DANGEROUS GOODS LABELS, SIGNS & BANNERS

SILVERBACK

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Dangerous goods are substances or articles with hazardous properties which may, if handled incorrectly, explode, asphyxiate (choke), burn, make explosive mixtures, poison, eat skin or metal, pollute the environment or become unstable if mixed or exposed to other products.

For ease of identification of dangerous goods, the international community has created a classification system. All dangerous goods are included in one of nine primary classes. In some cases it has also been necessary to sub-divide some of the classes into divisions in order to adequately provide articulations for the dangers of the individual goods.

All States and Territories have adopted the National Code of Practice for the Labelling of Workplace Substances (NOHSC) model for dangerous goods and storage regulations. Each state and territory have either released new, amended existing regulations incorporating hazchem placarding. These regulations have standardised storage and handling placarding requirements and apply Australia wide.

Silverback is not a regulator and cannot advise you about hazardous chemical compliance. All businesses must meet the Workplace Health and Safety requirements set out in the acts and regulations in your state or territory:

- **WorkSafe** **VIC**
  www.worksafe.vic.gov.au
- **SafeWork** **NSW**
  www.safework.nsw.gov.au
- **SafeWork** **ACT**
  www.accesscanberra.act.gov.au
- **Workplace Health and Safety Queensland**
  www.worksafe.qld.gov.au
- **WorkSafe** **SA**
  www.safework.sa.gov.au
- **WorkSafe** **WA**
  www.commerce.wa.gov.au
- **WorkSafe** **NT**
  www.worksafe.nt.gov.au
- **WorkSafe** **TAS**
  www.worksafe.tas.gov.au

The purpose of the Australian Dangerous Goods Code (ADG Code) is to define consistent technical requirements for the land transport of dangerous goods across Australia. The ADG Code should be read in conjunction with relevant state or territory law. The ADG Code adopts the structure, format, definitions and concepts of the United Nations Recommendations on the Transport of Dangerous Goods Model Regulations while retaining some Australian specific provisions. It also incorporates additional provisions for the transport of infectious substances.

The ADG Code lists provisions applicable to the transport of dangerous goods including:

- classification;
- packaging and performance testing;
- use of bulk containers, IBCs, freight containers and unit loads;
- marking and placarding;
- vehicle requirements;
- segregation and stowage;
- transfer of bulk dangerous goods;
- documentation;
- safety equipment;
- procedures during transport emergencies;
- the dangerous goods list with UN numbers.

The ADG Code also contains an information guide, a section outlining key changes and a section with frequently asked questions.

The ADG Code does not contain all requirements and guidelines relating to the transport of explosives, radioactive materials, waste products and other environmentally hazardous substances unless those products or substances are also dangerous goods within the meaning of the Code.

It is important that everyone involved in transporting dangerous goods understands their responsibilities to help prevent and/or reduce damage to people, property and the environment.

The code is given legal force in each Australian state and territory by each jurisdiction's dangerous goods transport laws. It is important that the code is read in conjunction with these laws because they provide important information, including supply chain member duties, licence requirements and competent authority panel powers.

Accessing the Australian Dangerous Goods Code

Copies of The ADG Code can be freely accessed from the National Transport Commission Website.

https://www.ntc.gov.au/

Dangerous Goods Initial Emergency Response Guide

Provides immediate general information and advice to persons handling dangerous goods emergencies. While written principally for trained emergency responders, it also contains advice which anyone, who is first on the scene of an incident, should be able to follow.

The handbook details information on hazards, protective clothing and emergency procedures and may also be used with the transport or storage of dangerous goods as listed in the 7th edition of the ADG Code and the 16th edition of the UN 'Orange book'. The lists of UN Numbers and Shipping names correspond with those in the above-mentioned documents, and are referenced to the appropriate emergency response guides.

P/N:	SIZE (mm)
25621	148.5 x 105 (A5)

- Developed by Standards Australia/Standards New Zealand
- SAA/SNZ HB 76:2010
- 324 page A5 size spiral bound book
- ISBN: 978-1-86975-135-7

HOW ARE DANGEROUS GOODS CLASSIFIED?

Dangerous goods or hazardous goods are solids, liquids, or gases that can harm people, other living organisms, property, or the environment.

Consequently, the means by which dangerous goods are to be packaged, handled, labelled, and shipped is closely monitored and governed across the world by a wide range of regulatory bodies.

There are different regulations in place for all different modes of transport and in every country.

Ultimately, for all modes of transport – sea, air, rail, road, and inland waterways – the United Nations Committee of Experts on the Transport of Dangerous Goods and other organizations, which includes the International Air Transport Association, have assigned one of nine classes to all dangerous or hazardous substances in order to help make the safe transportation of dangerous goods possible.

Please note that the numerical order of the classes of dangerous goods does not indicate degree of danger.

The 9 Classes of Dangerous Goods

Class 1 - Explosives

Explosives are classified as dangerous goods because they are capable of producing hazardous amounts of heat, light, sound, gas, or smoke.

Class 2 - Gases

The class of gases includes compressed gases, liquefied gases, dissolved gases, refrigerated liquefied gases, aerosols, and more. Gases are dangerous because they pose a serious risk as potential asphyxiants and because of their flammability.

Class 3 - Flammable Liquids

Flammable liquids are volatile and are capable of giving off a flammable vapour.

Class 4 - Flammable Solids

Flammable solids are highly combustible and can even cause fire through friction. They are capable of inflicting serious damage.

Class 5 - Oxidizing Substances

Substances which can yield oxygen are classified as dangerous goods because, although not necessarily combustible in themselves, they can contribute to the combustion of other hazardous substances.

Class 6 - Toxic & Infectious Substances

Toxic substances are classified for being able to cause serious injury or death to humans if swallowed, inhaled, or by contact with skin. Infectious substances are classified for containing pathogens, including bacteria, viruses, parasites, or other agents which can cause disease in humans or animals upon contact.

Class 7 - Radioactive Material

Radioactive materials are defined as any substance which contains atoms that are subject to radioactive decay. Consequently, whilst undergoing radioactive decay, radioactive material can emit potentially harmful ionizing radiation.

Class 8 - Corrosives

Corrosive substances react chemically to damage or destroy material, like living tissue, upon contact.

Class 9 - Miscellaneous Dangerous Goods

As the class name suggests, miscellaneous dangerous goods are substances which present a danger not covered by other classes. According to the U.N., this class includes environmentally hazardous substances, elevated temperature substances, genetically modified organisms and micro-organisms (GMO, GMMO).

Dangerous goods packages must be marked and labelled before they are assigned for shipment.

Marking: mainly refers to UN number, proper shipping names, UN specification marks and other markings if applicable (i.e. orientation arrows, environmental hazardous substances mark for UN 3077 and UN 3082 and excepted quantities mark.

Labelling: mainly means hazard symbols (and handling labels) displayed on small packages (usually less than 450 litres).

Example of Dangerous Goods Marking and Labeling

The picture below shows how a dangerous goods package should be marked and labelled.

1. Orientation label (optional)
2. Primary class label
3. Standardised UN certification (according to standard)
4. Shipping name
5. UN number
6. Subsidiary class label

Limited Quantity and Excepted Quantity Marking

Selected dangerous goods packed in small quantities (limited quantity) or very small volumes (excepted quantity) pose a lesser risk in transport than do the same goods packed in larger volumes. Thus they qualify for some relief from robust packaging requirements provided that they are packed and marked properly. This could save considerable packaging costs.

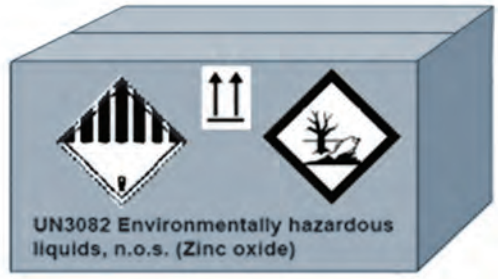
Limited Quantities Marking

Limited Quantities Marking (by air)

Excepted Quantities Marking

Environmentally Hazardous Substances Mark

Environmentally hazardous substances mark (dead fish symbol) shall be put on outer package for class 9 dangerous goods assigned with UN 3077 and UN 3082. See example below for zinc oxide.



It should be noted that the International Maritime Dangerous Goods Code (IMDG) and Australian Design Rule (ADR) also require the environmentally hazardous substances mark for dangerous goods shipments other than UN 3077 and UN 3082 as long as the dangerous goods are listed as marine pollutants or meet the criteria of marine pollutants (see example below).

Definition of Hazardous Chemicals

There is no global regulatory definition of hazardous chemicals. Generally speaking, hazardous chemicals are substances or mixtures that may pose harm to facilities/property, human health and the enviroment. A more professional definition is based on the UN GHS purple book - the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Any substances or mixtures meeting GHS classification criteria for physical hazards, health hazards and enviromental hazards will be regarded as hazardous chemicals.

For hazardous chemicals, GHS-format safety data sheets and GHS labels should be provided to recipients. To find out if a product belongs to hazardous chemicals, one should firstly check if the product is a chemical substance or mixture and then check if it meets GHS classification criteria.

It should be noted that the definition for hazardous chemicals may slightly vary from one jurisdiction to another jurisdiction. This is mainly because different jurisdictions may have adopted different versions of UN GHS and different GHS building blocks. Some jursdictions may have included chemical hazards that are not covered by GHS. For example, US has adopted flammable liquids category 4 while EU has not adopted it. In addition, US has adopted simple asphyxiants and combustible dust which are not in GHS yet. In China, chemical products classified with certain GHS hazard categories will be regarded as hazardous chemicals and require registrations.

Definition of Dangerous Goods

Dangerous goods are solids, liquids, or gases that can harm people, other living organisms, property or the environment. In the United States and sometimes in Canada dangerous goods are more commonly known as hazardous materials. A more professional defintion is from dangerous goods regulations. Any goods listed in the dangerous goods list or meeting dangerous goods classification criteria for 9 classes will be regarded as dangerous goods.

Dangerous goods are subject to stringent transport regulations. No person may offer or accept dangerous goods for transport unless those goods are properly classified, packaged, marked, labelled, placarded, described and certificated on a transport document. Dangerous goods are usually assigned with UN number and proper shipping name.

To find out if a hazardous chemical belongs to dangerous goods, one should refer to section 14 of the safety data sheet to see if there is a UN number listed. If yes, the chemical product belongs to dangerous goods. For articles, there might be no safety data sheet at all. In this case, please consult a professional DG advisor.

