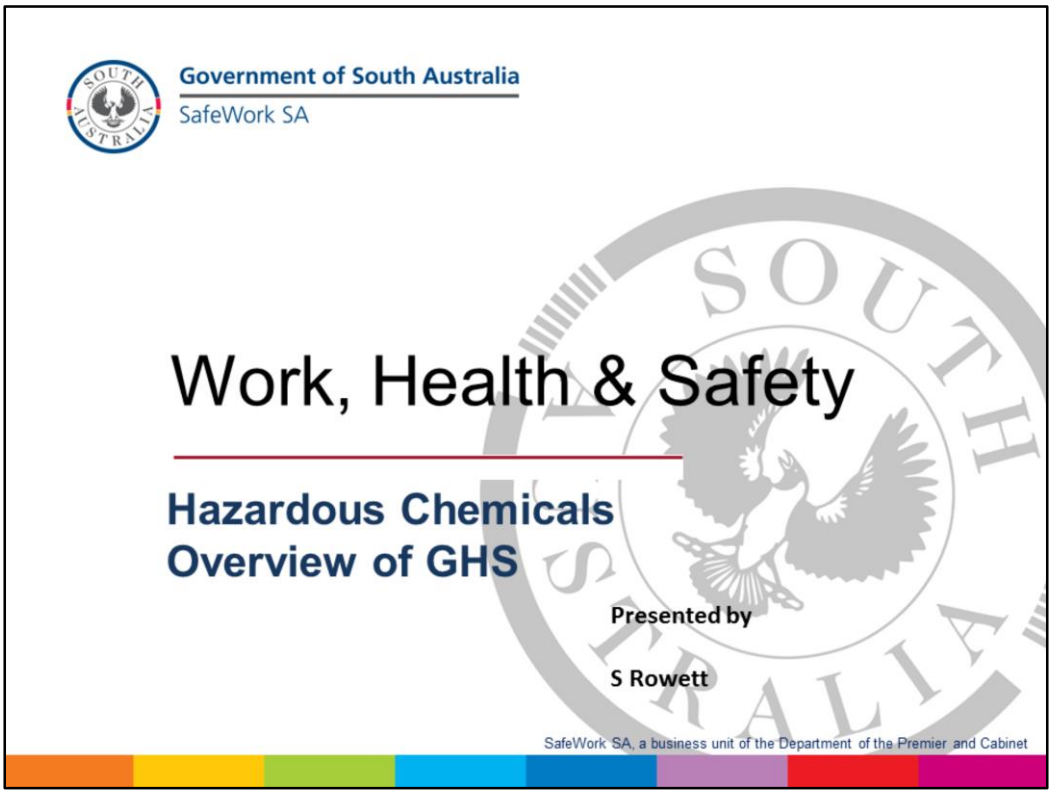
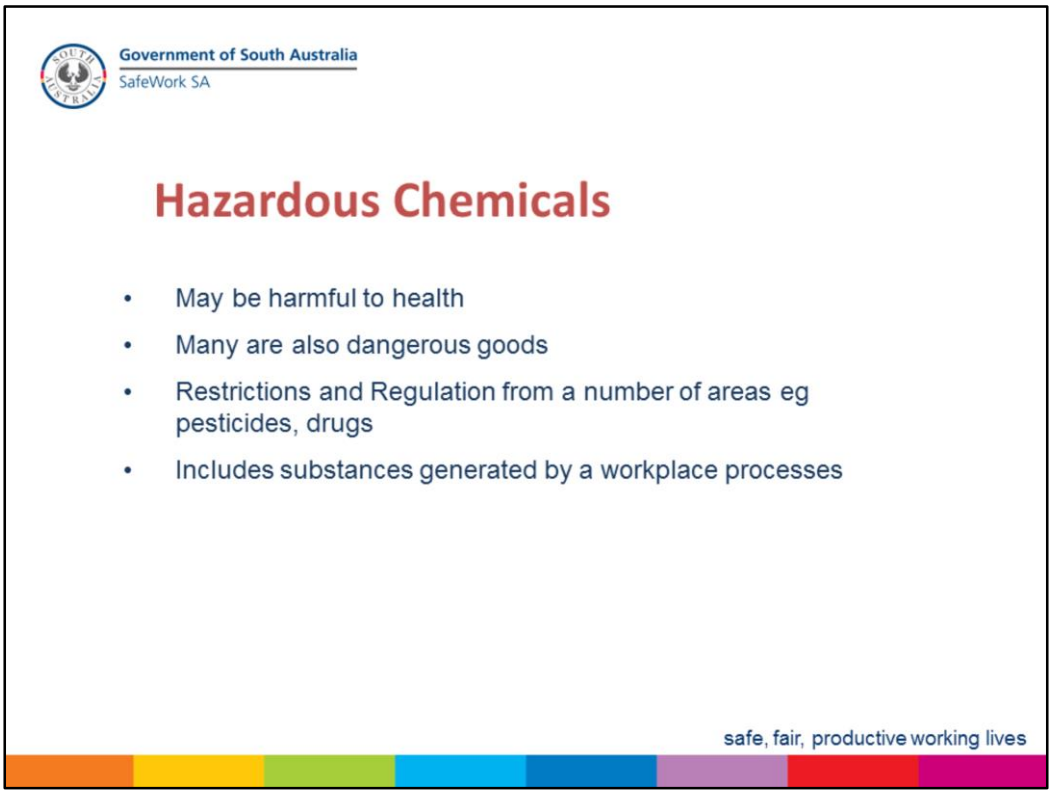
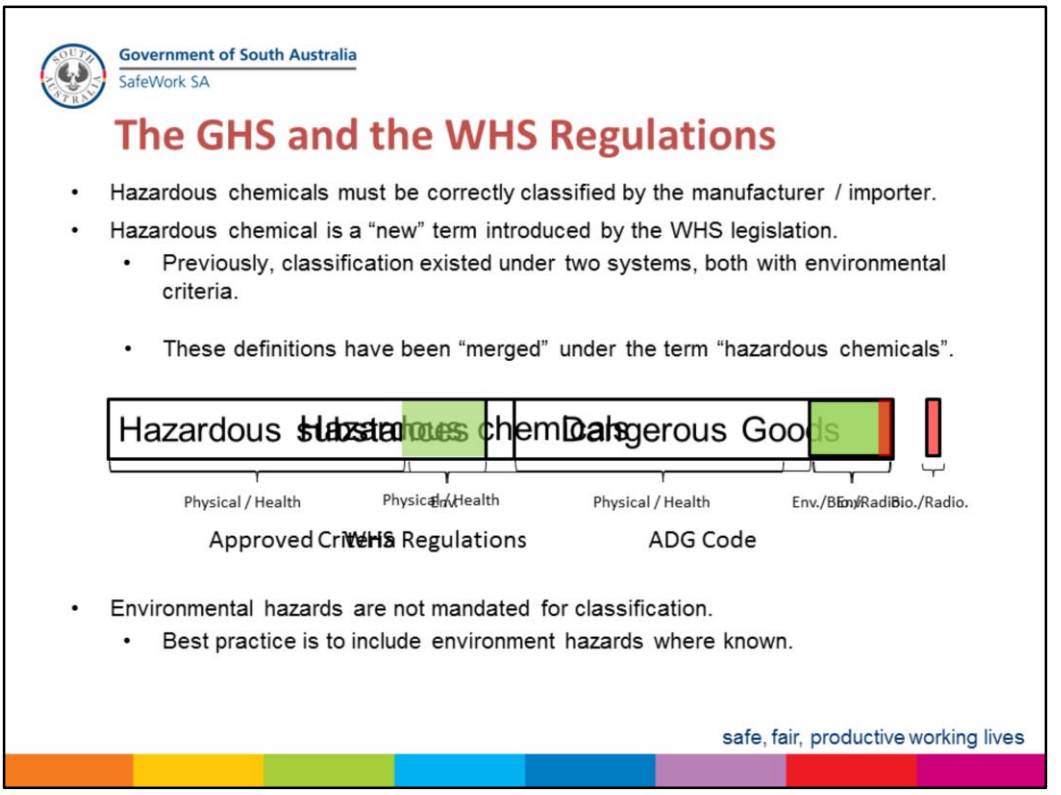

