

STORAGE OF CHEMICALS

**Guidance Note
for Placarding Stores
for Dangerous Goods and
Specified Hazardous Substances
[NOHSC:3009(1990)]**

**Guidance Note
for Emergency Services Manifests
[NOHSC:3010(1990)]**

June 1990

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ISBN 0 644 12701 5

First published 1990

Reprinted with corrections 1991

Reprinted with corrections 1993

Reprinted June 1996

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FOREWORD

The National Occupational Health and Safety Commission (NOHSC) is a tripartite body established by the Commonwealth Government to develop, facilitate and implement a national occupational health and safety strategy.

This strategy includes standards development and the development of common national approaches to OHS legislation; the development of industry-based preventive strategies and the promotion of best practice in the management of OHS in the workplace; research and statistics; chemical assessment; information collection and dissemination and raising the standard of OHS training and education.

The National Commission comprises representatives of peak employee and employer bodies—the Australian Council of Trade Unions and the Australian Chamber of Commerce and Industry—as well as the Commonwealth, State and Territory governments.

Consistent with the National Commission's philosophy of consultation, tripartite standing committees have been established to deal with issues relating to standards development, research and the mining industry. Expert groups and reference groups may be established to provide advice to the standing committees on those issues with which the National Commission is concerned.

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PREFACE

The National Occupational Health and Safety Commission recognises that emergency services have specialised needs for chemical information. Information about the location and nature of chemicals stores is needed, particularly by the fire services which attend emergencies at these stores and often face unknown hazards.

The Working Party on Chemical Information Systems for Emergency Services was convened by the National Commission's Chemicals Standing Committee to consider what information is needed by emergency services about chemicals stores. Representatives of the fire brigade unions and the Australian Assembly of Fire Authorities were included on the Working Party to ensure that the special needs of the fire services were recognised.

The Working Party on Chemical Information Systems for Emergency Services recommended that a uniform national placarding system was required, together with the provision of emergency services manifests. *Placards* are necessary to provide the primary warning of the presence of stored chemicals and are essentially signs which display what types of chemicals are stored and the appropriate emergency procedures. *Manifests* provide more detailed information on the chemicals stored and their location within a store. The Working Party on Chemical Information Systems for Emergency Services produced the *Draft Guidance Note for the Placarding of Chemical Stores* and the *Draft Guidance Note for Emergency Service Manifests* which were released for public comment in March 1989.

Public comment on the two draft documents was reviewed by an expert review group which consisted of State dangerous goods experts and representatives of fire brigade unions and fire brigade authorities. The following two guidance notes, which were produced by the expert review group and endorsed by the National Commission, are included in this publication:

- *Guidance Note for Placarding Stores for Dangerous Goods and Specified Hazardous Substances*; and
- *Guidance Note for Emergency Services Manifests*.

**GUIDANCE NOTE
FOR PLACARDING STORES
FOR DANGEROUS GOODS AND
SPECIFIED HAZARDOUS SUBSTANCES
[NOHSC:3009(1990)]**

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1. INTRODUCTION

1.1 The aim of this *Guidance Note for Placarding Stores for Dangerous Goods and Specified Hazardous Substances* is to recommend the information to be shown on placards for hazardous substances stores and to serve as the basis for uniform requirements between States and Territories, a move strongly supported by industry and the Commonwealth Government.

1.2 Current State and Territory placarding legislation for hazardous substances stores varies greatly both in the categories of hazardous substances covered and the type of information required. Emergency services are seriously concerned about inadequate placarding because of the number of fires or spills they attend at chemicals stores where the hazards are not apparent.

1.3 Placards are needed to alert emergency services, people at the workplace and the general public to the location and nature of the chemicals stored. Placards also provide information on emergency procedures so that emergency services personnel, employees, the general public and the environment are protected.

1.4 Placarding should be part of an overall management policy for the hazardous substances store. This policy encompasses the provision of occupational health and safety information including:

- the use of correct labels;
- Material Safety Data Sheets (MSDS) and workplace registers for hazardous substances and;
- emergency pre-planning procedures.

1.5 Placarded stores which contain more than one hazardous substance should also have an emergency services manifest. Guidance for the preparation of these manifests is given in the *Guidance Note for Emergency Services Manifests*, which is included in this publication.

2. SCOPE

2.1 This guidance note applies to all those substances:

- which are specified as *dangerous goods* by the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code); or
- which meet the classification criteria of the ADG Code.

2.2 It should be recognised that these groups of substances are a sub-set of all hazardous substances. It is acknowledged that other less acutely hazardous substances exist, for example, sensitising agents, and that such chemicals may be defined as hazardous in other documents.

2.3 The scope of this document provides a workable and cost effective means of covering those substances which pose the greatest threat, primarily to the emergency services. These substances are predominantly those with acute hazards.

2.4 The storage of Therapeutic Goods, Explosives (Class 1 dangerous goods) and Radioactive Substances (Class 7 dangerous goods) is not addressed in this guidance note because these groups of hazardous substances have special storage requirements under existing legislation. These requirements are generally considered to be adequate. Similarly, for those materials currently listed in Schedule 9.6 of the ADG Code, that is, goods too dangerous to be transported, reference should be made to the relevant statutory requirements.

2.5 Storage containers and goods in transit at ports are exempt from the requirements of this guidance note, since existing legislation is deemed adequate. However, placards will be required at the entrance to the storage area and the store itself.