Differences between Hazardous Chemicals and Dangerous Goods

- Not all hazardous chemicals belong to dangerous goods. There are only 9 classes of dangerous goods and they only consider acute toxicity hazards. Even CMR (carcinogenic, mutagenic or reproductive toxicant) substances which are considered as of the greatest health concern under GHS are not covered by the 9 DG classes.
- Not all dangerous goods are hazardous chemicals. This is because dangerous goods not only include hazardous chemicals, but also include articles. For example, air bags and lithium batteries belong to dangerous goods. However, they are not regarded as hazardous chemicals.
- Chemicals that belong to dangerous goods are usually hazardous chemicals. The only exceptions are infectious substances/mixtures and radioactive substances/mixtures. They are covered by the 9 Dangerous Goods classes but not covered by GHS classification criteria.

What is the GHS?

The Globally Harmonised System (GHS) of Classification, Labelling and Packaging of chemicals (CLP) is a system designed by the UN to standardise the information given to people who produce, transport or use chemicals in order to reduce the risk to human health and the environment.

The new standard replaces many disparate and conflicting regional and national regulations and aims to reduce confusion and ensure that harmful substances are labelled in a way that can be universally understood. GHS labels should be specifically designed to provide information about the hazards of the substance and what to do in cases of spillage or contact with the material.

As of 1st January 2017, Australia has implemented the GHS for workplace hazardous chemicals (both substances and mixtures).

GHS Label & Pictogram Sizes

There are a few general principles to be aware of regarding the size of GHS labels and pictograms:

- The dimension of a GHS label should be related to package sizes.
- The minimum size of a pictogram on a GHS label should be related to the minimum size of the GHS label.
- The minimum size of a GHS pictogram on a GHS label is much smaller than a transport pictogram (100mm x 100mm) and the two should not be confused.

GHS Labels are available in three sizes: 20 x 20mm, 50 x 50mm and 100 x 100mm. These cover the three legislative sizes stated in the CLP regulations below:

CAPACITY OF THE PACKAGE (L)	DIMENSIONS OF THE LABEL (mm)	DIMENSIONS OF THE PICTOGRAM (mm)
≤ 3	If possible, at least 52 x 74	Not smaller than 10 x 10 If possible, at least 16 x 16
> 3 but ≤ 50	At least 74 x 105	At least 23 x 23
> 50 but ≤ 500	At least 105 x 148	At least 32 x 32
> 500	At least 148 x 210	At least 46 x 46

The new GHS Compliant Labels

The new labels must include six parts:

1. **Product Identifier** - should match the product identifier on the Safety Data Sheet.
2. **Signal Word** - Either use "Danger" (severe) or "Warning" (less severe).
3. **Hazard Statements** - A phrase assigned to a hazard class that describes the nature of the product's hazards.
4. **Precautionary Statements** - Describes recommended measures to minimize or prevent adverse effects resulting from exposure.
5. **Supplier Identification** - The name, address and phone number of the manufacturer or supplier.
6. **Pictograms** - Graphical symbols intended to convey specific hazard information visually.

Depending on the hazard severity of the chemical, each label will include at least one of these nine pictogram warning symbols.

GHS Compliant Label Materials

GHS labels must be chemical-resistant, abrasion-resistant, UV light resistant, weather-resistant, and must utilise a marine-grade label adhesive in order to satisfy GHS label standards for permanence.

GHS01 Explosive

Unstable explosives, explosives of various classes (1.1, 1.2, 1.3, and 1.4), self-reactive substances and mixtures, and organic peroxides.

P/N:	SIZE (mm)	SALE UNIT (qty)
14118-C	20 x 20	Roll of 1000
14118-B	50 x 50	Roll of 1000
14118-A	100 x 100	Roll of 1000

GHS02 Flammable

Extremely flammable solid, liquid, or vapour.

P/N:	SIZE (mm)	SALE UNIT (qty)
14119-C	20 x 20	Roll of 1000
14119-B	50 x 50	Roll of 1000
14119-A	100 x 100	Roll of 1000

GHS03 Oxidizing

May cause or intensify fire.

P/N:	SIZE (mm)	SALE UNIT (qty)
14122-C	20 x 20	Roll of 1000
14122-B	50 x 50	Roll of 1000
14122-A	100 x 100	Roll of 1000

GHS04 Compressed Gas

A gas under pressure that may explode if heated.

P/N:	SIZE (mm)	SALE UNIT (qty)
14115-C	20 x 20	Roll of 1000
14115-B	50 x 50	Roll of 1000
14115-A	100 x 100	Roll of 1000

GHS05 Corrosive

The corrosion label should be used for any substances that may be corrosive to metals or cause severe skin burns.

P/N:	SIZE (mm)	SALE UNIT (qty)
14116-C	20 x 20	Roll of 1000
14116-B	50 x 50	Roll of 1000
14116-A	100 x 100	Roll of 1000

GHS06 Toxic

Fatal or toxic if swallowed, inhaled or in contact with skin.

P/N:	SIZE (mm)	SALE UNIT (qty)
14123-C	20 x 20	Roll of 1000
14123-B	50 x 50	Roll of 1000
14123-A	100 x 100	Roll of 1000

GHS07 Harmful

Causes serious eye or skin irritation.

P/N:	SIZE (mm)	SALE UNIT (qty)
14120-C	20 x 20	Roll of 1000
14120-B	50 x 50	Roll of 1000
14120-A	100 x 100	Roll of 1000

GHS08 Health Hazard

May cause cancer, fertility issues, or organ damage.

P/N:	SIZE (mm)	SALE UNIT (qty)
14121-C	20 x 20	Roll of 1000
14121-B	50 x 50	Roll of 1000
14121-A	100 x 100	Roll of 1000