Government of South Australia
SafeWork SA
Work, Health & Safety
Hazardous Chemicals
Overview of GHS
Presented by
S Rowett
SafeWork SA, a business unit of the Department of the Premier and Cabinet



hazardous chemical means a substance, mixture or article that satisfies the criteria for
a hazard class in the GHS (including a classification referred to in Schedule 6), but does not include a substance, mixture or article that satisfies the criteria solely for one
of the following hazard classes:
(a) acute toxicity—oral—category 5;
(b) acute toxicity—dermal—category 5;
(c) acute toxicity—inhalation—category 5;
(d) skin corrosion/irritation—category 3;
(e) serious eye damage/eye irritation—category 2B;
(f) aspiration hazard—category 2;
(g) flammable gas—category 2;
(h) acute hazard to the aquatic environment—category 1, 2 or 3;
(i) chronic hazard to the aquatic environment—category 1, 2, 3 or 4;
(j) hazardous to the ozone layer;
Note—
The Schedule 6 tables replace some tables in the GHS.

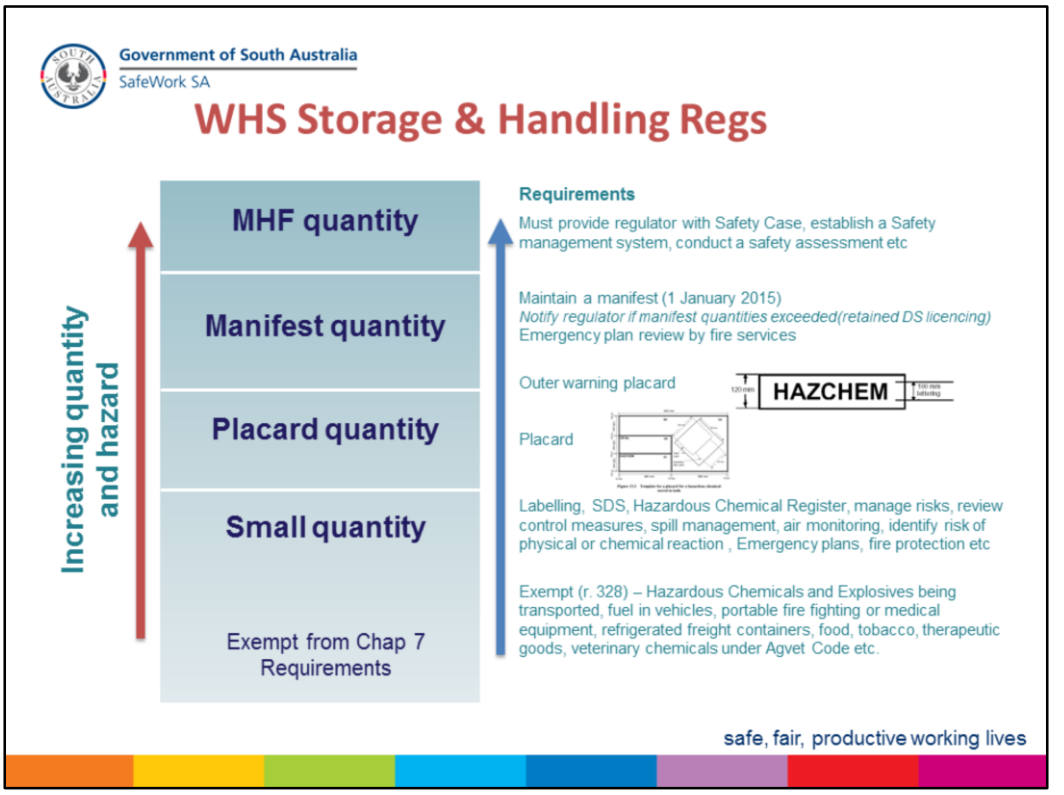


Hazardous substances are those which meet the criteria of the NOHSC Approved Criteria (1994).
Dangerous goods are those which meet the criteria of the ADG Code, 7th Edition.

A hazardous chemical is effectively an amalgamation of these two definitions, except environmental hazards are not mandated by the WHS legislation.

Effectively, a hazardous chemical is a chemical that has the potential to harm human health through workplace exposure or to cause damage to people or property.

Biohazards and radioactive materials are not covered by the chemicals part of the regulations, however, general duties would still apply to these materials.



This slide illustrates that the duties a PCBU must fulfil, and it is directly linked to the quantity that they store.
There are some exceptions;……

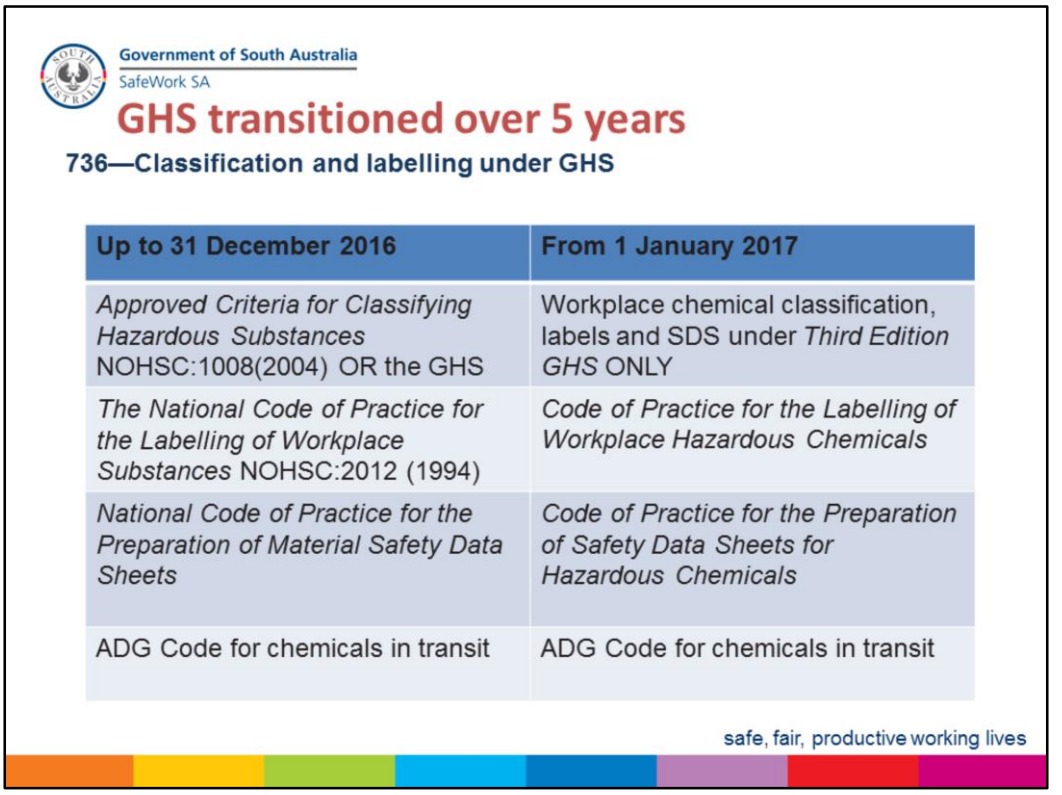
A small quantities, the basics need to be covered, labelling, SDS, chemical registers etc

At placard quantities, they need to appropriately placard their premises and tanks. These requirements are all prescribed in schedule 13 of the regulations.

At manifest quantities- there are some additional requirements.
Regulation 347 and 348 which relates to the keeping of a manifest and notification to the regulator is delayed until 1 January 2015. We will talk a bit more about that later.
R 43 which relates to the preparation of a emergency plan is required for all workplaces. However, R 361 which requires a copy of the plan to be given to Emergency Services is required once manifest quantities are exceeded. This is required from 1 January 2014.

http://www.mfs.sa.gov.au/site/community_safety/commercial/hazardous_chemicals_emergency_planning.jsp

At very large quantities, they will be considered a MHF and will have to cover Chapter 9. This area is covered by our MHF people, so we will not endeavour to cover that here.



