

Guidance Sheet 2: Dangerous Goods Classification System

Dangerous Goods are substances that are corrosive, flammable, explosive, spontaneously combustible, toxic, and oxidising or water reactive. These goods can be deadly and can seriously damage property and the environment. Therefore, it's important that they are stored and handled safely.

Petrol, LPG, paints, pesticides and acids are examples of commonly used dangerous goods.

They are defined in the *Dangerous Goods Act 1985* and are classified in the Australian Code for the Transport of Dangerous Goods by Road and Rail (Dangerous Goods Code) according to their common hazardous properties.

Classes of Dangerous Goods

Each substance or article of Dangerous Goods named in the Code is assigned to a particular Class relating to its primary hazardous property. The Classes are as follows:

Class 1: Explosives



Explosives range from those which are extremely hazardous with a mass explosion hazard such as TNT, Gunpowder and Gelnite etc.

Class 2 Gases: Compressed, Liquefied or Dissolved Under Pressure



Class 2 is subdivided into the following three Divisions:

- 2.1 Flammable gases i.e. acetylene and most Aerosols.
- 2.2 Non-flammable, non-toxic gases i.e. helium and oxygen.
- 2.3 Poisonous gases i.e. chlorine.

Class 3: Flammable Liquids



Liquids which can burn and have a Flash Point (not boiling point) below 60.5°C i.e. acetone and kerosene.

Class 4: Flammable Solids etc.



Class 4 is sub-divided into the following three Divisions:

- 4.1 Flammable solids i.e. phosphorous (red).
- 4.2 Substances liable to (white) spontaneous combustion i.e. phosphorus.
- 4.3 Substances which, when they come in contact, emit flammable gases i.e. sodium with water.

Class 5: Oxidising Agents and Organic Peroxides



Class 5 is sub-divided into the following two Divisions:

- 5.1 Oxidizing agents i.e. ammonium dichromate.
- 5.2 Organic peroxides i.e. ethyl methyl ketone peroxide.

Class 6: Toxic and Infectious Substances



Class 6 is sub-divided into the following two Divisions:

- 6.1 Toxic substances i.e. cyanides, arsenic compounds and lead acetate.
- 6.2 Infectious substances i.e. vaccines and pathology specimens.

Class 7: Radioactive Materials



Substances and articles which spontaneously emit radiation greater than 70 kilobecquerels per kilogram i.e. uranium oxide.

Class 8: Corrosive Substances and Articles



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This class is not further sub-divided but it includes both acids and bases/alkalis which can react dangerously

i.e. hydrochloric acid, sodium hydroxide and batteries containing acid.

Class 9: Miscellaneous Dangerous Goods



Dangerous substances and articles that do not fit into the above categories

i.e. dry ice, asbestos and environmentally hazardous substances.

Subsidiary Risk

Many dangerous goods present the hazards of more than one Class or Division. Such goods are assigned to a Class according to their primary hazard. The other hazard or hazards are referred to as Subsidiary Risks.

Examples:

Methanol is a highly flammable liquid that is also toxic. It meets the classification criteria for both Class 3 and Division 6.1. As its flammability is its primary hazard, Methanol is assigned to Class 3. It is also shown in the Australian Dangerous Goods Code as having a Subsidiary Risk of 6.1 to cover its toxicity hazard.



Nitric Acid, Red, Fuming is corrosive, a strong oxidising agent and toxic. It meets the classification criteria for Classes 8, 5.1 and 6.1. As its corrosivity, is its primary hazard, Nitric Acid, Red, Fuming is assigned to Class 8. However, it is also allocated Subsidiary Risks of 5.1 and 6.1 to cover the other hazards.



United Nations (UN) Number

Each Dangerous Goods item listed in the Australian Dangerous Goods Code is assigned a unique number, known as the UN Number (United Nations Number or UN No.). For example:

- UN No. 1090 Acetone
- UN No. 1789 Hydrochloric Acid

Some UN numbers apply to groups of substances having similar hazardous properties that are not covered by specific chemical entity entries. For example:

- UN No. 1263 Paint
- UN No. 1993 Flammable Liquid
- N.O.S. (Not Otherwise Specified)

Packing Group

Dangerous Goods of some Classes are further divided into Packing

Groups according to the degree of danger they present, as follows:

- Packing Group I Great Danger
- Packing Group II Medium Danger
- Packing Group III Minor Danger
- 'Packing Group' (referred to as 'Packaging Group' in earlier versions of the Regulations and Code) does not apply to those Classes/Divisions of Dangerous Good against which 'Not applicable' appears in the table below.

The greater the degree of danger, the more stringent the packaging requirement for the substance.

The following Class/Packing Groups may be encountered:

Class/Division	Packing Group/s
1	Not applicable
2	Not applicable
3	I, II or III
4	I, II or III
5.1	I, II or III
5.2	II only
6.1	I, II or III
6.2	Not applicable
7	Not applicable
8	I, II or III
9	II or III

Further information and advice can be obtained by contacting DET's **OHS Advisory Service on 1300 074 715**