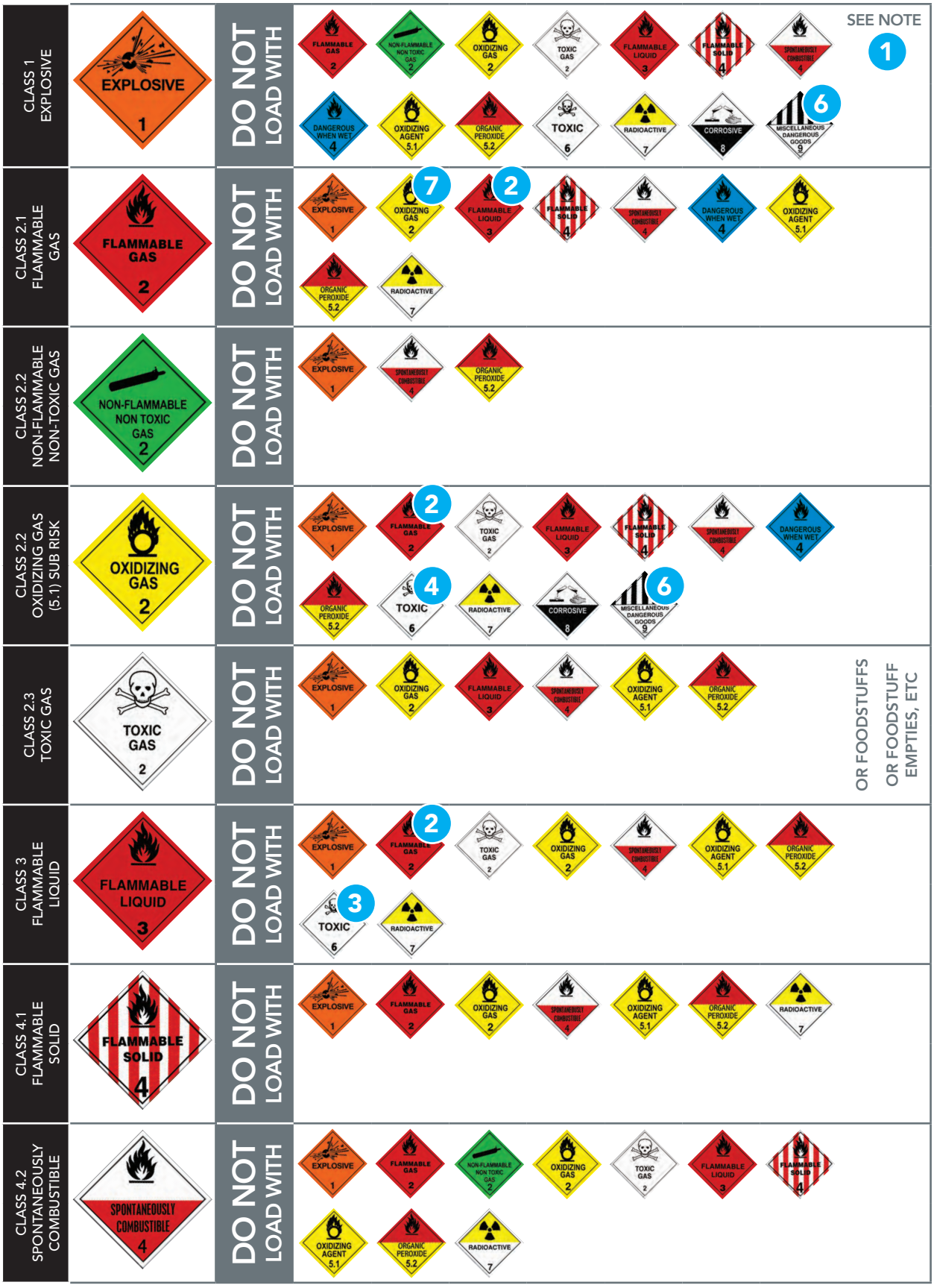
GHS09 Environmental Hazards

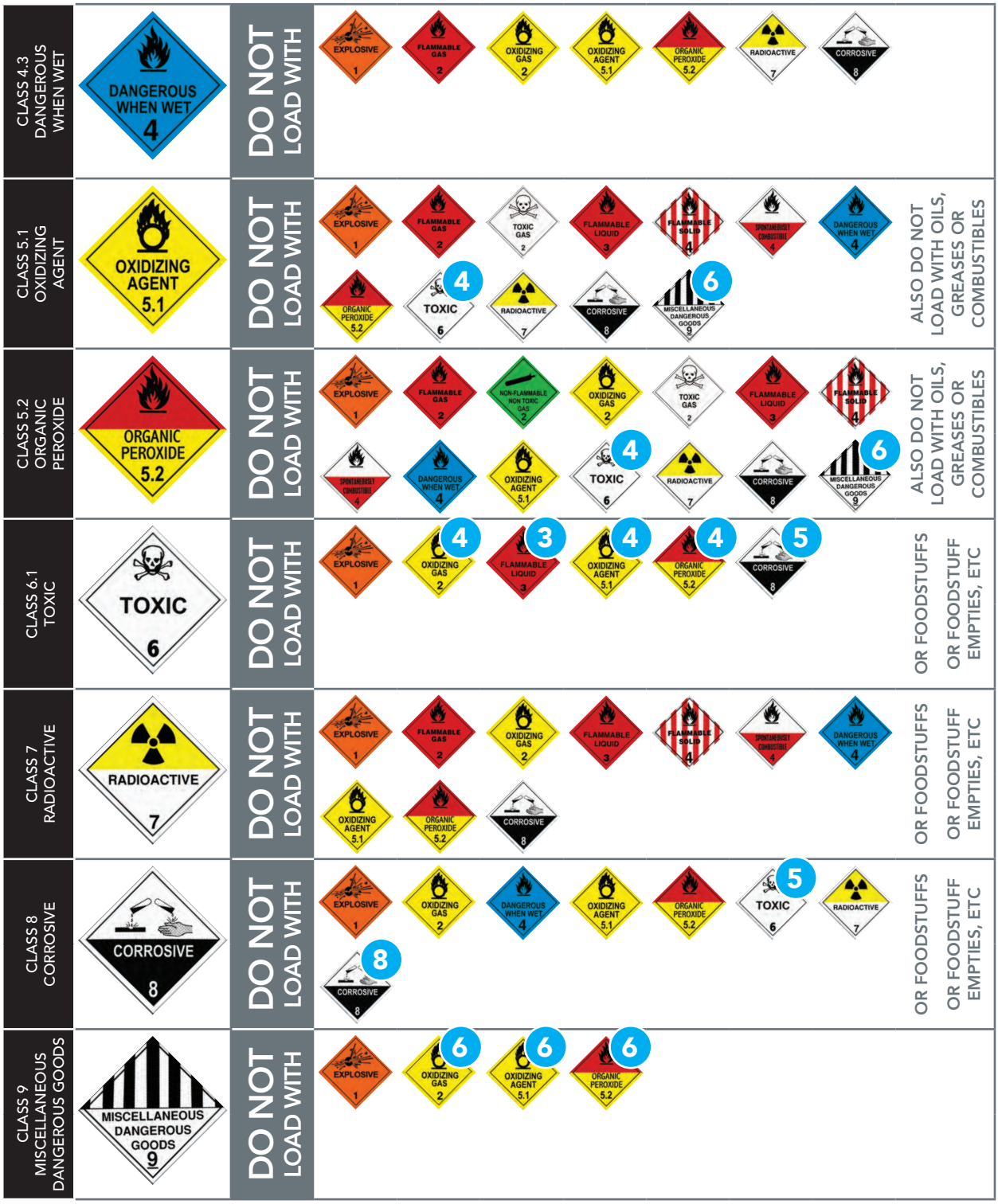
Substances potentially toxic to aquatic life.

P/N:	SIZE (mm)	SALE UNIT (qty)
14117-C	20 x 20	Roll of 1000
14117-B	50 x 50	Roll of 1000
14117-A	100 x 100	Roll of 1000

- All labels supplied as self adhesive polypropylene labels with easy-peel backing.

A guide for the segregation of dangerous goods in vehicles and freight containers.





1. Refer to Explosives Regulations for details of the transport of Explosives (Class 1.4S may be transported with any other class of dangerous goods as long as the total quantity does not exceed 1,000kg).
2. When both Classes are in bulk.
3. When the Class 3 substance is nitromethane.
4. When the Class 6 substance is a fire risk substance.
5. When the Class 6 is a Cyanide and the Class 8 is an Acid (is acidic).
6. When the Class 9 substance is a fire risk substance.
7. EXCEPTION: Flammable gases in cylinders may be transported together with compressed oxygen or oxidizing gas mixtures.
8. Concentrated strong acid is to be segregated from concentrated strong alkali.

Explosives are materials or items which have the ability to rapidly conflagrate or detonate as a consequence of chemical reaction. Explosives are capable by chemical reaction of producing gases at temperatures, pressures and speeds as to cause catastrophic damage through force and/or of producing otherwise hazardous amounts of heat, light, sound, gas or smoke.

Commonly Transported

- Ammunition
- Fireworks
- Flares
- Blasting caps and detonators
- Fuse
- Primers
- Explosive charges such as those used for blasting, demolition, etc.
- Detonating cord
- Air bag inflators
- Igniters
- Rockets
- TNT
- RDX
- PETN

- Eg: TNT, Dynamite, Nitroglycerine.

Class 1.1 - Explosive

Explosives with a mass explosion hazard. This class denotes an explosion that has the capacity to explode an entire pallet or area instantaneously.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14010-C	20 x 20	Adhesive	Roll of 1000
14010-B	50 x 50	Adhesive	Roll of 1000
14010-A	100 x 100	Adhesive	Roll of 500
14010	250 x 250	Adhesive	Single Unit
14010PP	250 x 250	PP	Single Unit
14010-M	270 x 270	Metal	Single Unit

- Eg: Blast projection hazard.

Class 1.2* - Explosive

Substances and articles which have a projection hazard but not a mass explosion hazard. **Available on special order request.*

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14012-C	20 x 20	Adhesive	Roll of 1000
14012-B	50 x 50	Adhesive	Roll of 1000
14012-A	100 x 100	Adhesive	Roll of 500
14012	250 x 250	Adhesive	Single Unit
14012PP	250 x 250	PP	Single Unit
14012-M	270 x 270	Metal	Single Unit

- Eg: Rocket propellant, display fireworks.

Class 1.3* - Explosive

Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both. **Available on special order request.*

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14013-C	20 x 20	Adhesive	Roll of 1000
14013-B	50 x 50	Adhesive	Roll of 1000
14013-A	100 x 100	Adhesive	Roll of 500
14013	250 x 250	Adhesive	Single Unit
14013PP	250 x 250	PP	Single Unit
14013-M	270 x 270	Metal	Single Unit

- Eg: Flares, fireworks, safety cartridges.

Class 1.4 - Explosive

Substances and articles which present only a small hazard in the event of ignition or initiation during transport with any effects largely confined to the package.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14014-C	20 x 20	Adhesive	Roll of 1000
14014-B	50 x 50	Adhesive	Roll of 1000
14014-A	100 x 100	Adhesive	Roll of 500
14014	250 x 250	Adhesive	Single Unit
14014PP	250 x 250	PP	Single Unit
14014-M	270 x 270	Metal	Single Unit

- Eg: Blasting agents.

Class 1.5* - Explosive

Very insensitive substances which have a mass explosion hazard.

**Available on special order request.*

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14015-C	20 x 20	Adhesive	Roll of 1000
14015-B	50 x 50	Adhesive	Roll of 1000
14015-A	100 x 100	Adhesive	Roll of 500
14015	250 x 250	Adhesive	Single Unit
14015PP	250 x 250	PP	Single Unit
14015-M	270 x 270	Metal	Single Unit

- Eg: Extremely insensitive explosives.

Class 1.6* - Explosive

Extremely insensitive articles which do not have a mass explosion hazard.

**Available on special order request.*

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14016-C	20 x 20	Adhesive	Roll of 1000
14016-B	50 x 50	Adhesive	Roll of 1000
14016-A	100 x 100	Adhesive	Roll of 500
14016	250 x 250	Adhesive	Single Unit
14016PP	250 x 250	PP	Single Unit
14016-M	270 x 270	Metal	Single Unit

Gases are defined by dangerous goods regulations as substances which have a vapour pressure of 300 kPa or greater at 50°c or which are completely gaseous at 20°c at standard atmospheric pressure, and items containing these substances. The class encompasses compressed gases, liquefied gases, dissolved gases, refrigerated liquefied gases, mixtures of one or more gases with one or more vapours of substances of other classes, articles charged with a gas and aerosols.

Dangerous gases are mostly carried under pressure to reduce their volume and save space in transport and storage.

An empty, or partially filled gas container that has contained a dangerous substance is treated the same as a full container and is therefore subject to all the relevant transport dangerous goods regulations. The container can only be treated as non-hazardous if adequate measures have been taken to nullify any hazards.

Gases are capable of posing serious hazards due to their flammability, potential as asphyxiants, ability to oxidize and/or their toxicity or corrosives to humans.

Commonly Transported

- Aerosols
- Compressed air
- Hydrocarbon gas-powered devices
- Fire extinguishers
- Gas cartridges
- Fertilizer ammoniating solution
- Insecticide gases
- Refrigerant gases
- Lighters
- Acetylene / Oxyacetylene
- Carbon dioxide
- Helium / helium compounds
- Hydrogen / hydrogen compounds
- Oxygen / oxygen compounds
- Nitrogen / nitrogen compounds
- Natural gas
- Oil gas
- Petroleum gases
- Butane
- Propane
- Ethane
- Methane
- Dimethyl ether
- Propene / propylene
- Ethylene

- Eg: Liquefied petroleum gas (LPG), liquefied natural gas (LNG), hydrogen, acetylene, propane, silane.

Class 2.1 - Flammable Gas

A gas which will readily ignite at a concentration of 13% or less in air and has a flammable range of at least 12% regardless of the lower flammability limit. They may be lighter or heavier than air. Heavier than air gases can collect in low lying areas such as pits, depressions, and drains causing a fire and explosion hazard.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14021-C	20 x 20	Adhesive	Roll of 1000
14021-B	50 x 50	Adhesive	Roll of 1000
14021-A	100 x 100	Adhesive	Roll of 500
14021	250 x 250	Adhesive	Single Unit
14021PP	250 x 250	PP	Single Unit
14021-M	270 x 270	Metal	Single Unit

- Eg: Nitrogen, Argon, Carbon Dioxide, Compressed Air, Helium.

Class 2.2 - Non-Flammable Non Toxic Gas

Gases which are asphyxiants (gases which dilute or replace the oxygen in the atmosphere); or are oxidizing (gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does). When asphyxiating gases are heavier than air they can collect in low lying areas and cause suffocation by the dilution or displacement of oxygen in air.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14022-C	20 x 20	Adhesive	Roll of 1000
14022-B	50 x 50	Adhesive	Roll of 1000
14022-A	100 x 100	Adhesive	Roll of 500
14022	250 x 250	Adhesive	Single Unit
14022PP	250 x 250	PP	Single Unit
14022-M	270 x 270	Metal	Single Unit

- Eg: Anhydrous Ammonia, Methyl Bromide, Sulphur Dioxide, Carbon Monoxide.