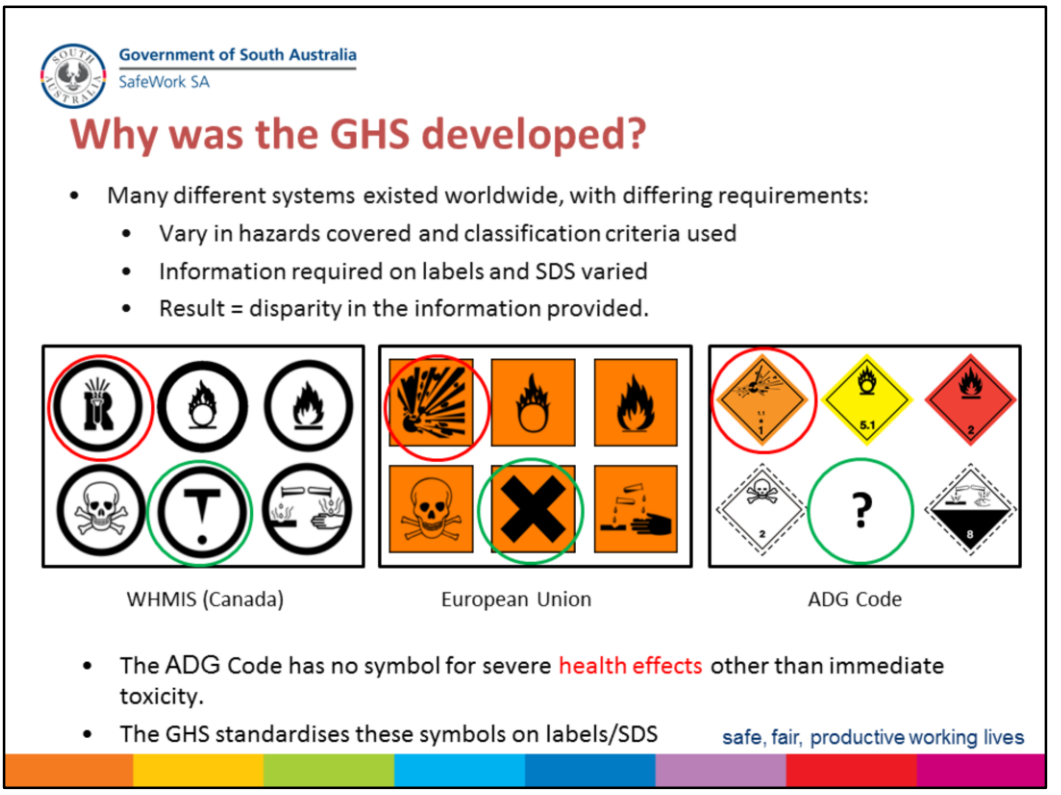
This should be AND – typo

Under NOHSC's National Model Regulations for the Control of Workplace Hazardous Substances [NOHSC:1005(1994)][1] (National Model Regulations) and the Australian, State and Territory government regulations introduced in accordance with the National Model Regulations, manufacturers and importers of substances supplied for use at work are required to determine whether they are hazardous to health before supply.

They are also required to produce labels and Material Safety Data Sheets (MSDS) for all hazardous substances, with appropriate information about the hazards of these substances.

The Approved Criteria focus primarily on the classification of a substance's toxicological properties. Manufacturers and importers will need to consider the physicochemical hazards defined in the Australian Dangerous Goods Code[6], in addition to these health effects criteria, when producing labels and MSDS.

1.9 Criteria applicable to the classification of physicochemical and ecotoxicological properties of a substance are also provided in these Approved Criteria. Where information is available that describes the physicochemical properties of a substance, these criteria may be used to identify any physicochemical hazard supplementary to those defined by the Australian Dangerous Goods Code. Information describing the ecotoxicological properties of a substance may be used to extend the classification of the substance to identify hazards to the environment.

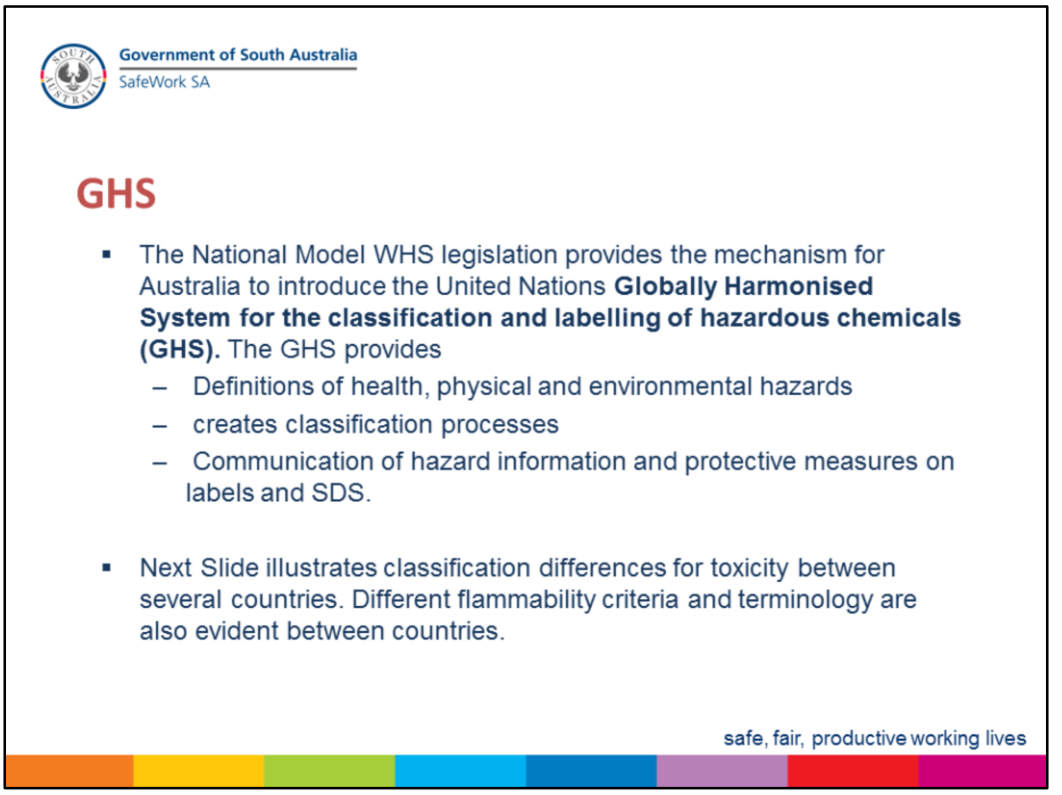


While most of these symbols may be well-known, others may not be necessarily clear to the end-user of a chemical. Training of staff is key to ensure these symbols are understood.

The ADG Code has no symbol for chronic health hazards, sensitisers and other, non-acute health effects.

The GHS standardises hazard symbols and pictograms on labelling of hazardous chemicals.

“R-symbol” means “dangerously reactive materials” – for example, explosives. “Exclamation T” means “materials causing other toxic effects (not acute or immediate)” – for example, carcinogenic.