2.6 In the context of this guidance note *storage* means both the storing and keeping of those hazardous substances which fall under the scope of this guidance note at premises, and is taken to include the presence of a substance even if it is in use. It does NOT apply to goods loaded for transport, in accordance with the definition of transport described in the ADG Code.

3. FUNCTIONS OF PLACARDS

3.1 The functions of placards for stores of hazardous substances are to:

- alert people to the presence of hazardous substances;
- identify the categories of hazardous substances stored and, in certain circumstances, the individual hazardous substances; and
- indicate required emergency actions and contacts.

3.2 Providing safe working information is not one of the primary functions of placarding.

3.3 Prohibitions such as ‘NO NAKED LIGHTS’ or pictograms of the type specified in Table 1 of Australian Standard AS 1319 *Safety Signs for the Occupational Environment*¹ may be displayed at the workplace in addition to the placards described in this guidance note.

1. Standards Australia, Australian Standard AS 1319 *Safety Signs for the Occupational Environment*, Standards Australia, Sydney.

4. INFORMATION TO BE INCLUDED ON PLACARDS

4.1 Information on placards should reflect the needs of users including emergency services, employees and the general public.

INFORMATION FOR EMERGENCY SERVICES

4.2 In the event of a spill or fire at a hazardous substances store, emergency services need to be provided with emergency action information, such as:

- the fire fighting medium required;
- the personal protection required;
- the level of risk to the environment;
- the evacuation requirements; and
- the details of the types of hazardous substances stored.

In some instances, specific identification of the individual hazardous substances stored is required.

4.3 The most effective way to provide the initial emergency action information is by placarding the Hazchem Code. The Hazchem Code was developed by the United Kingdom Fire Services and is included in the ADG Code and Australian Standard AS 1216 *Classification, Hazard Identification and Information Systems for Dangerous Goods*².

4.4 Types of hazardous substances can be identified by the use of Class labels. Different Class labels are assigned for each class of dangerous goods in Australian Standard AS 1216 and Section 3 of the ADG Code, 'Marking of Packages, Vehicles and Transport Containers'. Class labels consist of a diamond shaped warning sign containing a pictorial representation and description of the principal hazard, for example, 'Class 2.1 - Flammable gas' or 'Class 4 - Flammable solid'.

4.5 For tank and bulk storage, more specific identification of the hazardous substances is needed. This can be provided by placarding the correct technical name and UN Number of the substance in addition to the above.

INFORMATION FOR EMPLOYEES

4.6 To encourage the practice of safe working procedures, employees at a hazardous substances store need to know where hazardous substances are stored. Class labels for each hazardous substance, together with a Class description, will provide the necessary level of information. For tank or bulk storage, the correct technical name and UN Number are also necessary.

4.7 In addition to the store placard, signs relating to prohibited practices and other safe working information may need to be shown to ensure the safety of employees.

INFORMATION FOR THE GENERAL PUBLIC

4.8 Adjacent property owners and the general public need to be aware that a site is being used for the storage of hazardous substances. The level of detail required is not as great as for emergency services or employees. The general warning sign, 'HAZCHEM', together with an emergency telephone contact number for the fire brigade and police, is the minimum information needed. An emergency telephone contact number is needed because the emergency may occur when the premises are unattended.

2. Standards Australia, Australian Standard AS 1216 *Classification, Hazard Identification and Information Systems for Dangerous Goods*, Standards Australia, Sydney.

5. EXEMPTION LIMITS FOR PLACARDING

5.1 There is a need to placard premises if the aggregate quantity of each category of hazardous substance stored exceeds specified exemption limits.

5.2 National exemption limits for the placarding of chemicals stores are shown in the following table.

5.3 The purpose of defining placard exemption limits is to prevent the placarding of quantities of a hazardous substance which pose only low risks to the emergency services, workers at stores and the general public. The problem with establishing these limits is how to define the quantity of a hazardous substance which poses only low risks. There is very little data on which such a decision can be based.

5.4 In the absence of a scientific method for determining an exemption limit, an evaluation was made on the basis of perceived risk. This evaluation, together with an examination of the common unit size of dangerous goods, was used in order to set the exemption limit.

5.5 Exemption limits are given in the table for each dangerous goods Class and Packaging Group. This approach is already used in the ADG Code and South Australian legislation and recognises differences in hazard between each dangerous goods Class and Packaging Group. High hazard substances of Packaging Group I (PGI) therefore have lower exemption limits than Packaging Group II (PGII).

5.6 For the purposes of establishing exemption limits, Class 9 (miscellaneous) dangerous goods are regarded as Packaging Group III (PGIII). Aerosols, as specified in the ADG Code, are regarded as Class 9 dangerous goods.

5.7 The exemption limit for Class 6.2 infectious substances, is zero and therefore no exemption from placarding exists.

5.8 When calculating aggregate quantities, all containers should be treated as full until the container is rendered free of the hazardous substance.

5.9 In the case of package stores, the following formula is applied in order to determine whether or not placarding is required. This formula is consistent with that used in the ADG Code and the South Australian legislation. The quantity of each category and Packaging Group present is divided by the exemption limit for that category and Packaging Group.