Class 2.3 Toxic Gas

Toxic gases may cause death or injury on inhalation. Many of these also have other properties (e.g. may be flammable, oxidizing or corrosive). Class 2.3 is never used as a subsidiary risk. If a material meets the criteria it will be classified as a toxic gas.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14023-C	20 x 20	Adhesive	Roll of 1000
14023-B	50 x 50	Adhesive	Roll of 1000
14023-A	100 x 100	Adhesive	Roll of 500
14023	250 x 250	Adhesive	Single Unit
14023PP	250 x 250	PP	Single Unit
14023-M	270 x 270	Metal	Single Unit

- Eg: Nitrous Oxide, Entonox.

Class 2.4 Oxidizing Gas

Although non-flammable, can accelerate combustion and increase the risk of fire in the presence of combustible or flammable materials.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14024-C	20 x 20	Adhesive	Roll of 1000
14024-B	50 x 50	Adhesive	Roll of 1000
14024-A	100 x 100	Adhesive	Roll of 500
14024	250 x 250	Adhesive	Single Unit
14024PP	250 x 250	PP	Single Unit
14024-M	270 x 270	Metal	Single Unit

A flammable liquid is a liquid with flash point of not more than 60.5°C, or any material in a liquid phase with a flash point at or above 37.8°C that is intentionally heated and offered for transportation or transported at or above its flash point in a bulk packaging.

Flammable liquids are capable of posing serious hazards due to their volatility, combustibility and potential in causing or propagating severe conflagrations.

Commonly Transported

- Acetone
- Paints, lacquers and varnishes
- Alcohols
- Perfumery products
- Petrol
- Diesel fuel
- Aviation fuel
- Liquid bio-fuels
- Coal tar
- Petroleum crude oil
- Adhesives
- Gas oil
- Shale oil
- Heating oil
- Kerosene
- Resins
- Tars
- Turpentine
- Carbamate insecticides
- Organochlorine pesticides
- Organophosphorus pesticides
- Copper based pesticides
- Esters
- Ethers
- Ethanol
- Benzene
- Methanol
- Octanes

- Eg: Petroleum.

Class 3 Flammable Liquid

Flammable liquids produce vapour that can be ignited in air on contact with a suitable ignition source. By definition these must have a flash point of less than or equal to 60.5°C. The flash point is the temperature at which a liquid can produce enough vapour to ignite.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14030-C	20 x 20	Adhesive	Roll of 1000
14030-B	50 x 50	Adhesive	Roll of 1000
14030-A	100 x 100	Adhesive	Roll of 500
14030	250 x 250	Adhesive	Single Unit
14030PP	250 x 250	PP	Single Unit
14030-M	270 x 270	Metal	Single Unit

Handling flammable liquids

Accidents involving flammables very often involve catastrophic explosions which cause horrendous injuries to workers. Always have a clear understanding of the flashpoint, plus the fire and explosion limits of the substance you are handling.

DO NOT use petrol to accelerate a fire

It is actually the vapours that ignite and burn rather than the flammable liquid itself. When you throw petrol, solvents or other accelerants onto a fire, the flames will follow the vapours back to the source. Even if the flammable liquid giving off the vapour is located a long distance from an ignition source (even 100 metres away), flashback and fire can still occur.

If you have areas at your worksite where staff are required to light furnaces or burn materials, ensure your staff have sufficient materials to ignite the fire safely and are trained not to use accelerants. Make sure that staff understand the chemical properties of the flammable liquids they are handling and the vapours they emit.

DO NOT bring an ignition source into an area containing flammable liquids

AS 1940:2017 - The storage and handling of flammable and combustible liquids requires that ignition sources must not be brought into areas where flammable liquids are stored, handled or dispensed these include bulk storage tanks, packaging areas, minor stores and fill points.

Correct decanting methods

Care should be taken when decanting or transferring flammable liquids and staff need thorough training. Using a flammable liquids dispensing station designed in accordance with AS1940 is an excellent way of reducing the risk of spills and dispersion of flammable vapours.

Bunding dispensing equipment

When transferring flammable liquids into another container or tank, all the dispensing equipment (piping, tanks, valves, containers etc) must be bunded continuously. Fuel passing through a hose and between containers creates static electricity and that electricity most commonly discharges as a nozzle is being removed from a tank that is being filled.

The process of bunding ensures that an electrically conductive pathway between a dispensing container, and a receiving container is always grounded.

Maintaining vapours within safe exposure levels

When working with flammable liquids and other chemicals it is essential to maintain exposure levels below the exposure standards published by Safe Work Australia. This includes the vapours released while fuel or solvents are being used or transferred.

If no mechanical ventilation system is in place they should increase the amount of fresh air supplied to their work areas by opening windows and doors. At the same time staff need to remove potential ignition sources in the area (in this case turning off the hot water system).

Flammable solids are materials which, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction, self-reactive substances which are liable to undergo a strongly exothermic reaction or solid desensitised explosives. Also included are substances which are liable to spontaneous heating under normal transport conditions, or to heating up in contact with air, and are consequently liable to catch fire and substances which emit flammable gases or become spontaneously flammable when in contact with water.

Flammable solids are capable of posing serious hazards due to their volatility, combustibility and potential in causing or propagating severe conflagrations.

Commonly Transported

- Alkali metals
- Metal powders
- Aluminium phosphide
- Sodium batteries
- Sodium cells
- Firelighters
- Matches
- Calcium carbide
- Camphor
- Carbon
- Activated carbon
- Celluloid
- Cerium
- Copra
- Seed cake
- Oily cotton waste
- Desensitised explosives
- Oily fabrics
- Oily fibres
- Ferrocerium
- Iron oxide (spent
- Iron sponge/direct-reduced iron (spent)
- Metaldehyde
- Naphthalene
- Nitrocellulose
- Phosphorus
- Sulphur

- Eg: Red Phosphorous, Hexamine, Naphthalene, Camphor.

Class 4.1 Flammable Solid

Flammable solids are materials which, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction, self-reactive substances which are liable to undergo a strongly exothermic reaction or solid desensitized explosives.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14041-C	20 x 20	Adhesive	Roll of 1000
14041-B	50 x 50	Adhesive	Roll of 1000
14041-A	100 x 100	Adhesive	Roll of 500
14041	250 x 250	Adhesive	Single Unit
14041PP	250 x 250	PP	Single Unit
14041-M	270 x 270	Metal	Single Unit

- Eg: White Phosphorous, Fish meal, Cotton Waste, Hay / Straw, Peat, Sugar, Metal powders, Celluloid, Soybean products.

Class 4.2 Spontaneously Combustible

Materials that will catch fire if exposed to air without any heat being applied (that is, the heat from the normal air is sufficient for them to catch fire - no other source of heat is required).

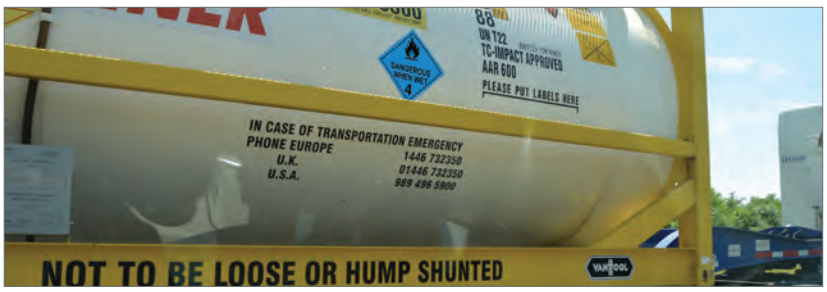
P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14042-C	20 x 20	Adhesive	Roll of 1000
14042-B	50 x 50	Adhesive	Roll of 1000
14042-A	100 x 100	Adhesive	Roll of 500
14042	250 x 250	Adhesive	Single Unit
14042PP	250 x 250	PP	Single Unit
14042-M	270 x 270	Metal	Single Unit

- Eg: Aluminium Phosphide (liberates phosphine gas), Calcium Carbide (liberates acetylene), Sodium.

Class 4.3 Dangerous When Wet

On contact with water, these materials can become spontaneously combustible or liberate flammable or toxic gases.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14043-C	20 x 20	Adhesive	Roll of 1000
14043-B	50 x 50	Adhesive	Roll of 1000
14043-A	100 x 100	Adhesive	Roll of 500
14043	250 x 250	Adhesive	Single Unit
14043PP	250 x 250	PP	Single Unit
14043-M	270 x 270	Metal	Single Unit



Oxidizers are defined by dangerous goods regulations as substances which may cause or contribute to combustion, generally by yielding oxygen as a result of a redox chemical reaction. Organic peroxides are substances which may be considered derivatives of hydrogen peroxide where one or both hydrogen atoms of the chemical structure have been replaced by organic radicals. Commonly transported class 5 dangerous goods include swimming pool chemicals and fertilizers.

Commonly Transported

- Chemical oxygen generators
- Ammonium nitrate fertilizers
- Chlorates
- Nitrates
- Nitrites
- Perchlorates
- Permanganates
- Persulphates
- Aluminium nitrate
- Ammonium dichromate
- Ammonium nitrate
- Ammonium persulphate
- Calcium hypochlorite
- Calcium nitrate
- Calcium peroxide
- Hydrogen peroxide
- Magnesium peroxide
- Lead nitrate
- Lithium hypochlorite
- Potassium chlorate
- Potassium nitrate
- Potassium chlorate
- Potassium perchlorate
- Potassium permanganate
- Sodium nitrate
- Sodium persulphate

- Eg: Ammonium Nitrate, Hydrogen Peroxide, Potassium Permanganate, Calcium Hypochlorite.

Class 5.1 Oxidizing Agent

Oxidizing substances are those which, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material. Because of their high oxygen content, these are often reactive materials. They may react with other flammable or combustible materials and generate heat, leading to fires, which the oxidizing agents will supply with oxygen which keeps them burning without any help from oxygen in the air (as is the case with normal combustion).

Such fires may, therefore, break out and continue in confined spaces, e.g. Inside cargo holds. And once started, they may be difficult to extinguish. Blanketing with powder or foam is useless, as the oxygen is already present in the agent underneath. The only method is to use a large amount of cold water, but if the fire is in an enclosed space, it may be difficult to reach, and the heat generated is such that a very large amount of water may be needed.

Some oxidizes can be explosive if heated, particularly in the presence of carbon. Ammonium nitrate (a readily available farm fertiliser) mixed with hydrocarbon oil, e.g. Diesel, becomes a powerful explosive, much used in the extractive industries.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14051-C	20 x 20	Adhesive	Roll of 1000
14051-B	50 x 50	Adhesive	Roll of 1000
14051-A	100 x 100	Adhesive	Roll of 500
14051	250 x 250	Adhesive	Single Unit
14051PP	250 x 250	PP	Single Unit
14051-M	270 x 270	Metal	Single Unit

- Eg: Hydrogen Peroxide, Benzol Peroxide, Methyl Ethyl Ketone Peroxide.