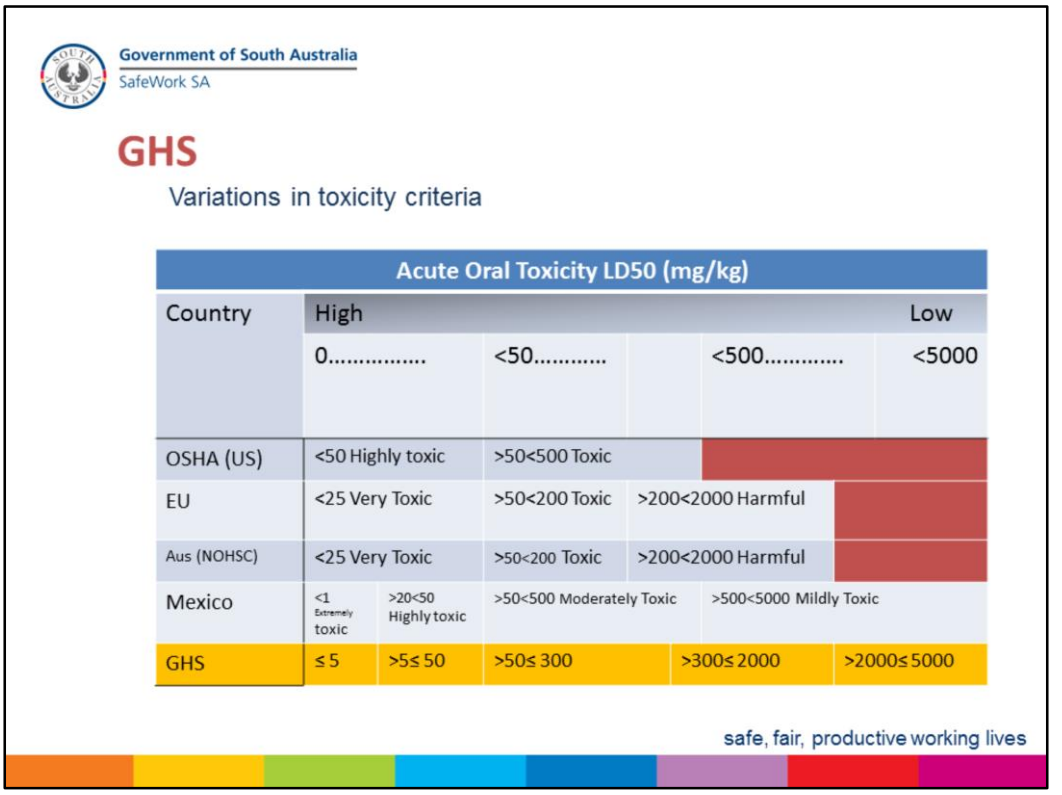


The National Model WHS legislation provides the mechanism for Australia to introduce the United Nations Globally Harmonised System for the classification and labelling of hazardous chemicals (GHS). The GHS provides
Definitions of health, physical and environmental hazards
creates classification processes
Communication of hazard information and protective measures on labels and SDS.

Streamlining of classification processes is achieved by having one set of rules and criteria for classification across the world, where currently many different classification systems and terminology exist. Slide 3 illustrates classification differences for toxicity between several countries. Different flammability criteria and terminology are also evident between countries.

GHS Classification

The GHS classification process involves the identification of the hazard(s) of a chemical or mixture by assigning a category of hazard/danger using defined criteria. The GHS classes cover physical, health and environmental hazards. Physical hazards are largely based on the existing criteria used by the UN Recommendations on the Transport of Dangerous Goods, Model Regulations (UNRTDG). This document is the basis of the Australian Dangerous Goods Code for the safe transport of dangerous goods by road and rail in Australia. The ADG Code is available at www.ntc.gov.au under tab for 'Safety and Compliance'.



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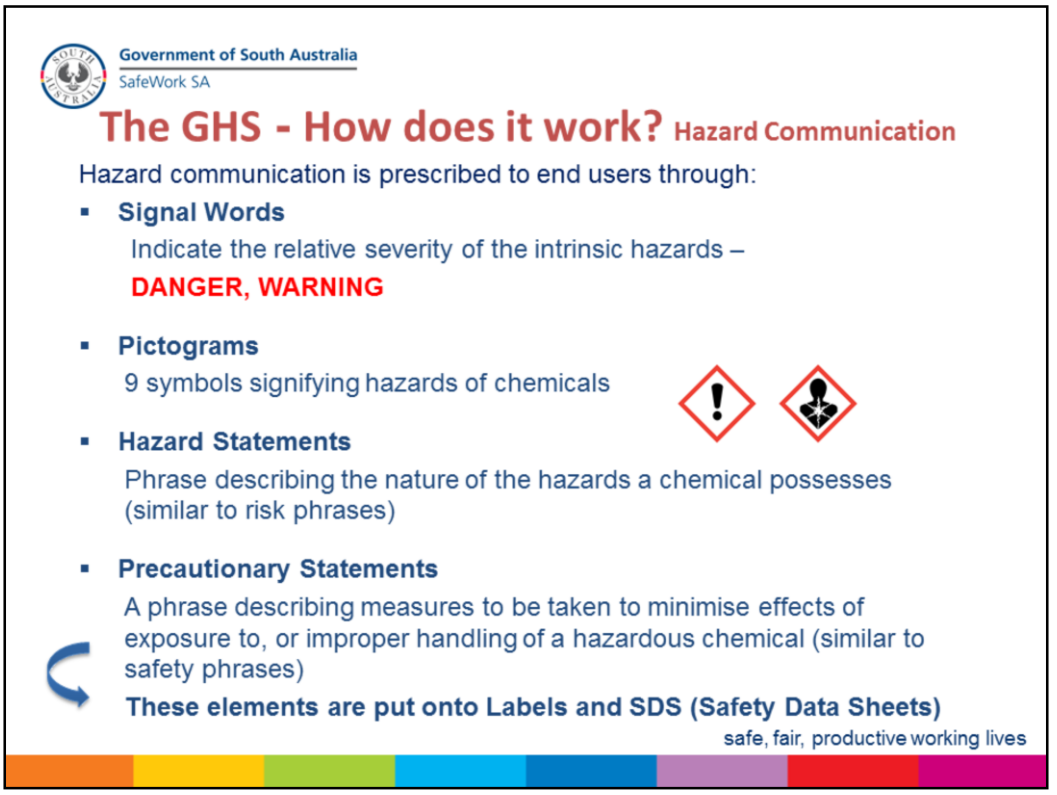


The manufacturer or importer has the duty to correctly classify a chemical and ensure the label and safety data sheet are produced.
If a chemical has been classified as a hazardous chemical, the hazards must be communicated to end users.

Under GHS, hazards are communicated to end users through:

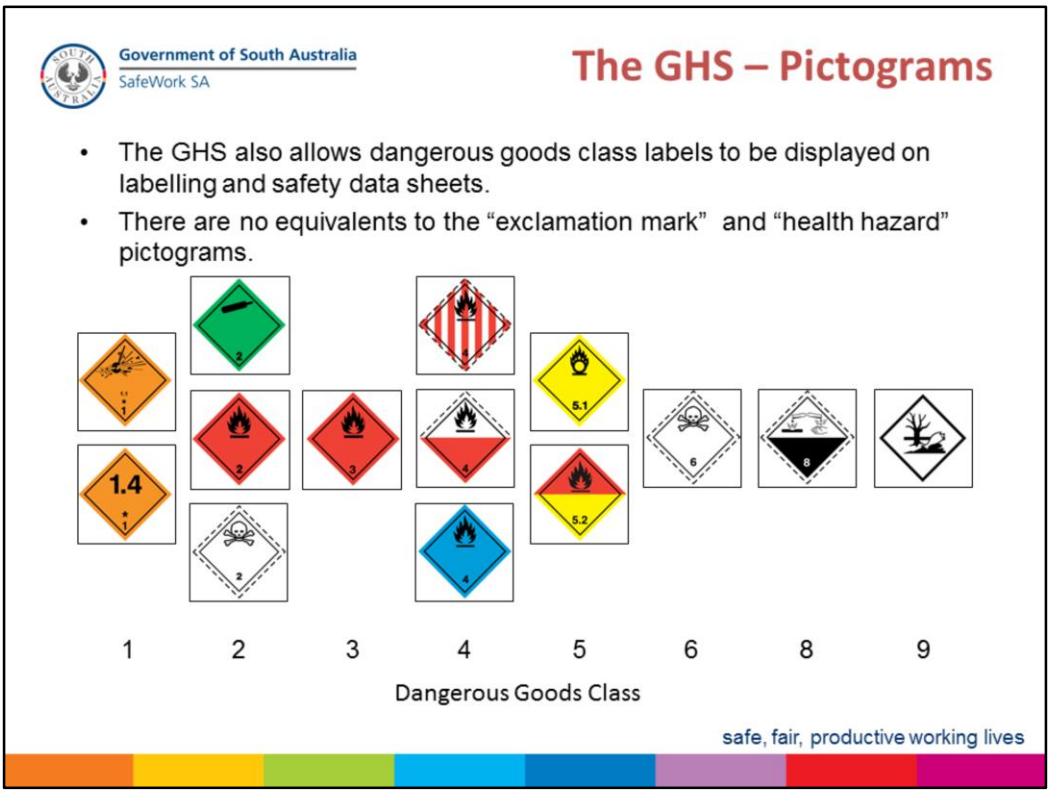
Signal Words – There are now just two words to describe chemical hazard severity; WARNING and DANGER. No signal word is also used for lower categories of hazard.