5.10 This formula may be expressed as:

$$\left\{ \begin{array}{l} \text{for dangerous good class x} \\ \text{for dangerous good class y} \\ \text{for dangerous good class z.....} \end{array} \begin{array}{l} \frac{Q_{PGI}}{E} \\ \frac{Q_{PGI}}{E} \\ \dots\dots\dots \end{array} + \begin{array}{l} \frac{Q_{PGII}}{E} \\ \frac{Q_{PGII}}{E} \\ \dots\dots\dots \end{array} + \begin{array}{l} \frac{Q_{PGIII}}{E} \\ \frac{Q_{PGIII}}{E} \\ \dots\dots\dots \end{array} \right\}$$

Where:

Q_{PGI} is the quantity of Packaging Group I;

Q_{PGII} is the quantity of Packaging Group II;

Q_{PGIII} is the quantity of Packaging Group III; and

E is the appropriate exemption limit for that Class and Packaging Group.

5.11 If, for all the hazardous substances stored, the sum of these fractions is greater than one, placarding is required for the package store.

5.12 For example, should a store containing the following substances be placarded?

The substances are:

- 20 litres of acrolein, Class 3.1 PGI;
- 200 litres of cyclopentanol, Class 3.2 PGIII;
- 100 litres of chloromethylethylether Class 3.1 PGII; and
- 150 litres of cyclooctatetraene Class 3.1 PGII.

Here, Class 3.1 represents dangerous goods Class x, and Class 3.2 represents dangerous goods Class y.

To determine whether placarding is necessary, the calculation shown below is performed:

$$\left\{ \frac{20}{50} + \left(\frac{100}{500} + \frac{150}{500} \right) \right\} + \left\{ \frac{200}{1000} \right\} = \frac{55}{50}$$

A figure greater than one is obtained and therefore placarding is required for the above mixed store.

PLACARDING EXEMPTION LIMITS FOR CHEMICALS STORES

<i>Class of dangerous good (a) (b)</i>		<i>Packaging Group (c)</i>		
		<i>I</i>	<i>II</i>	<i>III</i>
CLASS 2.1	liquefied(kg)	----- 200 -----		
Flammable gases	non-liquefied(m ³)	----- 30 -----		
CLASS 2.2	liquefied(kg)	----- 300 -----		
Non-flammable gases	non-liquefied(m ³)	----- 100 -----		
CLASS 2.3	liquefied(kg)	----- 5 -----		
Poisonous gases	non-liquefied(m ³)	----- 2.5 -----		
CLASS 3.1				
Flammable liquids (flashpoint <23°C)	(L)	50	500	Not applicable
CLASS 3.2				
Flammable liquids (flashpoint 23°C-61°C)	(L)	Not applicable	Not applicable	1,000
CLASS 4.1				
Flammable solids	(kg)	50	500	1,000
CLASS 4.2				
Flammable substances liable to spontaneous combustion	(kg or L)	50	500	1,000
CLASS 4.3				
Flammable substances dangerous when wet	(kg or L)	25	250	1,000
CLASS 5.1				
Oxidising agents	(kg or L)	50	500	1,000
CLASS 5.2				
Organic peroxides	(kg or L)	25	250	1,000
CLASS 6.1				
Toxic and harmful substances	(kg or L)	10	100	1,000
CLASS 6.2				
Infectious substances	(kg or L)	0	0	0
CLASS 8				
Corrosives	(kg or L)	50	500	1,000
CLASS 9				
Miscellaneous	(kg or L)	----- 1,000 -----		

(a) Metric Standard Conditions for Class 2 dangerous goods.

(b) Exemption limits for Class 2 liquefied dangerous goods refer to the *weight of the contents* in kilograms (kg). Some jurisdictions may wish to use exemption limits based on storage volumes expressed as aggregate capacity in litres (L). In such cases, an appropriate conversion factor should be applied to the above exemption limits.

(c) No packaging groups defined in the ADG Code for Classes 2.1, 2.2 and 2.3.

6. PLACARDING REQUIREMENTS

6.1 Placards are to be posted when the aggregate quantity of any category of hazardous substance in a storage area exceeds its exemption limit (see Section 5). Regardless of whether placarding is needed or not, general requirements such as segregation, spillage control and security are still necessary.

ENTRANCES TO PREMISES

6.2 Entrances to premises for road and rail vehicles should be provided with outer warning placards. Each outer warning placard should be posted so as to be clearly visible to persons approaching any entrance. In the case of farms, only the principal entrance need be placarded.

Outer Warning Placard

6.3 The outer warning placard is to show:

- the word 'HAZCHEM' in red lettering, at least 100 mm high, on a white or silver background; and
- emergency contact numbers for the fire brigade and police (000 where applicable) as follows :

'IN EMERGENCY DIAL' in lettering at least 20 mm high, and

'000, POLICE OR FIRE BRIGADE' in lettering at least 30 mm high.

6.4 These requirements for outer warning placards are illustrated in the Appendix.

6.5 If, at premises containing one or more stores, the aggregate quantity of a hazardous substance stored on the whole premises is greater than its exemption limit, an outer warning placard is required.

PACKAGE STORES

6.6 Package stores are to be placarded with a composite warning placard. At package stores within a building or workplace, the composite warning placard is to be posted at the main entrance to the building or structure so as to be clearly visible at all approaches. At package stores in a room or compartment within a building or structure at the workplace, an additional composite warning placard is to be displayed at every entrance to that room or compartment.

Composite Warning Placard

6.7 The composite warning placard is to show:

- the Class label, with sides of at least 100 mm, for the class of dangerous goods stored,
 - (for Class 9 dangerous goods no pictorial Class label is specified in the ADG Code and in this case the Class label is to be the words 'CLASS 9' in red lettering, at least 50 mm high, on a white background); and
- the appropriate Hazchem Code in black lettering, at least 100 mm high, on a white or silver background, for the hazardous substance stored,
 - (for dangerous goods the appropriate Hazchem Code is specified in Section 9 of the ADG Code or is derived using the classification criteria of the ADG Code).