Class 5.2 Organic Peroxide

Organic peroxides substances contain carbon (organic) structures linked by a double oxygen bond (peroxide). Thus the fuel and the oxygen are together in the same molecule, making them even more liable to ignition than a separate combustible material.

They are designed to be reactive for a number of industrial purposes, and may consequently be unstable, and sometimes explosive. Because of their reactive nature, they can be very damaging to the human body, particularly the eyes and may have one or more of the following properties: be liable to explosive decomposition; burn rapidly; be sensitive to impact or friction; react dangerously with other substances; cause damage to the eyes.

Organic peroxides often have to be maintained under refrigeration to keep them inactive, and then the temperature must be carefully controlled. Otherwise, if they exceed a certain temperature specific to the material, they will start to decompose rapidly, resulting in uncontrollable progress towards fire or explosion.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14052-C	20 x 20	Adhesive	Roll of 1000
14052-B	50 x 50	Adhesive	Roll of 1000
14052-A	100 x 100	Adhesive	Roll of 500
14052	250 x 250	Adhesive	Single Unit
14052PP	250 x 250	PP	Single Unit
14052-M	270 x 270	Metal	Single Unit

Toxic substances are those which are liable either to cause death or serious injury or to harm human health if swallowed, inhaled or by skin contact. Infectious substances are those which are known or can be reasonably expected to contain pathogens. Dangerous goods regulations define pathogens as microorganisms, such as bacteria, viruses, rickettsiae, parasites and fungi, or other agents which can cause disease in humans or animals.

Toxic and infectious substances can pose significant risks to human and animal health upon contact.

Commonly Transported

- Medical/Biomedical waste
- Clinical waste
- Biological cultures / samples / specimens
- Medical cultures / samples / specimens
- Tear gas substances
- Motor fuel anti-knock mixture
- Dyes
- Carbamate pesticides
- Alkaloids
- Allyls
- Acids
- Arsenates
- Arsenites
- Cyanides
- Thiols/mercaptans
- Cresols
- Barium compounds
- Arsenics / arsenic compounds
- Beryllium/ beryllium compounds
- Lead compounds
- Mercury compounds
- Nicotine / nicotine compounds
- Selenium compounds
- Antimony
- Ammonium metavanadate
- Adiponitrile
- Chloroform
- Dichloromethane
- Hexachlorophene
- Phenol
- Resorcinol

- Eg: Arsenic Compounds, Cyanide, Acids, Lead Compounds, Pesticides.

Class 6.1 Toxic

Toxic substances are those which are liable either to cause death or serious injury or harm to human health if swallowed, inhaled or by skin contact.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14061-C	20 x 20	Adhesive	Roll of 1000
14061-B	50 x 50	Adhesive	Roll of 1000
14061-A	100 x 100	Adhesive	Roll of 500
14061	250 x 250	Adhesive	Single Unit
14061PP	250 x 250	PP	Single Unit
14061-M	270 x 270	Metal	Single Unit

- Eg: Biological products, Cultures, Patient Specimens, Medical or Clinical Wastes.

Class 6.2 Infectious Substances

These are substances known or reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14062-C	20 x 20	Adhesive	Roll of 1000
14062-B	50 x 50	Adhesive	Roll of 1000
14062-A	100 x 100	Adhesive	Roll of 500
14062	250 x 250	Adhesive	Single Unit
14062PP	250 x 250	PP	Single Unit
14062-M	270 x 270	Metal	Single Unit

Dangerous goods regulations define radioactive material as any material containing radionuclides where both the activity concentration and the total activity exceeds certain pre-defined values. A radionuclide is an atom with an unstable nucleus and which consequently is subject to radioactive decay.

Whilst undergoing radioactive decay radionuclides emit ionizing radiation, which presents potentially severe risks to human health.

There is no sub-division. However, there are different labels for radioactive materials which depend on the content and activity of such materials.

Commonly Transported

- Radioactive ores
- Medical isotopes
- Yellowcake
- Density gauges
- Mixed fission products
- Surface contaminated objects
- Caesium radionuclides / isotopes
- Iridium radionuclides / isotopes
- Americium radionuclides / isotopes
- Plutonium radionuclides / isotopes
- Radium radionuclides / isotopes
- Thorium radionuclides / isotopes
- Uranium radionuclides / isotopes
- Depleted uranium / depleted uranium products
- Uranium hexafluoride
- Enriched Uranium

What is the Transport Index?

The Transport Index (abbreviated TI) is just the radiation dose rate that you measure at a distance of 1 metre from your package, in mR/hr. So if you get a reading of, say, 1.3 mR/hr a metre away from the package then the TI is 1.3; if you put some additional shielding around the same source and reduce the dose rate to 0.5 then the TI (for the exact same source) is reduced to 0.5. So the TI has nothing to do with the amount of radioactivity in the package – it only reflects the radiation dose rate you measure a metre from the package surface.

Transporting Radioactive Materials

If you're shipping a radioactive package with a common carrier then the radiation dose rate has to be less than 200 mR/hr on contact with the exterior of the package and it has to have a TI of less than 10 (this means that the dose rate measured 1 meter from the package can't exceed 10 mR/hr).

If you're transporting the radioactive materials in your own vehicle or with a contract carrier then you have a little more latitude. Here, if the vehicle is closed, you can have surface radiation dose rates up to 1 R/hr (1000 mR/hr) and up to 200 mR/hr on contact with the vehicle's surface. For an open vehicle you're limited to 200 mR/hr on contact with the package surface as well as at the edge of the vehicle's bed. In both cases, you can't exceed a dose rate of 10 mR/hr two meters from the side of the vehicle and no more than 2 mR/hr in the cab.

Placarding

Any vehicle carrying a Yellow III package as well as trucks carrying a category of radioactive materials called "low specific activity" (or LSA) material – this primarily comes from remediation of contaminated sites.

Class 7D Radioactive Vehicle Placard

Radioactive material means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in Sections 2.7.2.2.1 to 2.7.2.2.6 of the ADG Code. The transportation of Class 7's are not subject to the ADG Code. Nationally, subject to state based legislation and regulation Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) controls the movement and use of radioactive material in Australia.

- Eg: Radioactive Ores, Medical Isotopes, Enriched Uranium.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14070-C	20 x 20	Adhesive	Roll of 1000
14070-B	50 x 50	Adhesive	Roll of 1000
14070-A	100 x 100	Adhesive	Roll of 500
14070	250 x 250	Adhesive	Single Unit
14070PP	250 x 250	PP	Single Unit
14070-M	270 x 270	Metal	Single Unit

Class 7E Fissile Material

In nuclear engineering, fissile material is a material capable of sustaining a nuclear fission chain reaction. By definition, fissile material can sustain a chain reaction with neutrons of thermal energy. The predominant neutron energy may be typified by either slow neutrons (i.e., a thermal system) or fast neutrons. Fissile material can be used to fuel thermal-neutron reactors, fast-neutron reactors and nuclear explosives.

- Eg: Fissile materials are composed of atoms that can be split by neutrons in a self-sustaining chain-reaction to release enormous amounts of energy.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14070FM-C	20 x 20	Adhesive	Roll of 1000
14070FM-B	50 x 50	Adhesive	Roll of 1000
14070FM-A	100 x 100	Adhesive	Roll of 500
14070FM	250 x 250	Adhesive	Single Unit
14070FMPP	250 x 250	PP	Single Unit
14070FM-M	270 x 270	Metal	Single Unit

Radioactive Packaging Labels

Class 7A CATEGORY I Radioactive Packaging Labels

The lowest level of label is a White I. If the radiation level at the surface of the package (what you would measure by putting your radiation detector on contact with the package surface) is less than 0.5 mR/hr then it can be labelled with the White I label. White I packages don't have a Transport Index – by the time you get to a distance of a metre there won't be anything that you can measure.

Class 7B CATEGORY II Radioactive Packaging Labels

You will use a Yellow II label for packages with surface radiation dose rates of up to 50 mR/hr and that are less than 1 mR/hr (TI < 1) at a distance of 1 metre.

Class 7C CATEGORY III Radioactive Packaging Labels

The highest level of label is the Yellow III. These are used to label any packages with surface radiation dose rates in excess of 50 mR/hr or for any packages with a TI greater than 1 (that is, where dose rate is higher than 1 mR/hr at a distance of 1 metre from the package). Also required for fissile class III or large-quantity shipments, regardless of radiation level.

Corrosive substances are substances that degrade certain materials such as metal and stone, through a complex chemical process.

According to the Australian Dangerous Goods Code, corrosive substances are also classified as; "Class 8 - Corrosive Substances" and they are defined as substances which, by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport.

As corrosive substances can degrade certain material such as metal and stone, it means that they have a very strong ability to break down and destroy human tissue. When corrosive materials touch your skin, they will immediately start to dissolve your flesh, leaving burns. If corrosive substances come in contact with your eyes, they can have very severe effects such as; damaging the cornea and even causing blindness.

Commonly Transported

- Acids/acid solutions
- Batteries
- Battery fluid
- Fuel cell cartridges
- Dyes
- Fire extinguisher charges
- Formaldehyde
- Flux
- Paints
- Alkylphenols
- Amines
- Polyamines
- Sulphides
- Polysulphides
- Chlorides
- Chlorosilanes
- Bromine
- Cyclohexylamine
- Phenol / carbolic acid
- Hydrofluoric acid
- Hydrochloric acid
- Sulfuric acid
- Nitric acid
- Sludge acid
- Hydrogen fluoride
- Iodine
- Morpholine

There are 2 main types of corrosive substances - Acids and Bases.