Pictograms – The GHS uses nine standard symbols to show how chemicals are classified.

Hazard Statements – Communicate the nature and severity of the hazard

Precautionary Statements – Recommend measures to avoid or minimise risks of chemical exposure.

Most changes that end users see will be on labels and safety data sheets. It is important to understand what the new information (symbols and words) means.

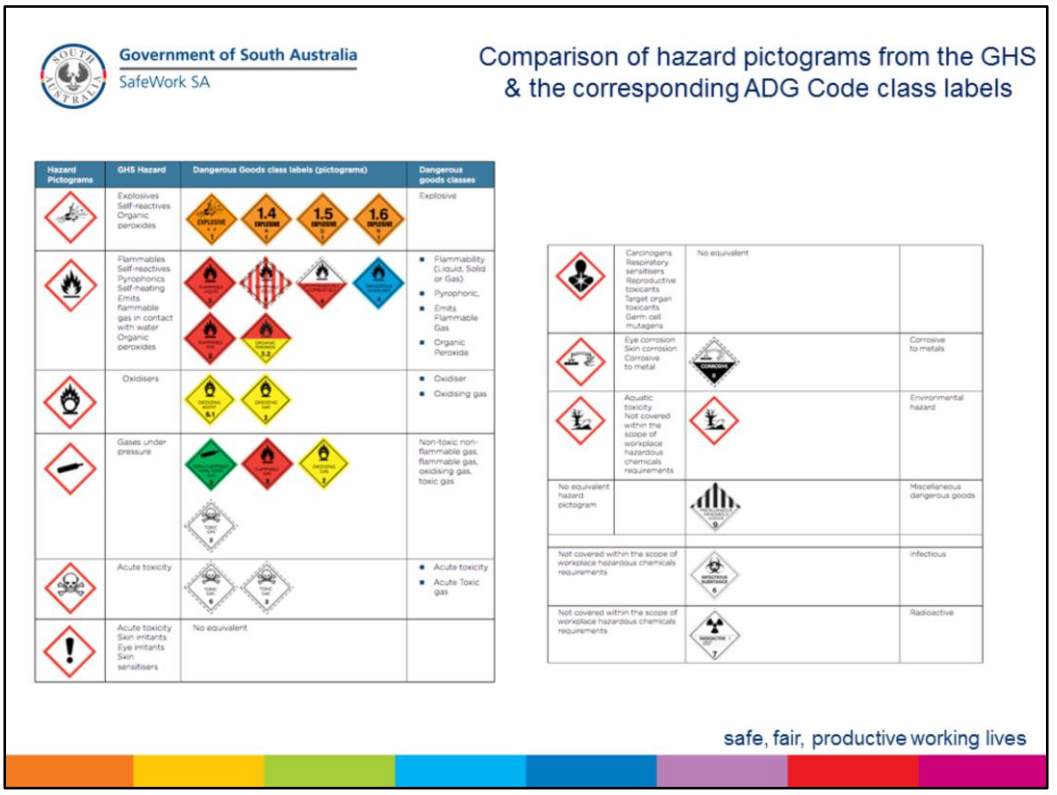


Manufacturers and importer can continue to use the dangerous goods diamonds on labels if they wish.

Of course, depending on transport requirements it may be mandatory to have the dangerous goods pictogram on the container.

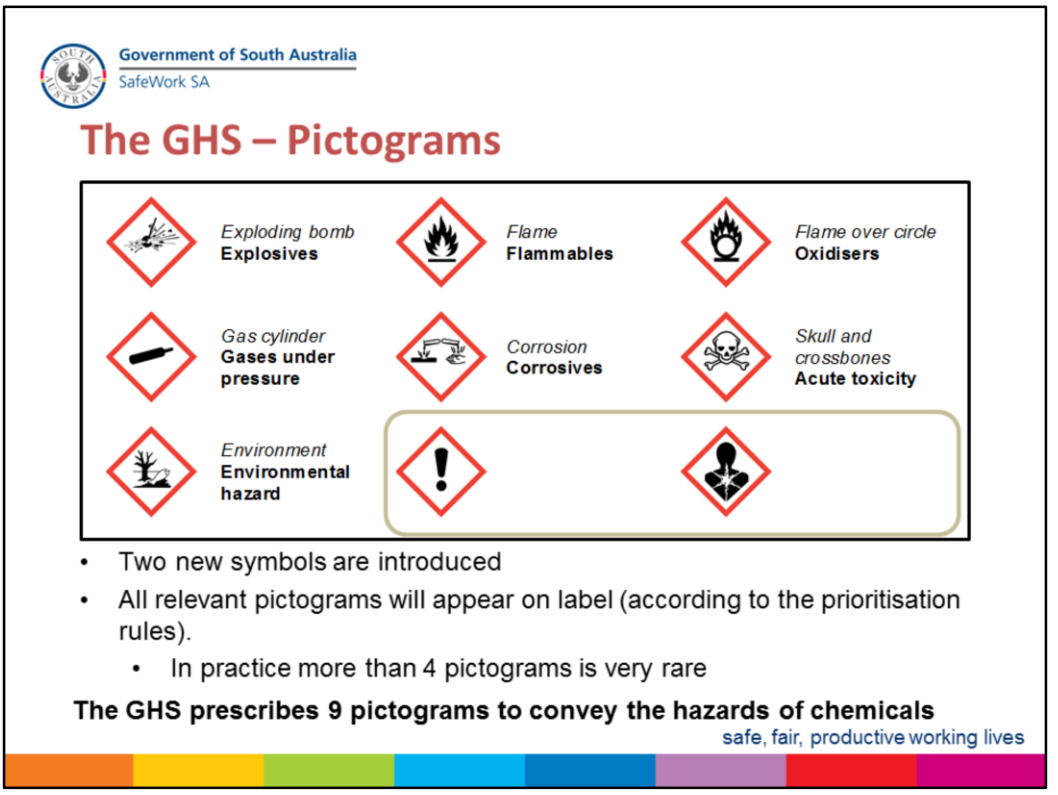
Note there is no dangerous goods equivalent of the exclamation mark and the health hazards symbols.

Note that DG class 7 (radioactive) is not covered by GHS. Neither is 6.2 (infectious substances).



GHS contains 9 hazard pictograms that are representative of the physical, health and/or environmental hazards.