6.8 These requirements for composite warning placards are illustrated in the Appendix.

6.9 Hazardous substances should be segregated by distance or specific barriers to minimise the hazards. Incompatible substances should not be stored together. In a package store where one or more classes of dangerous goods are permitted to be stored together and the exemption limits as calculated in Section 5 are exceeded, placards should show:

- Class labels, with sides of at least 100 mm, for each of the types of hazardous substances stored, provided the aggregate quantity of each category of hazardous substance is greater than 10 per cent of its exemption limit; and
- a composite Hazchem Code, determined by using the table provided in the ADG Code taking into consideration all those hazardous substances exceeding 10 per cent of their exemption limits. This code is to be shown in black lettering, at least 100 mm high, on a white or silver background.

TANKS AND BULK STORES

6.10 For all tanks or bulk stores not in a building, the placard is to be posted on, or adjacent to, the tank or bulk store so as to be visible from all normal directions of approach.

6.11 For bulk stores within a building or structure, a placard is to be posted at each entrance to the store.

6.12 For tanks and bulk stores, placards are to show:

- the Class label, with sides of at least 250 mm, for the dangerous good stored, or if a subsidiary risk label is also shown, have sides of not less than 200 mm. The subsidiary risk label, if any, must have sides of not less than 150 mm,
 - (for Class 9 dangerous goods the Class label should have the words ‘CLASS 9’ in red lettering, at least 50 mm high, on a white background);
- the appropriate Hazchem Code in black lettering, at least 100 mm high, on a white or silver background, for the hazardous substance stored,
 - (for dangerous goods the appropriate Hazchem Code is specified in Section 9 of the ADG Code or derived using the classification criteria of that code); and
- the correct technical name of the hazardous substance and its UN Number. These are to be shown in black lettering, at least 100 mm high.

6.13 These requirements for tank and bulk store placards are illustrated in the Appendix. (Transport Emergency Information Panels [EIPs], as specified in the ADG Code, may be used as bulk store placards.)

6.14 Process vessels used in a batch process, for example, cyanide electroplating baths, should be placarded as for a bulk store.

UNDERGROUND TANKS AND STORES

6.15 An *underground tank* is a tank that has not less than half of its capacity below the surface of the ground and is completely covered with not less than 600 mm of earth or other approved cover. For example, underground tanks are used to store petroleum fuel and LPG in service stations or for private (non-retail) use.

6.16 An *underground store* is any store of hazardous substances below ground level other than in an underground tank, for example, basement storage of compressed gases in a hospital or hotel.

6.17 It should be noted that the underground storage of hazardous substances is not considered to be a good method of storage and, where possible, above ground storage is preferred.

6.18 The requirements for placards for underground tanks are illustrated in the Appendix.

6.19 Note: A 'service station', as defined in the Glossary of Terms, is exempted from the requirements of this guidance note.

Underground Tanks for the Storage of Class 3 Flammable Liquids

6.20 Underground tanks for the storage of Class 3 flammable liquids (motor fuels) must be constructed, designed and operated in accordance with the requirements of Australian Standard AS 1940 *The Storage and Handling of Flammable and Combustible Liquids*³.

6.21 Australian Standard AS 1940 prescribes placarding of such tank areas to include Class labels complying with Australian Standard AS 1216.1 *Part 1 - Classification and Class Labels for Dangerous Goods*, and the warning 'NO SMOKING, NO IGNITION SOURCES'.

6.22 An underground tank for the storage of Class 3 flammable liquids, which conforms to the requirements of Australian Standard AS 1940, will be exempt from the requirements of this guidance note provided a placard is sited adjacent to the tank or at the outlet showing:

- the Class 3 label, with sides of at least 100 mm; and
- the words 'UNDERGROUND TANK' in red lettering, at least 50 mm high, on a white background.

Underground Tanks Storing Hazardous Substances other than Class 3 Flammable Liquids

6.23 For underground tanks storing hazardous substances other than Class 3 flammable liquids (motor fuels), for example, underground storage of LPG, the requirements for placarding are as follows :

- a composite warning placard (the top section of an EIP conforms to this) located close to the filling point; and
- a placard located underneath showing the words 'UNDERGROUND TANK' in red lettering, at least 50 mm high, on a white background.

6.24 For LPG underground tanks, the EIP is normally located on the turret fill device.

3. Standards Australia, Australian Standard AS 1940 *The Storage and Handling of Flammable and Combustible Liquids*, Standards Australia, Sydney.

Underground Hazardous Substances Stores

6.25 Underground stores of hazardous substances are not exempt from the requirements of this guidance note.

UPDATING PLACARDS

6.26 Placards may become obsolete if companies close down operations, change the use they make of particular premises or change location. Obsolete placards should be removed or updated immediately. The inspectorate with authority or jurisdiction in this area, for example, the placarding inspectorate or the inspectorate branch of the emergency services, should have the right of entry to arrange the removal of placards which are at variance with storage conditions they refer to.

6.27 An occupier should revise a composite warning placard within 24 hours if there is a change in the type, class or quantity of hazardous substance that would require different information to be displayed on the placard.