Acids

- Will neutralise alkalis
- Turn blue litmus paper red.
- Dissolve some metals
- Taste sour
- Have a pH level less than 7

Some examples of common acids include:

- Sulfuric Acid (H2SO4)
- Hydrochloric Acid (HCl)
- Nitric Acid (HNO3)
- Citric Acid (C6H8O7)

Bases

- Will neutralise Acids
- Turn red litmus paper blue.
- Taste bitter
- Are slippery to touch
- Have a pH level greater than 7

Some examples of common bases include:

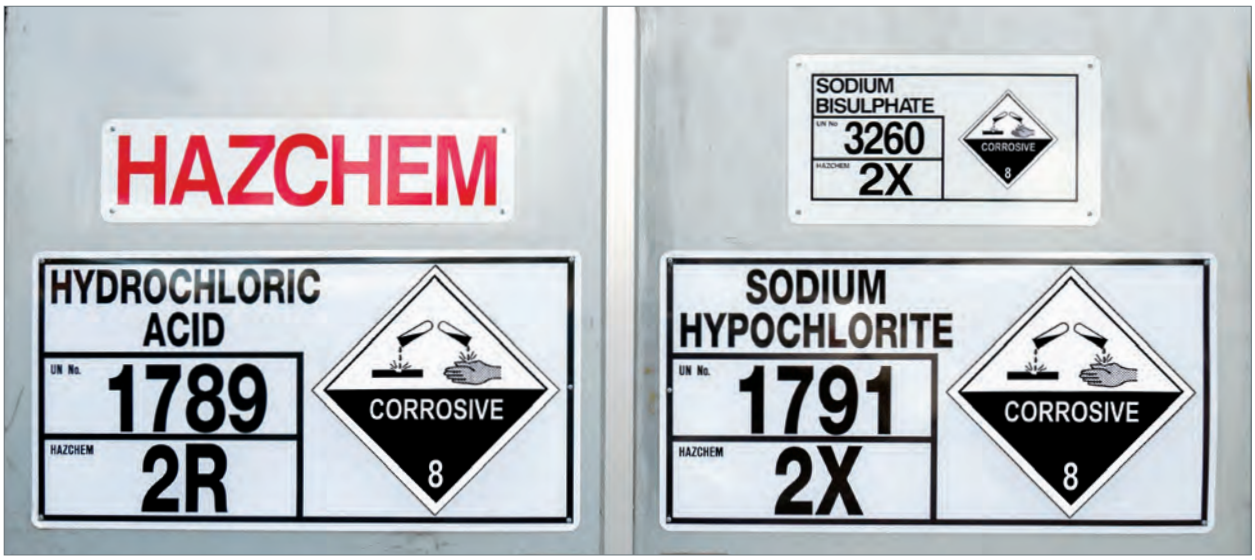
- Sodium Hydroxide (NaOH)
- Calcium Hydroxide (Ca(OH)2)
- Sodium Carbonate (Na2CO3)
- Aluminium Hydroxide (Al[OH]3)

- Eg: Hydrochloric Acid, Sulphuric Acid, Lead Acid Batteries, Sodium Hydroxide.

Class 8 Corrosive Substances

Substances which by chemical action degrade or disintegrate other materials upon contact. Corrosives cause severe damage when in contact with living tissue or, in the case of leakage, damage or destroy surrounding materials. Can be acids or alkalis.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14080-C	20 x 20	Adhesive	Roll of 1000
14080-B	50 x 50	Adhesive	Roll of 1000
14080-A	100 x 100	Adhesive	Roll of 500
14080	250 x 250	Adhesive	Single Unit
14080PP	250 x 250	PP	Single Unit
14080-M	270 x 270	Metal	Single Unit



When storing corrosive substances in the workplace, it is very important that you segregate acids and bases. If acids and bases mix, they will neutralise each other and produce dangerous by-products such as poisonous salts. In some neutralisation reactions between acids and bases, severe heat evolves which can have other dangerous implications.

When corrosive substances are present in the workplace it is also very important that you store and handle them in a way that minimises their risk to people, property and the environment. This can be done by:

- Ensuring that the corrosive substances are stored in compliant outdoor chemical storage containers or indoor chemical storage cabinets that meet the requirements of the Australian Standard - AS3780-2008.
- Having a copy of the Safety Data Sheets of the corrosive substances close at hand so they can be consulted when needed.
- Displaying relevant safety signage in the areas where the corrosive substances are stored to ensure that people in the surrounding areas are aware.
- Ensuring that correct PPE such as corrosive resistance gloves and eye protection are used when handling corrosive substance.
- Installing chemical spill kits in locations where corrosive substances are stored to ensure that spills can be cleaned up before they pose further risks to people, property and the environment.

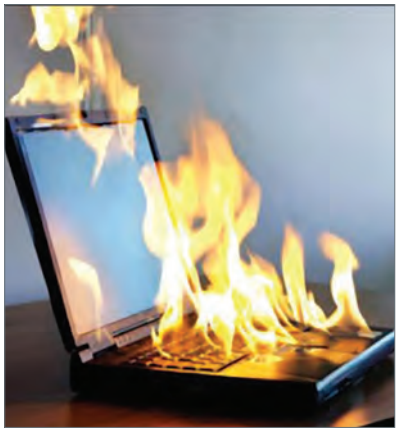
As corrosive substances have a strong ability to dissolve flesh and cause severe burns to your skin and eyes, it is very important that you are aware of the corrosive substances that are present in your workplace.

Miscellaneous dangerous goods are substances and articles which during transport present a danger or hazard not covered by other classes. This class encompasses, but is not limited to, environmentally hazardous materials, substances that are transported at elevated temperatures, miscellaneous articles and substances, genetically modified organisms and micro-organisms and (depending on the method of transport) magnetised materials and aviation regulated substances.

Miscellaneous dangerous goods present a wide array of potential hazards to human health and safety, infrastructure and/ or their means of transport.

Commonly Transported

- Dry ice / cardice / solid carbon dioxide
- Expandable polymeric beads / polystyrene beads
- Ammonium nitrate fertilizers
- Blue asbestos / crocidolite
- Lithium ion batteries
- Lithium metal batteries
- Battery powered equipment
- Battery powered vehicles
- Fuel cell engines
- Internal combustion engines
- Vehicles
- Magnetized material
- Dangerous goods in apparatus
- Dangerous goods in machinery
- Genetically modified organisms
- Genetically modified micro-organisms
- Chemical kits
- First aid kits
- Life saving appliances
- Air bag modules
- Seatbelt pretensioners
- Plastics moulding compound
- Castor bean plant products
- Polychlorinated biphenyls
- Polychlorinated terphenyls
- Dibromodifluoromethane
- Benzaldehyde



- Eg: Dry Ice, Vehicles, Chemical Kits.

Class 9 Miscellaneous Dangerous Goods

Environmentally hazardous substances and substances that are transported at elevated temperatures. These present a wide array of potential hazards to human health and safety, infrastructure and/or transportation.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14090-C	20 x 20	Adhesive	Roll of 1000
14090-B	50 x 50	Adhesive	Roll of 1000
14090-A	100 x 100	Adhesive	Roll of 500
14090	250 x 250	Adhesive	Single Unit
14090PP	250 x 250	PP	Single Unit
14090-M	270 x 270	Metal	Single Unit

- Eg: Rechargeable lithium ion batteries that power laptops, mobile phones, MP3 players, portable DVD players, GPS/navigation systems, cameras, camcorders, scuba-diving lamps and power tools. As well as non-rechargeable metal lithium batteries that power watches, thermometers, remote car locks, back-up batteries in computers and communication equipment, etc.

Class 9A Lithium Battery Miscellaneous Dangerous Goods

Lithium batteries are designed to keep devices running for hours or days at a time. To achieve this, they contain high levels of electric energy. If packed incorrectly or damaged in transit, lithium batteries can short-circuit, causing them to overheat and catch fire.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14090LB-C	20 x 20	Adhesive	Roll of 1000
14090LB-B	50 x 50	Adhesive	Roll of 1000
14090LB-A	100 x 100	Adhesive	Roll of 500
14090LB	250 x 250	Adhesive	Single Unit
14090LBPP	250 x 250	PP	Single Unit
14090LB-M	270 x 270	Metal	Single Unit

The 'Mixed Class Label' is used as a placard on cargo transport units transporting more than one class or division of dangerous goods, excluding LQ (Limited Quantities) loads.

- It is not a package label.
- It is not part of the UN labelling system.

It is used as a transport placard for road or rail transport within Australia.

As per the Australian Dangerous Goods Code, vehicle placards must correspond to the primary risk of the goods contained in the cargo transport unit or placard-able unit. Except when there are dangerous goods of more than one class or division in a cargo transport unit, in which a placard in the form of a mixed class label may be used in lieu of multiple placards where permitted.

Placards must also be displayed for those subsidiary risks for which a subsidiary risk label is required. However, cargo transport units containing goods of more than one class or division need not bear a subsidiary risk placard if the hazard represented by that placard is already indicated by a primary risk placard or where a mixed class placard is displayed where permitted.

All road vehicles transporting a placard load of dangerous goods must be placarded on the front and rear of the vehicle with placards indicating what dangerous goods are being carried.

Where all of the dangerous goods are of a single class or division, the placards required are:

- The class or division label; and
- Any subsidiary risk labels applicable to the goods.

Where there is more than one class of dangerous goods on the vehicle during the journey, the placards required are either or both of the following:

- Mixed class labels;
- All class and division labels for each primary and subsidiary risk of the dangerous goods on the vehicle.

Mixed Class Dangerous Goods

Principally used as a placard on transport units transporting more than one class or division of dangerous goods.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14100-C	20 x 20	Adhesive	Roll of 1000
14100-B	50 x 50	Adhesive	Roll of 1000
14100-A	100 x 100	Adhesive	Roll of 500
14100	250 x 250	Adhesive	Single Unit
14100PP	250 x 250	PP	Single Unit
14100-M	270 x 270	Metal	Single Unit

Marine pollutants or environmentally hazardous substances are materials that can pose a risk to aquatic ecosystems. Marine pollutant is a term used by (IMDG) the International Maritime Dangerous Goods code.

A shipper who offers a hazardous material for transport must determine the hazard class of the material including "environmentally hazardous substances (aquatic environment)" applicability, assign a proper shipping name that best describe it and mark the material according to dangerous goods regulations.

Marking and labelling

Every package containing marine pollutant shall be marked with correct technical name and marine pollutant symbol.

- Symbol (fish and tree): black on white or suitable contrasting background
- Dimensions at least 100mm × 100mm
- Exception: for packages, single packaging and inner packaging of combination packaging containing – a net quantity of 5 litres or less for liquids; or a net mass of 5kg or less for solids.

Documentation

If the cargo is a marine pollutant the Dangerous Goods Declaration must indicate this with words "MARINE POLLUTANT". Also if the cargo is under a generic or N.O.S. entry then proper shipping name shall be supplemented with technical name.

Examples for the technical name supplementing the proper shipping name for N.O.S. and generic entries:

- "UN 1993, FLAMMABLE LIQUID, N.O.S. (propyl acetate, di-n-butyltin-di-2-ethylhexanoate), class 3 PG III (50 °C c.c.) MARINE POLLUTANT"
- "UN 1263, PAINT (triethylbenzene), class 3 PG III (27 °C c.c.) MARINE POLLUTANT"

Marine Pollutant

This is a sub-risk label only and is used with the other primary classes of labels.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14110-C	20 x 20	Adhesive	Roll of 1000
14110-B	50 x 50	Adhesive	Roll of 1000
14110-A	100 x 100	Adhesive	Roll of 500
14110	250 x 250	Adhesive	Single Unit
14110PP	250 x 250	PP	Single Unit
14110-M	270 x 270	Metal	Single Unit

Certain materials are transported as molten liquids to make it easier to handle, load and unload them. It also eliminates the need to install expensive, energy hungry facilities at the customer end to re-melt the material.

