



# Dangerous Goods

## Definition

Dangerous goods are substances or articles that pose a risk to people, property or the environment, due to their **chemical or physical properties**. They are usually classified with reference to their **immediate risk**.

This is different from the definition of a hazardous substance which is defined in terms of the chronic or acute **harm caused to the health of people** exposed to the substance. Hazardous substances are classified according to the [Approved Criteria for Classifying Hazardous Substances \[NOHSC:1008 \(2004\) 3rd edition\]](#) by the manufacturer and are listed in the [Hazardous Substances Information System](#)

## Classification of Dangerous Goods

Class	Description	Example
1	Explosives	Fireworks, Ammunition, Gelignite
2.1	Flammable Gases	Acetylene, Hydrogen LPG
2.2	Non-flammable, Non toxic gases	Nitrogen, Carbon dioxide, refrigerant gases
2.3	Toxic Gases	Chlorine (gas), Ammonia
3	Flammable Liquids	Ethanol, Methanol, Hexane
4.1	Flammable Solids	Sulphur
4.2	Spontaneously Combustible	White phosphorous, Activated carbon
4.3	Dangerous when wet	Sodium metal, Calcium carbide
5.1	Oxidizing Substances	Sodium peroxide, Calcium hypochlorite (pool chlorine)
5.2	Organise Peroxides	Methyl Ethyl Ketone peroxide
6.1	Toxic substances	Sodium cyanide
6.2	Infectious Substances	Clinical or medical waste
7	Radioactive substances	Tritium
8	Corrosives	Hydrochloric Acid, Sodium Hydroxide
9	Miscellaneous dangerous goods	Asbestos, dry ice



## Class Diamonds



## UN Numbers and Shipping Names

In Australia, dangerous goods are defined by the Australian Dangerous Goods Code (ADG). These are closely aligned with international standards in the United Nations 'Recommendations on the Transport of Dangerous Goods - Model Regulations'. Proper shipping names and UN numbers are assigned and used internationally for the quick identification of dangerous goods. The University is required to use this standard terminology, for example when labelling hazardous waste for transport, submitting information to WorkCover NSW or communicating with emergency services.

A UN number is a four digit number representing a particular chemical or group of chemicals (eg. UN1170 represents Ethanol, and UN1263 represents Paint and Related Products). The proper shipping name for a particular substance is the name used to describe that substance during transport. The proper shipping name for ethanol is "Ethanol", but the proper shipping name for a less common substance will be a generic description, eg. "Flammable Liquid n.o.s." (not otherwise specified). In this case, the chemical name of the substance would be included in brackets following the generic description.

## Packing Groups

Packing groups are used to indicate the degree of danger associated with dangerous goods within a given class.

Packing Group I	Great Danger
Packing Group II	Medium Danger
Packing Group III	Minor Danger



## Legislation

On 1 September 2005 the Dangerous Goods Act 1975 was repealed and the following legislation commenced:

- *Explosives Act 2003* and the supporting *Explosives Regulation 2005*
- *OHS Amendment (Dangerous Goods) Act 2003* and the supporting *OHS Amendment (Dangerous Goods) Regulation 2005*

The changes mean that dangerous goods are now regulated under the *Occupational Health and Safety Act 2000* and the *Occupational Health and Safety Regulation 2001*, while explosives and security sensitive dangerous substances are regulated by the *Explosives Act 2003* and the *Explosives Regulation 2005*. These two new regulatory frameworks require stricter security for explosives and concentrated ammonium nitrate and new safe handling and storage requirements for other classes of dangerous goods. The storage and handling of combustible liquids (as defined by Australian Standard 1940: 2004) are also regulated under this legislation.

## Use of Dangerous Goods

The recent changes to the dangerous goods legislation require anyone using or storing dangerous goods to adopt a risk management approach which is similar to the requirements for the use of hazardous substances at work. For example:

- a register of dangerous goods with MSDS, must be maintained for material used;
- all dangerous goods must be labelled in accordance with set criteria;
- risk assessments must be carried out for each task involving the use of dangerous goods; and
- people working with dangerous goods must be provided with adequate training and supervision to ensure their safety.

### Class 1 – Explosives

It is illegal to be in possession of explosives without a licence. The new legislation also allows for the regulation of explosive precursors and other substances thought to be a security risk. These have been called Security Sensitive Dangerous Substances (SSDS). Ammonium Nitrate is the first substance to be controlled as a SSDS. It is illegal to possess Security Sensitive Ammonium Nitrate (any emulsion, gel, suspension or mixture with greater than 45% ammonium nitrate) without a licence. There is a 3 kg exemption limit for research activities.

### Class 7 - Radioactive Substances

The storage and handling of radioactive substances is regulated separately under the [Radiation Control Act 1990](#) and the supporting [Radiation Control Regulation 2003](#). The general principles relating to keeping accurate records of the isotopes stored and used (manifest), obtaining MSDSs, labelling containers and processes, and completing risk assessments still apply. However, the specific requirements may vary slightly. In addition to these requirements, staff and students working with radiation must undertake training in Radiation Safety and obtain a licence from the Department of Environment and Conservation (DEC). Sealed radioactive sources (equipment) and facilities where radiation is used or stored must also be registered with DEC.

In addition to the requirements for the use of dangerous goods, specific requirements for placarding, risk assessments, notification, manifests, and emergency planning are required when volumes stored exceed thresholds listed in the legislation. Further information can be found on the [University Dangerous Goods and Handling Guidelines](#).