Chronic health hazards include carcinogens, reproductive toxins, mutagens, specific target organ toxicants, and aspiration toxicants



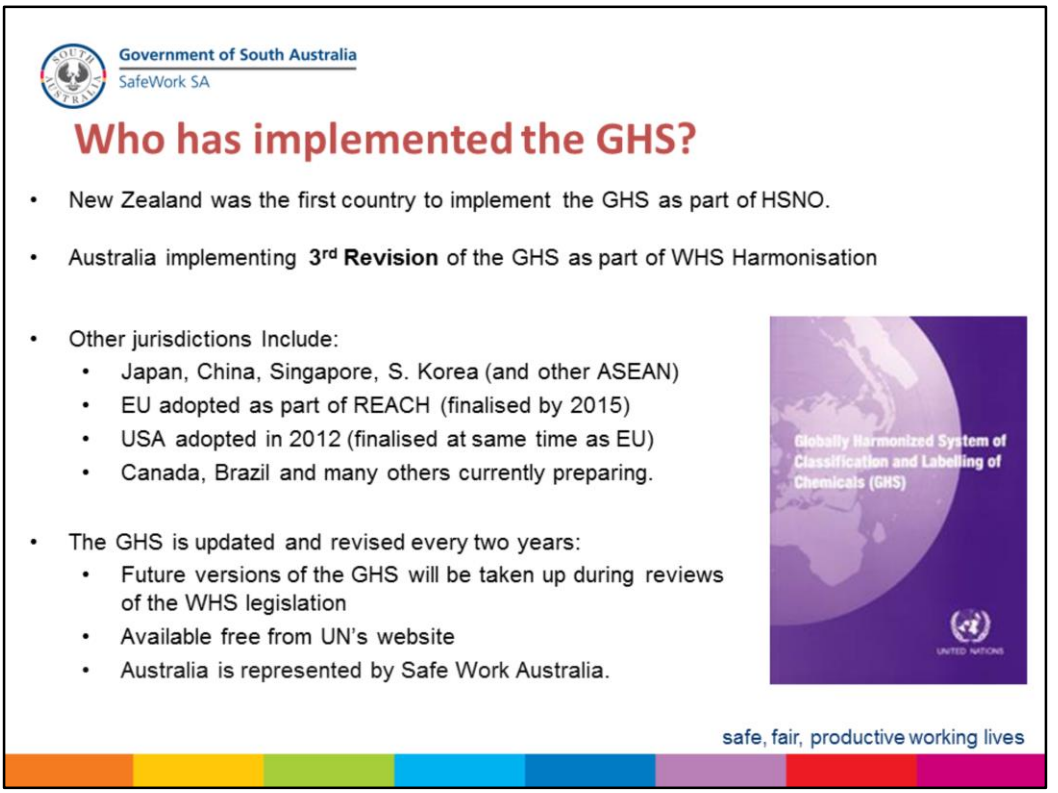
The pictograms are the same shape as the Dangerous Goods labels (a square set at a point) and most, except the exclamation mark and the "health hazard symbol", will be familiar. These are new symbols under the GHS to help convey health hazards that were not covered by the Dangerous Goods Code.

The border is red on a white background. If the product is for the domestic market only and is not for export, then the border can be black.

Each pictogram has an *official name*. The "health hazard" pictogram is colloquially known as "Star Man", "Exploding torso" and others.

Priority rules: Rules for prioritising pictograms to preserve space on label and to prevent possible contradiction of information.

- If *skull and crossbones* appears*, exclamation mark* will not appear.
- If *corrosive* appears, *exclamation mark* will not appear for skin or eye irritation.
- If *health hazard* appears for respiratory sensitisation, *exclamation mark* will not appear for skin sensitisation or skin or eye irritation.
- If a transport pictogram appears, the equivalent GHS pictogram will not appear.



In 2003, the UN adopted the GHS – NZ implemented a draft version as part of its HSNO Regulations.

The 4th revision was published in 2011 and the 5th revision is due to be published in 2013.

The GHS text can be downloaded for free from the UN's website at:
http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html

Hardcopy and CD-ROM versions are also available for purchase through the UN.

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The GHS – Scope and Application

- **Hazards information must be provided to end users:**
  - **Symbols (pictograms)**
  - **Signal words (DANGER or WARNING)**
  - **Hazard statements previously *Risk Phrases*, and**
  - **Precautionary statements previously Safety Phrases .**

Flammable Liquids	Category 1	 GHS02	Danger	H224	Extremely flammable liquid and vapour
	Category 2			H225	Highly flammable liquid and vapour
	Category 3		Warning	H226	Flammable liquid and vapour
	Category 4	No Pictogram	Warning	H227	Combustible liquid

- **These elements are then put onto:**
  - **Labels**
  - **Safety data sheets**

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The manufacturer or importer has the duty to correctly classify a chemical and ensure the label and safety data sheet are produced.

Most changes that end users see will be on labels and safety data sheets.

It is important to understand what the new information (symbols and words) means.

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Labels

- All chemical packages, containers, tanks or bulk stores must be clearly labelled with the following information:
- The **product identifier**
- Proper **shipping name** and **UN number** (if chemical is dangerous goods)
- The **contact details of manufacturer** or importer
- Identity and proportion of each **ingredient**
- Any **hazard pictogram** or a **dangerous goods class label** (for transport)
- Any **hazard statement, signal word** and **precautionary statement**
- Any information about the **hazards, first aid** and **emergency procedures**
- **Expiry date**

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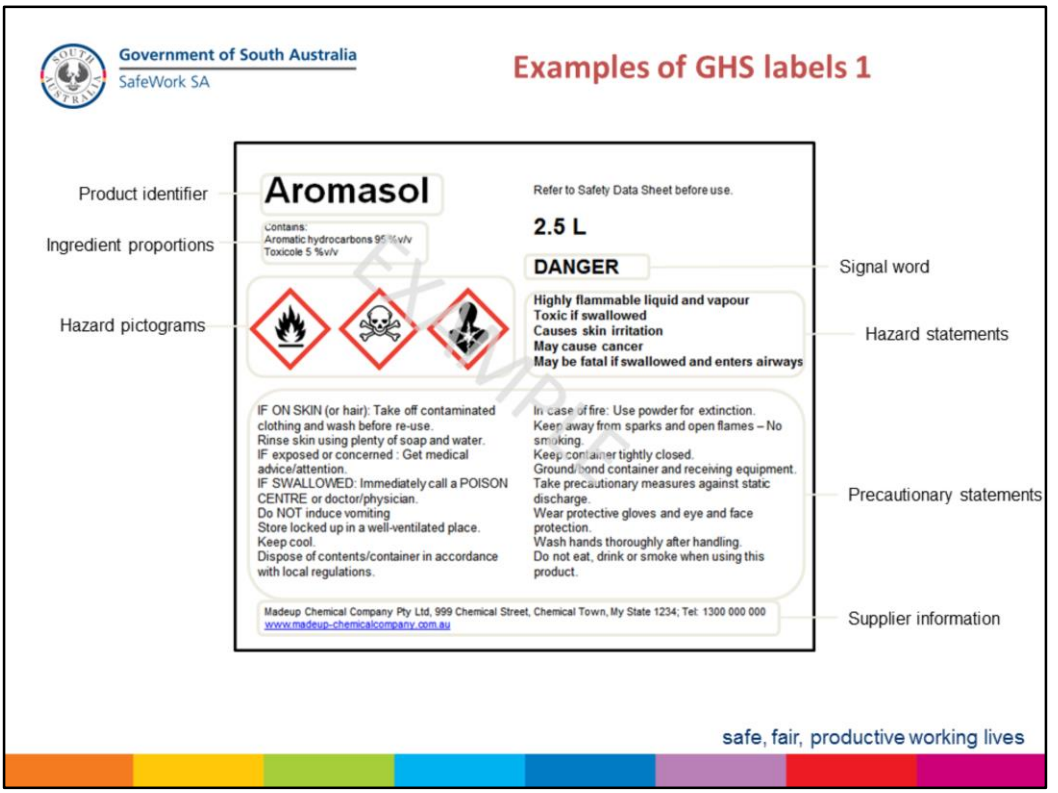
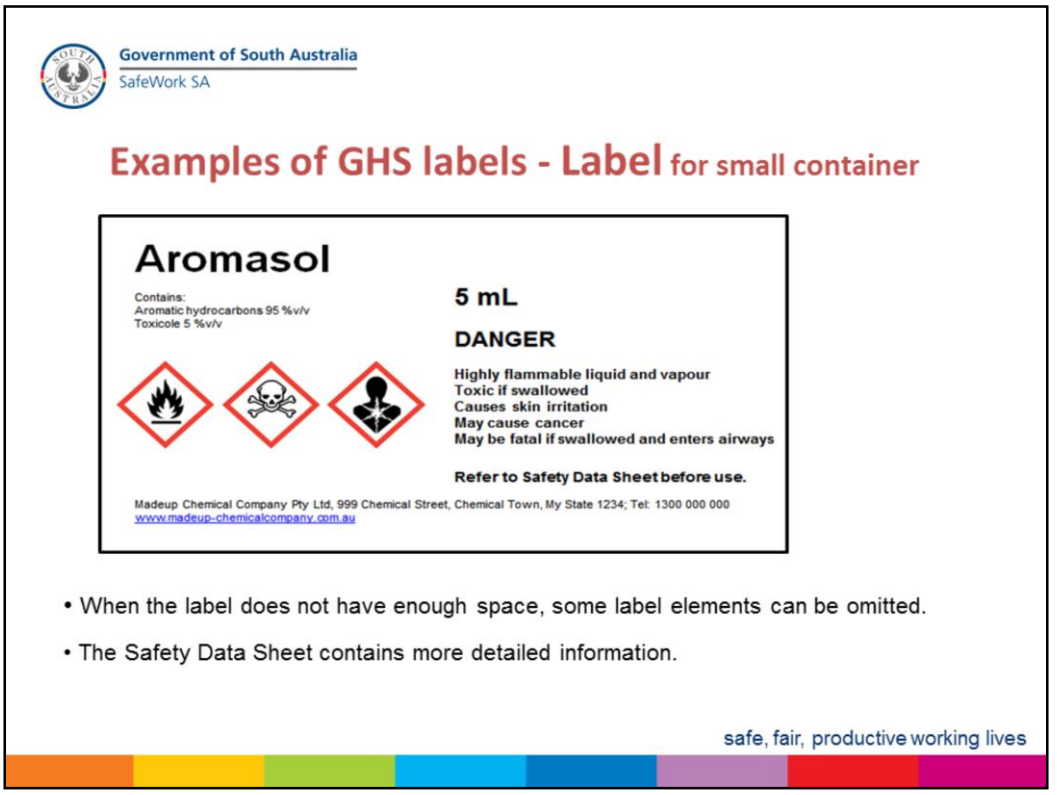