Many solids and viscous liquids are also heated for the same reason and are shipped at elevated temperatures.

Such materials can include molten aluminium, molten sulpur, molten glass, asphalt and tar and are capable of causing massive amounts of harm and damage in cases of accidents and emergencies.

An elevated temperature is defined as at least 100°C for liquids or 240°C for solids.

The cargo transport units used to contain the elevated temperature substances must be marked exactly as the relevant dangerous goods regulations stipulate. The shipper must properly mark the transport unit with an elevated temperature label/mark before offering it to the carrier.

For tank-containers or portable tanks with a capacity of not more than 3,000 litres and with an available surface area insufficient to affix the prescribed marks, the minimum dimensions of the sides of the triangle may be reduced to 100mm.

Under the IMDG regulations, in addition to the elevated temperature mark/label the shipper must mark the cargo transport unit with the maximum temperature that the substance is expected to reach during transport. This must be durably marked on both sides of the portable tank or insulation jacket, immediately adjacent to the elevated temperature mark, in characters at least 100mm high.

Elevated Temperature

Used in conjunction with other Dangerous Goods Class Labels for substances requiring storage or transport at elevated temperatures.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14111-C	20 x 20	Adhesive	Roll of 1000
14111-B	50 x 50	Adhesive	Roll of 1000
14111-A	100 x 100	Adhesive	Roll of 500
14111	250 x 250	Adhesive	Single Unit
14111PP	250 x 250	PP	Single Unit
14111-M	270 x 270	Metal	Single Unit

The Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) offers reduced regulatory requirements for transporting dangerous goods in limited quantity packaging. Which are relatively small packages containing selected low hazard dangerous goods.

Even for dangerous goods transported in limited quantities, there are some packaging and labelling requirements you need to follow:

- Goods must be carried in small containers (e.g., bottles), which are then packed in boxes or on shrink-wrapped trays;
- Packages must pass certain performance tests requirements;
- The maximum gross weight is 30kg for boxes or 20kg for shrink-wrapped trays;
- Outer packages must bear limited quantities mark and hazard symbols;
- Dangerous goods transported in limited quantities must be communicated in a shipping document.

Limited quantity placards applied to cargo transport units are required to be a minimum of 250mm x 250mm in size.

The limited quantity mark applied to packages is required to be a minimum of 100mm x 100mm. If the size of the package requires, the dimensions may be reduced to not less than 50 mm x 50 mm.

Limited Quantity - Transportation by ROAD, RAIL & SEA

Limited Quantity labels are used for the transport of dangerous goods packaged in limited quantities. Labels WITHOUT the 'Y' are used for transportation by road, rail and sea.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14113B-C	20 x 20	Adhesive	Roll of 1000
14113B-B	50 x 50	Adhesive	Roll of 1000
14113B-A	100 x 100	Adhesive	Roll of 500
14113B	250 x 250	Adhesive	Single Unit
14113B-SPLT	250 x 250	Adhesive	Two Units Vertical Centre Split
14113BPP	250 x 250	PP	Single Unit
14113B-M	270 x 270	Metal	Single Unit

Limited Quantity - Transportation by AIR

Limited Quantity labels are used for the transport of dangerous goods packaged in limited quantities. Labels with the 'Y' are used for transportation by AIR.

P/N:	SIZE (mm)	MATERIAL	SALE UNIT (qty)
14113-C	20 x 20	Adhesive	Roll of 1000
14113-B	50 x 50	Adhesive	Roll of 1000
14113-A	100 x 100	Adhesive	Roll of 500
14113	250 x 250	Adhesive	Single Unit
14113PP	250 x 250	PP	Single Unit
14113-M	270 x 270	Metal	Single Unit

Multi-Flip Over Dangerous Goods Placards

All in one multi-flip holder contains 15 metal pre-printed hazchem placards. Designed for years of use in any type of weather, each placard is coated with a weather resistant enamel and then screened with a long lasting, weather resistant ink. Placards won't get lost, shipment pick-up won't be delayed.

P/N:	INNER SIZE (mm)	OUTER SIZE (mm)
14174	270 x 270	350 x 350

- Aluminium rust proof holder with stainless steel clips.
- Long lasting and weather resistant.
- 4 screw holes for securing to the vehicle.

Includes:

- Class 1 - Explosive.
- Class 2.1 - Flammable Gas.
- Class 2.2 - Non Flammable Non Toxic Gas.
- Class 2.3 - Toxic Gas.
- Class 3 - Flammable Liquid.
- Class 4.1 - Flammable Solid.
- Class 4.2 - Spontaneously Combustible.
- Class 4.3 - Dangerous When Wet.
- Class 5.1 - Oxidizing Agent.
- Class 5.2 - Organic Peroxide.
- Class 6.1 - Toxic.
- Class 8 - Corrosive.
- Class 9 - Miscellaneous Dangerous Goods.
- Mixed Class - Dangerous Goods *(Bumble Bee)*.
- Limited Quantity - Road, Rail & Sea
- Generic message - When not transporting Dangerous Goods.

CUSTOM FLIP OVER DANGEROUS GOODS PLACARDS

Instead of displaying the generic message when not in use, why not add your brand to the placard holder. Silverback supply custom branded flip over dangerous goods placards to many transport companies Australia wide. Minimum quantities apply.

Ask in-store for more details.

15 Dangerous Goods Diamonds Pack

Choose metal or plastic dangerous goods diamonds plus your choice of a galvanised metal or stainless steel holder. All packed in a convenient storage carry bag.

Custom Options Available.

P/N:	DESCRIPTION
14176MM15	Metal Diamond Holder & Metal Dangerous Goods Panels
14176MP15	Metal Diamond Holder & Poly Dangerous Goods Panels
14176SM15	Stainless Steel Diamond Holder & Metal Dangerous Goods Panels
14176SP15	Stainless Steel Diamond Holder & Poly Dangerous Goods Panels

Panel Insert Blank

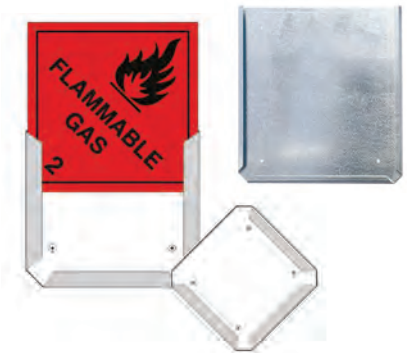
Suitable for dangerous goods adhesive labels adhered to it to make a plastic or metal dangerous goods diamond.

P/N:	SIZE (mm)	MATERIAL
14002	270 x 270	Metal
14003	270 x 270	Polycarbonate

Metal
- Grey back and white front diamond
- Galvanised metal blank diamond

Polycarbonate
- Polycarbonate plastic diamond
- 2mm thickness

All Dangerous Goods Class labels are available on metal or poly inserts, refer pages 12 – 33.



Dangerous Goods Metal Diamond Holders

Galvanised Metal holders to suit Dangerous Goods Class diamonds. Pre-punched holes for fixing to vehicles or buildings. Usually fitted to front and rear of vehicle carrying or storing dangerous goods.

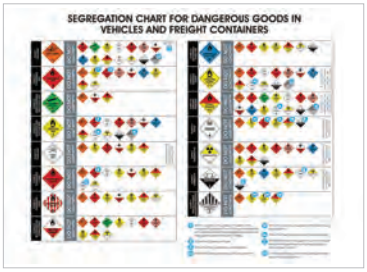
P/N:	INNER SIZE (mm)	OUTER SIZE (mm)	MATERIAL	SUITABLE FOR
14176	273 x 273	280 x 290	Galvanised Metal	Metal Dangerous Goods Labels
14176-SS	273 x 273	280 x 290	Stainless Steel	Metal Dangerous Goods Labels

Blank UN Placard/ Container Label

Compliant with international labelling regulations.

- Single sheet on peel off backing.
- Sold as each .

P/N:	SIZE (mm)	MATERIAL
14114PL	310 x 125	Vinyl/Polyethylene



Segregation Charts

Laminated segregation charts for dangerous goods in vehicles and freight containers.

P/N:	SIZE (mm)
14112-A4	297 x 210 (A4)
14112-A3	594 x 420 (A3)

DG Information Folders

Mandatory for vehicles carrying 'Dangerous Goods'.

- White vinyl cover document holder.
- Clear pouch and clearly labelled.
- Adequately holds important Dangerous Goods A4 size documents.

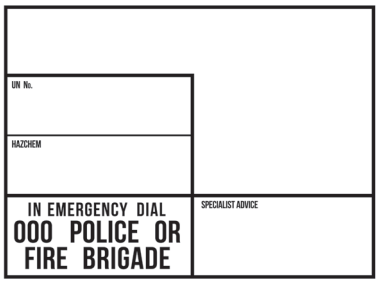
P/N:	SIZE (mm)	MATERIAL
14905H	320 x 230	Hard Backed
14905S	320 x 230	Soft backed

Label Removing Scraper

The label removing scraper is perfect for stripping adhesive labels off backing plates. It will also scrape and remove paint and residue from tough surfaces.

P/N:	ITEM (mm)
90013	Handle with blade
90013RB	Replacement blades

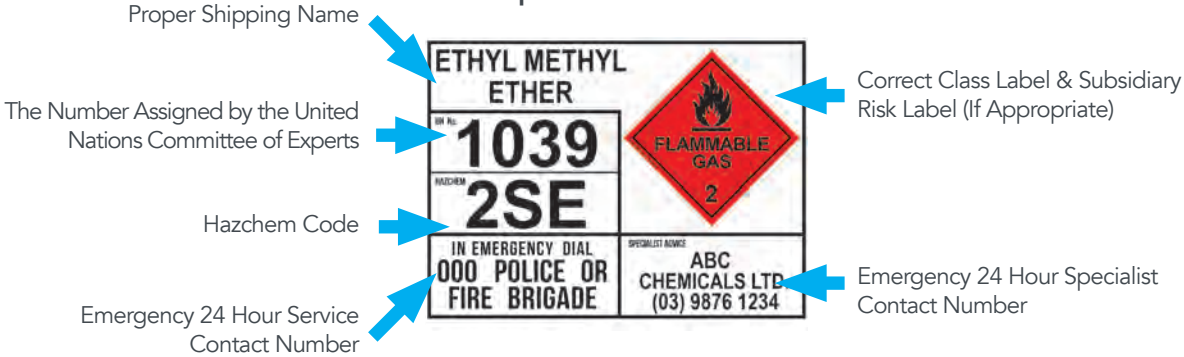
- Aluminium lightweight alloy body
- 100mm carbon steel blades are strong, shock resistant, long lasting and not prone to corrosion.