6.28 All placards should be kept in good order, clean and unobstructed.

EXAMPLES OF PLACARDS

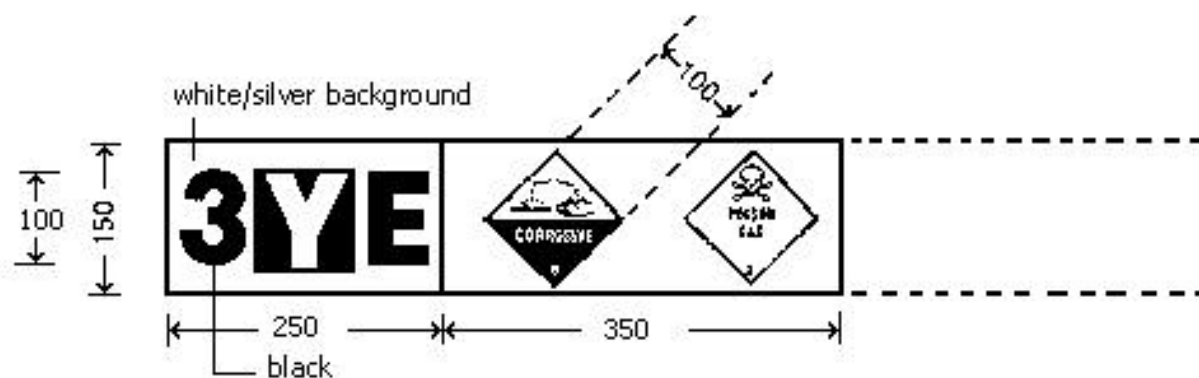
Sizes of letters are specified in the text. All other sizes are suggested overall dimensions. All measurements are in millimetres (mm).

1. ENTRANCES TO PREMISES – OUTER WARNING PLACARDS

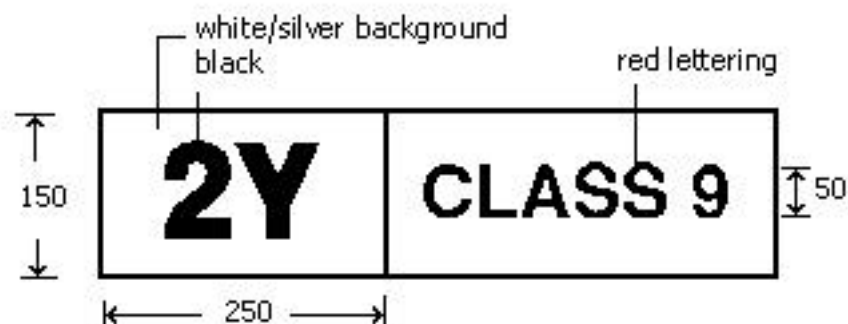


2. PACKAGE STORES – COMPOSITE WARNING PLACARDS

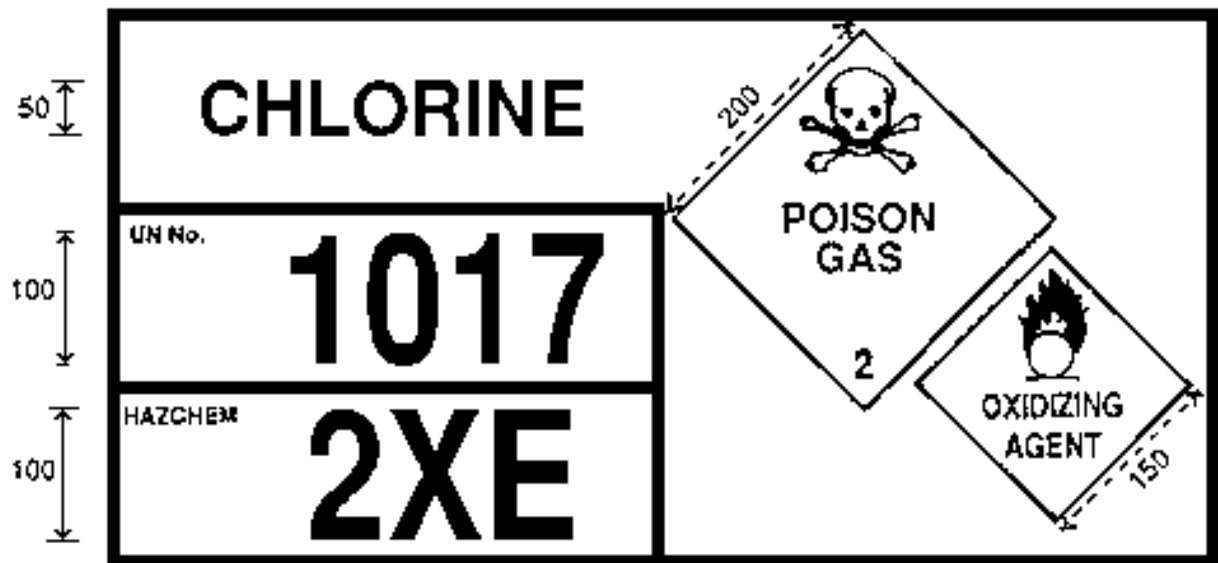
Mixed Storage



Single Storage



3. TANKS AND BULK STORES



4. UNDERGROUND TANKS

Storage of Class 3 Flammable Liquids



Storage Other than Class 3 Flammable Liquids



This placard is complemented by a composite warning placard (Top section of a Transport Emergency Information Panel (EIP)).

**GUIDANCE NOTE
FOR EMERGENCY SERVICES MANIFESTS
[NOHSC:3010(1990)]**

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1. INTRODUCTION

1.1 The aim of this *Guidance Note for Emergency Services Manifests* is to recommend requirements for emergency services manifests and to foster uniform requirements among States and Territories - a move strongly supported by industry and the Commonwealth Government.

