yes [r. 65]
Area cleared of fire hazards to within 3 m	No*	Yes [r. 67]	Yes [r. 67]
Containment of DG incidents	No*	Yes [r. 76]	Yes [r. 76]
Fire control equipment	No*	Yes [r. 73]	Yes [r. 73]

Requirement	Below placarding quantity	Exceeding placarding quantity but below manifest quantity	Exceeding manifest quantity
Requirements for hazardous atmospheres (including ventilation)	No*	Yes [r. 57]	Yes [r. 57]
Labelling of pipework containing DG	No	Yes [r. 60]	Yes [r. 60]
Requirements for bulk DG	No	Yes [r. 61]	Yes [r. 61]
Placarding	No	Yes [rr. 68, 69, 70, 71, 72]	Yes [rr. 68, 69, 70, 71, 72]
Requirements for incidents, reporting and investigations	No	Yes [r. 120]	Yes [r. 120]
Risk assessment	No*	No*	Yes [rr. 48, 49, 82]
Requirements for an emergency plan	No	No	Yes [rr. 75, 82]
Dangerous goods site licencing	No	No	Yes [rr. 25 – 48A]
Manifest	No	No	Yes [r. 78]
Site plan	No	No	Yes [r. 78]

Note: "No" indicates that measures contained in an approved code of practice should be applied as per Section 8 and 20 of the Dangerous Goods Safety Act 2004.*