Labels showing all these GHS elements are likely to appear on medium to large-sized containers, where there is enough space to display all the relevant information.

There is no standardised format for labels. Manufacturers can produce labels as they wish, as long as the required elements are present.



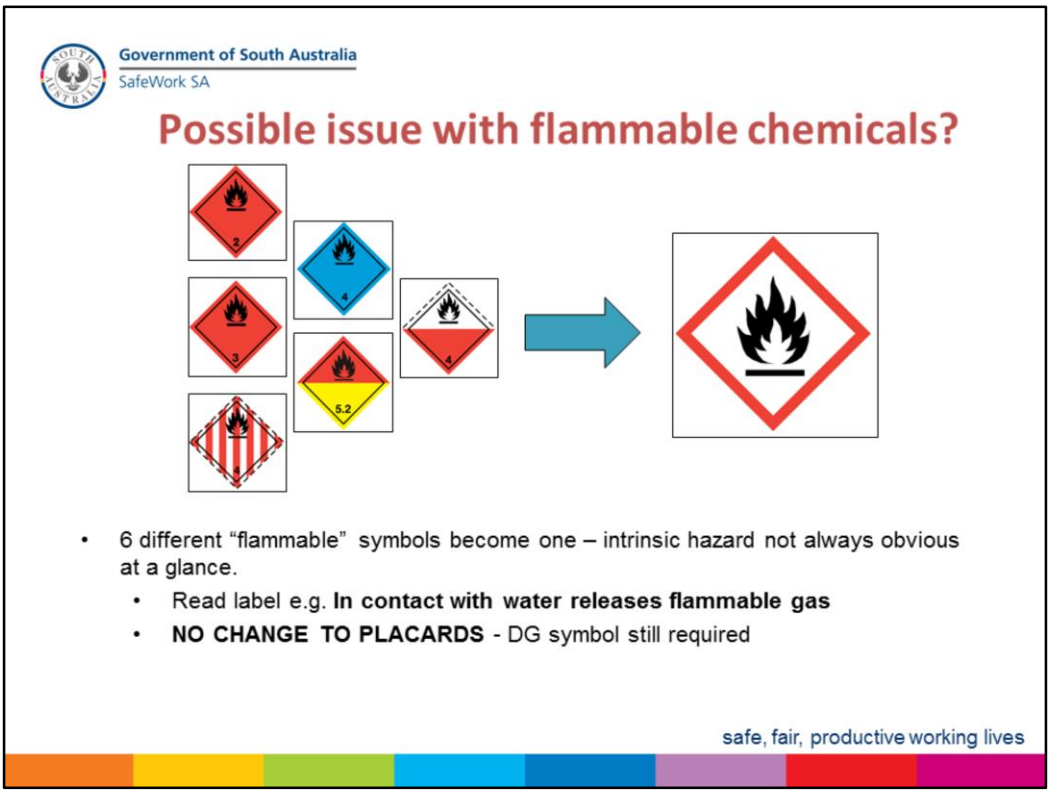
Small Containers

There are no precautionary statements on this label.
Where, for reasons of space and clarity, the supplier has not put all GHS labelling elements on the label, more detailed information, such as precautionary statements, can be found on the Safety Data Sheet.

Where a hazardous chemical is packaged in a container that is too small to attach a label with information that is required of hazardous chemical labels in general, then the label must be written in English and include the following:

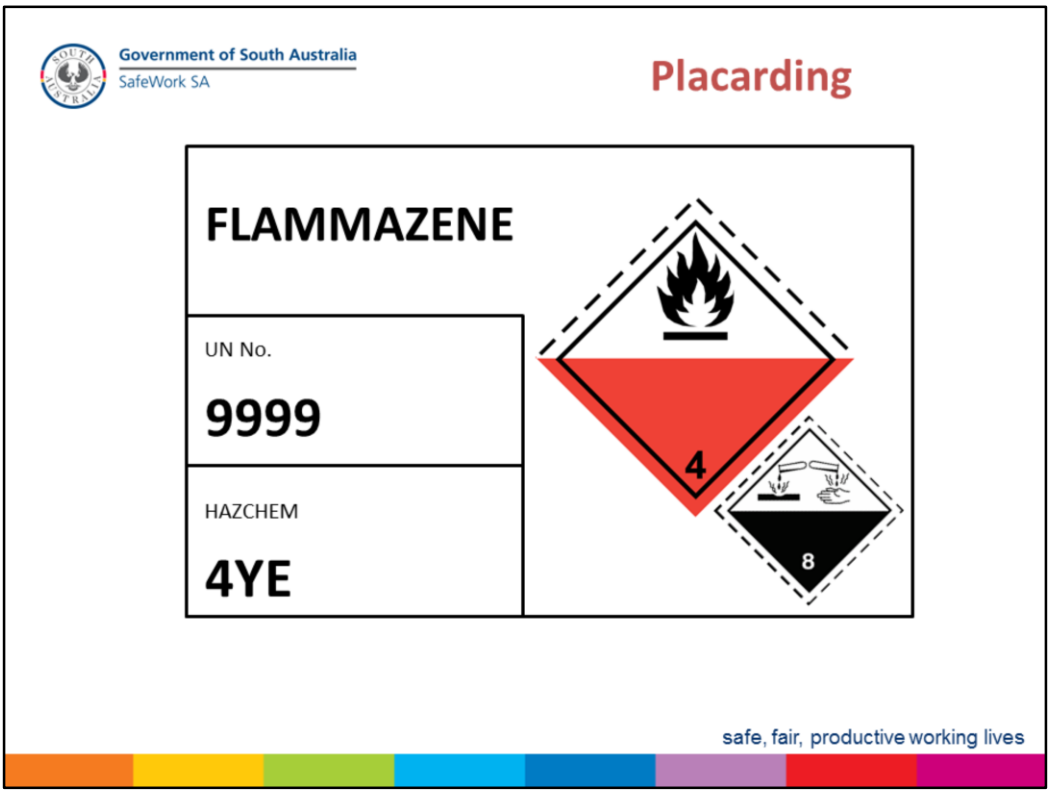
- The product identifier
- The name, Australian address and business telephone number of either the manufacturer or importer
- A hazard pictogram or hazard statement that is consistent with the correct classification of the chemical and
- Any other information required for hazardous chemicals labels in general that is reasonably practicable to include.