1.2 A number of incidents involving hazardous substances in the last few years have highlighted the fact that, when dealing with emergencies at chemicals stores, emergency services are often faced with outdated, overly complex or minimal information on the likely hazards. This situation places emergency services personnel and the community at considerable risk.

1.3 Despite this experience, there is currently no legislation in force in Australia requiring companies to prepare manifests for stores containing hazardous substances.

2. SCOPE

2.1 This guidance note applies to all those substances:

- which are specified as dangerous goods, by the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code); or
- which meet the classification criteria of the ADG Code.

2.2 Where explosives and radioactive substances are kept on the same premises as these substances, it is recommended that they should also be identified on the manifest.

2.3 It should be recognised that these groups of substances are a sub-set of all hazardous substances. It is acknowledged that other, less acute, but still hazardous, substances exist, for example, sensitising agents, and that such chemicals may be defined as hazardous in other documents.

2.4 The scope of this guidance note provides a workable and cost effective means of covering those substances which pose the greatest threat to emergency services. These substances are predominantly those with acute hazards.

2.5 This guidance note applies to all establishments which store one or more hazardous substance and which are required to comply with the placarding requirements of the National Occupational Health and Safety Commission's *Guidance Note for Placarding Stores for Dangerous Goods and Specified Hazardous Substances*. The same exemption limits, that is, quantities of hazardous substances below which placarding is not required, are used for the provision of emergency services manifests.

2.6 This guidance note does NOT apply to the provision of manifests for the transportation of hazardous substances. For information on manifests for transport, refer to the relevant statutory authority and the ADG Code.

3. PURPOSE OF AN EMERGENCY SERVICES MANIFEST

3.1 The principal purpose of an emergency services manifest is to inform fire authorities and other emergency services of the **types, quantities** and **locations** of stored hazardous substances. With this information, the most appropriate emergency action can be selected so as to prevent loss of life, minimise property damage and to help avoid inappropriate action being taken.

3.2 The information contained in the manifest may also be useful to others, for example, workplace personnel (employees, safety representatives and management) and medical professionals (doctors and nurses). Employees and their representatives should have ready access to a copy of the emergency services manifest. They should also receive instruction on its purpose and be informed of the names of persons responsible for its maintenance. However, as the information requirements of these groups are different from those of emergency services, they would be better met by other more comprehensive information sources.

3.3 Organisations storing chemicals should consider the development of comprehensive workplace information systems such as chemicals registers. These could consist of detailed inventories of chemicals, together with relevant Material Safety Data Sheets and other information, to provide detailed occupational health and safety information on the stored chemicals. Chemicals registers would be of little practical value to emergency services as the information they contain is too detailed to assimilate quickly in an emergency situation.

3.4 An emergency services manifest therefore serves specialised information needs - those of emergency services dealing with incidents at chemicals stores. Manifests should not be used as substitutes for comprehensive information sources for other purposes.

4. PREPARATION OF AN EMERGENCY SERVICES MANIFEST

4.1 Each occupier of a hazardous substance store should prepare a manifest from the information contained in current stock inventories or workplace registers. If a building contains multiple stores or multiple occupants, a manifest should be prepared for each store and occupant.

4.2 Information must be **current, simple** and **accurate** to enable the correct firefighting or emergency response to be selected.

4.3 Emergency services do not require a detailed listing in the first instance of all hazardous substances stored in the establishment. The information they need comprises:

- A list of each category of hazardous substance stored using the dangerous goods Class given in the ADG Code.
 - (Substances that are classified as dangerous goods Class 2.3 and all those substances of Packaging Group I assigned in the ADG Code, should be individually itemised. Each of these substances should be identified in the emergency services manifest by both its correct technical name and UN Number.)
- For each category of hazardous substance the maximum anticipated quantities stored.
- A site plan containing a storage area floor plan showing the location of each category of hazardous substance and dangerous goods Class 2.3 and all substances of Packaging Group I, together with a list of the maximum quantities of these substances at each location. An example of a site plan is given in the Appendix. The term 'location' denotes the location within a store, perhaps defined by a grid reference. In storage areas where there is a substantial short term variation in the quantities of hazardous substances stored, for example, in manufacturing process storage areas, it is not necessary to indicate the exact locations on the storage area floor plan. In such a situation, regular consultation with the local fire authority should occur so that they are fully aware of the changing situation.

4.4 Each store should be recorded on a separate manifest sheet, with the location of the store, in relation to the overall site, clearly indicated.

4.5 These information requirements are illustrated in the Appendix.

4.6 In the context of this guidance note 'maximum quantity' means the upper limit of any variable quantity stored.

5. ADMINISTRATIVE AND SECURITY ARRANGEMENTS

5.1 Companies having computer-based chemicals inventories may find that the easiest way for compiling and updating an emergency services manifest is to use a computer application. Such an application may also be useful in the generation of a storage area plan. These companies may wish to consider the possibility of allowing the emergency services to gain computer access to the inventory system.