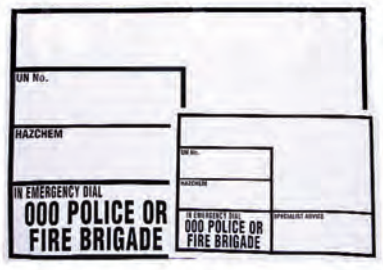


An emergency information panel (EIP) is a placard that includes warning and emergency information on dangerous goods. (see ADG7, Vol 2 Part 5.3.2 p 431) Placarding is required when a load of dangerous goods is designated a "placard load". Eg dangerous goods in a receptacle with a capacity of more than 500L or 500kg of dangerous goods in a receptacle. The load comprises an aggregate quantity of dangerous goods of 250kg and/or litres or more and those goods include any dangerous goods of Class 2.1 that are not aerosols, dangerous goods of Class 2.3. Where the load comprises an aggregate quantity of Class 1.0 dangerous goods of 1000kg and/or litres or more. Placards must be affixed to the exterior of transport units that contain a placard load and to placard units to provide a warning of the contents.

Principally used as a placard on transport units transporting more than one class or division of dangerous goods. It may also be used as a label in a retail distribution load in accordance with Chapter 7.3. of the Australian Dangerous Goods code.

Example: Petroleum Fuel



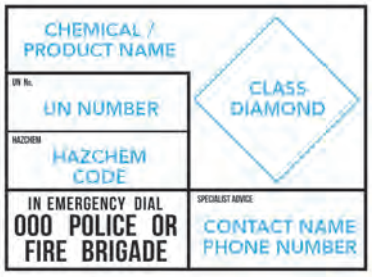


Blank EIP label

Self adhesive vinyl labels that can be adhered to clean and dry surfaces.

- Made from UV resistant plastic.
- 300 x 400 size to suit IBC's.

P/N:	SIZE (mm)	MATERIAL
14130A	300 x 400	Adhesive Vinyl
14130	600 x 800	Adhesive Vinyl



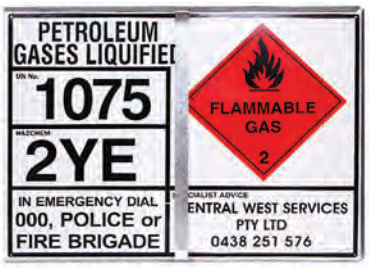
Custom EIP label*

Customise with your required details. Self adhesive vinyl labels that can be adhered to clean and dry surfaces.

- Made from UV resistant plastic.
- 300 x 400 size to suit IBC's.

P/N:	SIZE (mm)	MATERIAL
14131	300 x 400	Adhesive Vinyl
14132	600 x 800	Adhesive Vinyl

Terms & conditions apply.



Custom Metal EIP Sign

Customise with your required details.

- Made from galvanised metal.
- Ideal for dedicated vehicles or permanent applications.

P/N:	SIZE (mm)	MATERIAL
14136	600 x 800	Galvanised Metal

14133VL

14133VR

EIP PVC Banners

This is an EIP banner made with UV resistant PVC. Can be folded up or hung using rope that is secured through the eyelets on the EIP. Company information and a specific 250mm x 250mm dangerous goods label can be inserted and secured into the EIP after undoing the velcro pocket.

- Option of left or right facing pockets.
- 4 corner eyelets for permanent fixing.
- Supplied with 4 x corner 2m long ropes for temporary fixing.

P/N:	SIZE (mm)	MATERIAL	TYPE
14133VL	600 x 800	PVC	Velcro to the Left (Vehicle Right Side)
14133VR	600 x 800	PVC	Velcro to the Right (Vehicle Left Side)

14133VT

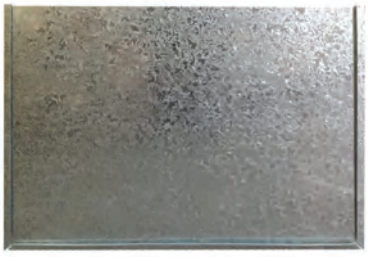
14133VS

PVC Pockets for EIP Labels

Designed for use with 600mm x 800mm EIP labels.

- Option of left or right facing pockets.
- 4 corner eyelets for permanent fixing.
- Supplied with 4 x corner 2m long ropes for temporary fixing.

P/N:	SIZE (mm)	MATERIAL	TYPE
14135VT	720 x 915	PVC	Velcro to the top with press studs & rope
14135VS	720 x 915	PVC	Velcro to the side with press studs & rope

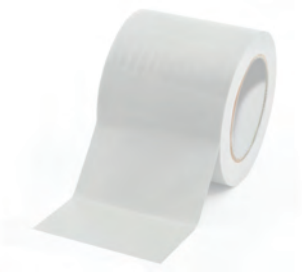


EIP Metal Holder

Pre-punched holes for fixing to vehicles or buildings. Metal EIP panel slides in from the top.

- Made from galvanised metal.
- Ideal for dedicated vehicles or permanent applications.
- Suits P/N: 14136 metal EIP sign.

P/N:	SIZE (mm)	MATERIAL
14137	600 x 808	Galvanised Metal



White Cloth Tape

Quick and convenient way to cover EIP label lettering and manually writing over the tape when conducting multiple jobs.

P/N:	L (m)	W (mm)	COLOUR
22103	25	100	White

Dräger™ Oxy 3000 MKII Escape Hood

Ideal for escape from both fire and toxic industrial gases, vapours and particulates.

Breathing air for 30 minutes

The Dräger Oxy devices supply employees with oxygen during an incident. In the case of oxygen deficiency, smoke or dangerous gases, these devices provide the user with more time to reach the next safe area or complete a successful escape.

The metal/plastic exterior shell with an interior integrated shock absorber protects the KO2 cartridge against damage in harsh environments such as mining, sewage work and within the petrochemical industry.

The exterior shell will be left behind when the device is activated.

- Compact, ergonomic shape.
- Worn with a hip belt, shoulder strap or hand belt.
- Opening mechanism with one-handed operation for right-handed or left-handed wearers.
- Optional rubber abrasion protection to protect against wear and tear.
- Immediate activation of starter when donning the device.
- Light, compact functional unit with anti-static breathing bag.
- ADG 12:2 compliant.
- 10 year shelf life.
- Good/Expired indicator included.

P/N:	TYPE	BREATHABLE AIR (mins)
30159	Escape Hood	30

Driver Emergency Response Kit

The Driver Emergency Response Kit (ERK) is a must have for drivers that are constantly on the road. The ERK gear complies with dangerous goods and O.H & S guidelines and will cover you for most of the requirements you are likely to encounter in your daily activities. Be safe and be prepared. Provides basic protective equipment in easy to carry bag.

P/N:	SIZE (mm)	WEIGHT (kg)
25600	460 x 300 x 320	7

Refer to our **EMERGENCY RESPONSE CATALOGUE**, to view the full range of Emergency Response Kits and Safety Equipment.

Dry Powder Fire Extinguishers

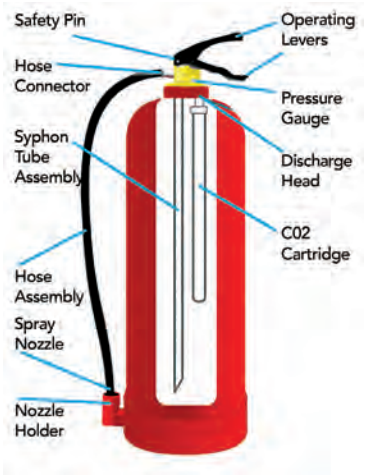
Effective for use on Class A and B fires. Also being an electrically non-conductive agent, dry powder fire extinguishers are also safe to use on (Class E fires) involving equipment carrying live electrical current.

Fire Classifications:

- Class A - Carbonaceous Materials (Paper, Timber, Cardboard),
- Class B - Flammable and combustible Liquids,
- Class E - Electrically Energised Risks. Fire Rating - 1A10B:E.

Inspection and maintenance of all Fire Extinguishers should be performed at regular six monthly intervals as required by Australian Standard AS1851 by an authorised or Licenced Contractor. Fire Extinguishers need to be pressure tested or replaced every 5 years.

Classified as a Class 2.2 Dangerous Goods for Transportation Purposes.



P/N:	SIZE (kg)	ATTACHMENTS
31120	1	Mounting bracket
31120H	1	Mounting bracket & hose
31124	1.5	Mounting bracket & hose
31125	2	Mounting bracket & hose
31121	2.5	Mounting bracket & hose
31122	4.5	Wall bracket & hose
31123	9	Wall bracket & hose

- Stored pressure Dry Powder portable Fire Extinguishers are suitable for nearly all applications. They come in many sizes and meet ISO9001 Quality Management approval as well as Australian Standard AS1841.6.
- The epoxy powder coated steel cylinders stand up to our harsh elements and they contain silicon powder, which allows them to operate after vigorous vibration, such as in a semi-trailer or boat.
- The hot forged brass operating valve is fitted with a pressure indicator and incorporates facility to enable 'in service' testing as required by Australian Standard AS1851.1.
- These fire extinguishers also feature an in-built pressure gauge, so your Fire Extinguisher can be serviced on site.

Refer to our **EMERGENCY RESPONSE CATALOGUE**, to view the full range of Fire Extinguishers.

DANGEROUS GOODS LABELS, SIGNS & BANNERS

Melbourne
86 Strzelecki Avenue,
Sunshine West VIC 3020 Australia
T: 1300 858 858
E: melbourne@silverback.com.au

Sydney
26 Sleigh Place,
Wetherill Park NSW 2164 Australia
T: 1300 858 858
E: sydney@silverback.com.au

Brisbane
Unit 1, 12 Boolarra Street
Hemmant QLD 4174 Australia
T: 1300 858 858
E: brisbane@silverback.com.au

Adelaide
27 Pambula Street,
Regency Park SA 5942 Australia
T: 1300 858 858
E: adelaide@silverback.com.au

Auckland
300 Richmond Road,
Grey Lynn 1147 P.O.Box 46018
Auckland, New Zealand
T: +64 9 360 3236
E: auckland@silverback.co.nz

Head Office Administration
147 Railway Place,
Williamstown VIC 3016 Australia
T: +61 3 9312 0388

LOAD RESTRAINT

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