5.2 A manifest must be revised every 7 days, or sooner if workable, if there is a change in:

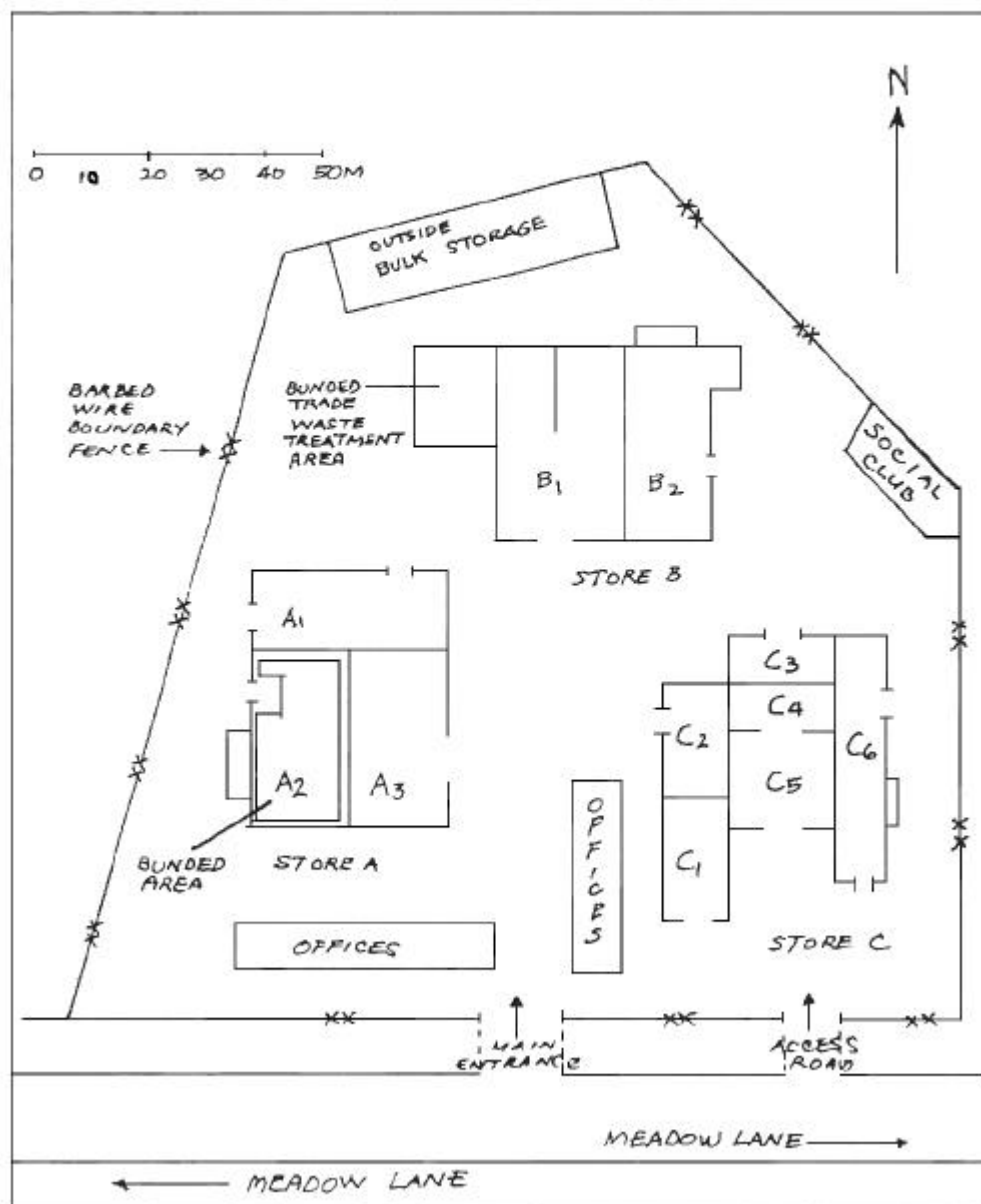
- the Class, Packaging Group or more than a 20 per cent increase in the maximum quantity of any hazardous substance stored; or
- the type of hazardous substances stored.

5.3 Emergency services manifests should be stored in a secure location readily accessible to the emergency services and protected against any interference and fire. The particular secure location chosen for storing the manifest should be determined after consultation with the local fire authority.

APPENDIX

SAMPLE SITE PLAN SHOWING LOCATION OF HAZARDOUS SUBSTANCES

NAME OF PREMISE CLARK COATES CHEMICALS
 ADDRESS 35-45 MEADOW LANE BOTANY NSW
 NO. OF BUILDINGS 6 NO. OF CHEMICALS STORES 3



SAMPLE EMERGENCY SERVICES MANIFEST FORM

SAMPLE EMERGENCY SERVICES MANIFEST FORM

COMPANY NAME CLARRICOATES CHEMICALS
EMERGENCY CONTACT F. PEARBODY **PHONE (24 HOUR)** 02-333-699
ADDRESS 35-45 MEADOW LANE
 BOTANY NSW 2019
PHONE 02-333-699

EMERGENCY SERVICE MANIFEST					STORE LOCATION
					STORE 'A' WEST SIDE
Category of hazardous substances and generic descriptor	Packaging group	Product name	UN number	Maximum quantity	Location within store
3 FLAMMABLE LIQUIDS	PGI	ACROLEIN	1092	100 L	A ₂
		2-CHLOROPROPANE	2352	200 L	
	PGII & III			500 L	
			Total quantity	800 L	
2.3 POISONOUS GAS	PGI	CYANOGEN CHLORIDE	1589	200 L	A ₁
		METHYLE BROMIDE	1066	200 L	
	PGII & III			-	
			Total quantity	400 L	
4.1 FLAMMABLE SOLID	PGI	-	-	-	A ₃
	PGII & III			3000 Kg	
			Total quantity	3000 Kg	

GLOSSARY OF TERMS

Article

This means an item which is formed to a specific shape, surface or design during manufacture, has an end use function dependent in whole or in part upon its shape or design, and which undergoes no change of chemical composition during end use except as an intrinsic aspect of that end use. Fluids and particles are not considered articles regardless of shape or design.

ADG Code

See Australian Code for the Transport of Dangerous Goods by Road and Rail.

Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)

A code prepared by the standing national Advisory Committee on the Transport of Dangerous Goods and endorsed by the Australian Transport Advisory Council. The code is based on recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods. The ADG Code covers the classification, packaging, marking and transport of dangerous goods.

Bulk storage

The storage of:

- Class 2 dangerous goods in a container having a capacity exceeding 500 litres;
- hazardous substances other than Class 2 dangerous goods in the form of liquid or a paste, in a container having a capacity exceeding 250 litres; or
- hazardous substances in the form of solids, stored other than in packages in quantity exceeding 400 kilograms.

Class label

A specific label described in Table 3.3 of the ADG Code which diagrammatically describes the hazard associated with a particular Class of dangerous goods.

Composite warning placard

The type of placard to be displayed at a package store comprising a composite Hazchem Code for the hazardous substances stored and their Class labels.

Correct technical name

This means, in order of preference:

- the name of the substance as listed in Sections 9 and 10 of the ADG Code; or
- a name commonly used in scientific and technical handbooks, textbooks and texts, which accurately identifies the substance.

Dangerous goods

Those substances and items specified in Section 2 of the ADG Code, listed in Sub-sections 9.4, 9.5 and 9.6 and Table 10.4 of the ADG Code, or classified as dangerous goods using the classification criteria of the ADG Code, or as declared to be such by the competent authority.

Dangerous goods Class

The Class allocated to a substance under the ADG Code.

Classification is according to the predominant type of risk involved:

Class 1 - Explosives

Class 2 - Gases: compressed, liquefied or dissolved under pressure

Class 2.1 Flammable gases

Class 2.2 Non-flammable gases

Class 2.3 Poisonous gases

Class 3 - Flammable liquids

Class 3.1 Liquids with a flashpoint below 23°C (closed cup test)

Class 3.2 Liquids with a flashpoint of 23°C or more, up to and including 61°C

Class 4 - Flammable solids

Class 4.1 Flammable solids

Class 4.2 Substances liable to spontaneous combustion

Class 4.3 Substances which emit flammable gases on contact with water

Class 5 - Oxidising agents and organic peroxides

Class 5.1 Oxidising agents

Class 5.2 Organic peroxides

Class 6 - Poisonous (toxic) and infectious substances

Class 6.1a Substances which are liable to cause death or serious injury to human health if swallowed, inhaled or by skin contact

Class 6.1b Substances which are harmful to human health if swallowed or inhaled or by skin contact

Class 6.2 Infectious substances

Class 7 - Radioactive substances

Class 8 - Corrosives

Class 9 - Miscellaneous dangerous substances

Exemption limit

The maximum stored quantity (kg or L or m³) of hazardous substance for which placarding is not required.

Hazchem Code

The Hazchem Code set out in the ADG Code and Australian Standard AS 1216 gives coded information on the firefighting medium to be used, personnel protection, risk of violent reaction or explosion, spillage action and on whether evacuation should be considered.

Metric Standard Condition (MSC)

Metric Standard Condition means a temperature of 15°C and an atmospheric pressure of 101.325 kilopascals.

Material Safety Data Sheet (MSDS)

A document that describes the properties and uses of a substance, that is, identity, chemical and physical properties, health hazard information, precautions for use and safe handling information.

Outer warning placard

The type of placard to be displayed at entrances to chemicals store premises comprising the warning HAZCHEM and emergency contact telephone numbers.

Package

The complete product of the packing operation, consisting of the packaging and its contents.

Packaging Group

As defined by the ADG Code, this means the division of dangerous goods of Classes 3, 4, 5, 6.1, 8 and 9 into three groups according to the degree of danger they present for packaging purposes:

- 'PGI' (great danger);
- 'PGII' (medium danger); and
- 'PGIII' (minor danger).

Package store

A store where hazardous substances are stored in packages only, not in bulk.

Premises

Premises includes :

- a structure, or building;
- a place (whether enclosed or built upon or not); and
- a part of premises (including premises of a kind referred to in the above two points).

Service station

Service station means a retail premises where the sale of petrol, liquefied petroleum gas or other petroleum products to the general public for use in motor vehicles is :

- the main business activity at the premises; or
- carried out in conjunction with the sale of foodstuffs and consumer goods to the general public.

Substance

A substance is defined as any natural or artificial substance, other than an article, whether in solid or liquid form or a gas or vapour. Other terms used to describe substances include 'chemicals', 'materials', 'products' and 'preparations'. Most substances do not contain a single, pure component and many are of complex and variable composition.

SI Number

Substance Identification Number. Refer to the preferred term 'UN Number'.

Tank

A receptacle having a capacity in excess of 250 litres for liquids or a capacity in excess of 500 litres for gases.

UN Number

A system of four digit numbers assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. UN Numbers are assigned to one substance or to a group of substances with similar characteristics but are not necessarily unique to one chemical.

The UN Number is listed in Column 1 of Section 9.4 of the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Workable

Workable means 'practicable' in Victoria, Queensland, Western Australia and the Northern Territory, 'reasonably practicable' in New South Wales, South Australia and the Australian Capital Territory and 'a reasonable precaution' in Tasmania.