Refer to Code of Practice – Labelling (Pages 12-13 and 20) for more details.



Although the workplace label may change, the placard symbol will not. Therefore, in emergency situations, fire crews and response personnel will still have the information to deal with the situation.

Manufacturers can choose to put the dangerous goods symbol on labelling.



By keeping DG symbols on placard, emergency services can see more quickly the hazards.

RESULTS FOR Sodium hypochlorite

The following website is an internet based resource that allows translation to GHS hazard classes and categories:
http://www.gischem.de/ghs/konverter/index.htm

Danger

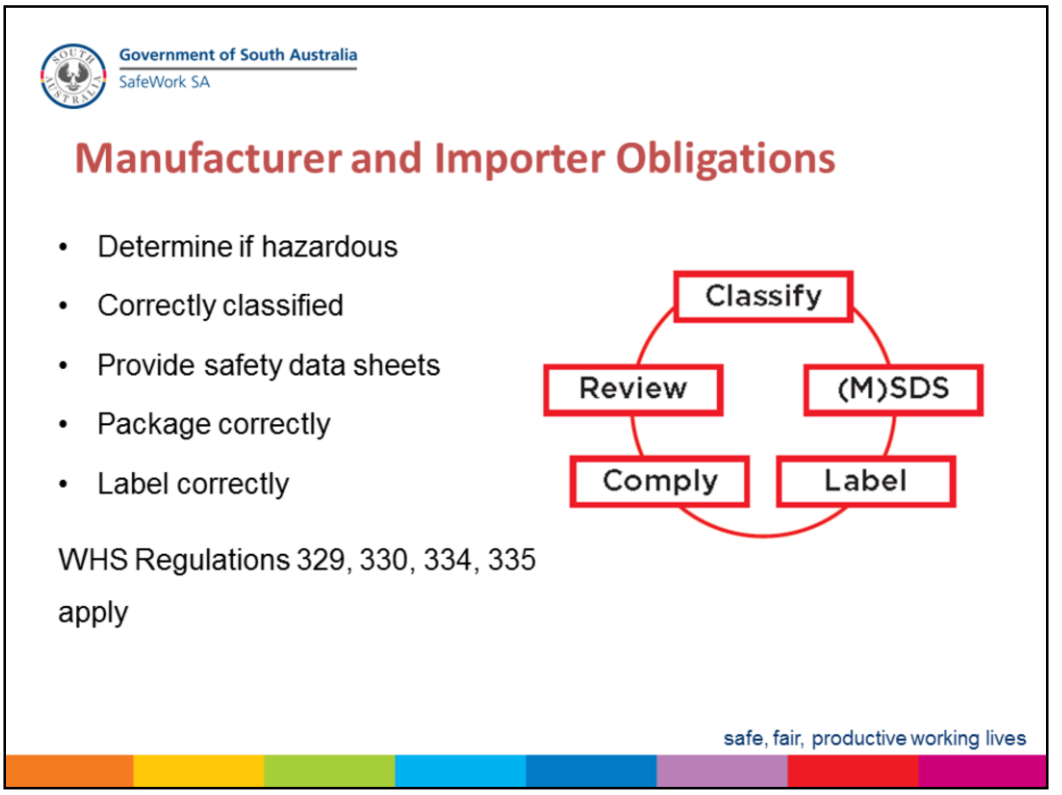
Old label:
C
Risk phrases:
R31: Contact with acids liberates toxic gas.
R34: Causes burns.
R50: Very toxic to aquatic organisms

Hazard statements:
EUH031: Contact with acids liberates toxic gas.

H314: Causes severe skin burns and eye damage.

H400: Very toxic to aquatic life.

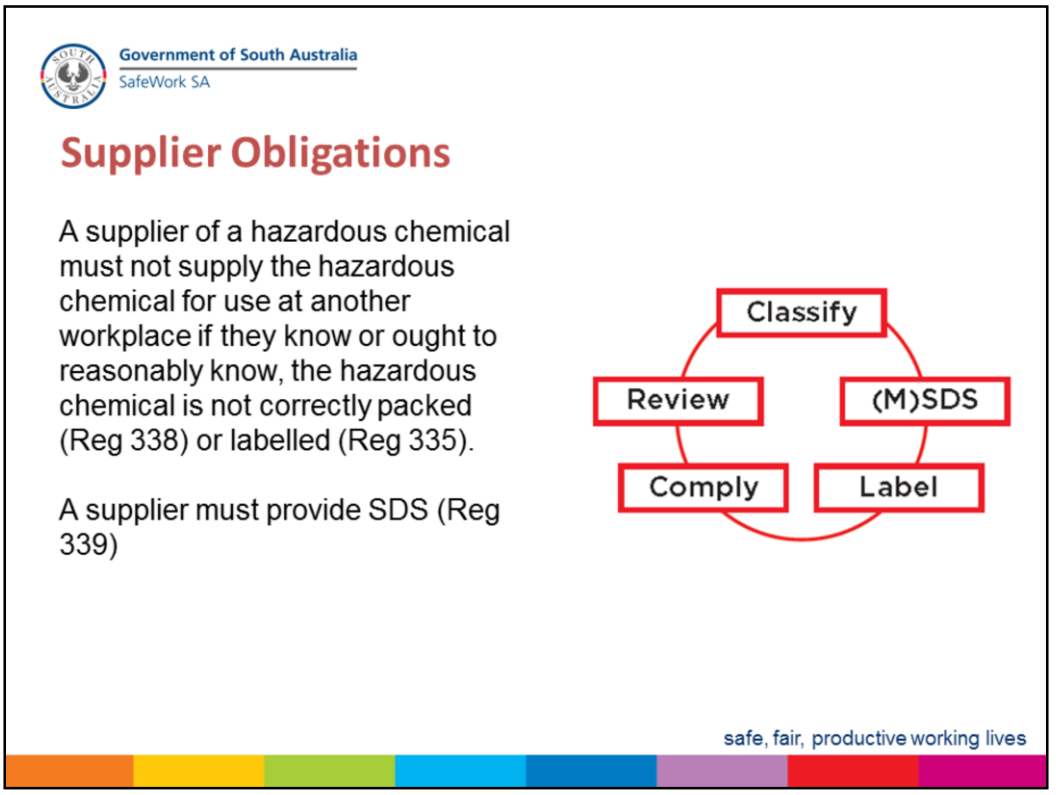
1791	HYPOCHLORITE SOLUTION	8	II or III	2X	SP184	3.8.8 RT7 RT8	Liquid with chlorine odour. Evolves very toxic and corrosive gases on contact with acid. Mildly corrosive to most metals. Not to be transported in unlined metal drums. Inner packagings shall be fitted with vented closures



Manufacturers and importers are required to, before supplying a substance, mixture or article to a workplace:

- Determine whether a substance, mixture or article is a hazardous chemical
- Ensure the hazardous chemical is correctly classified
- Prepare and provide Safety Data Sheets
- Ensure the hazardous chemical is correctly packed and labelled

The guidance document prepared by Safe Work Australia has provided comparison of NOHSC Approved Criteria and GHS classifications (see helpful tools for link to page). It is preferable to classify according to the GHS based on data, but in some cases it will not be possible to translate from the NOHSC Approved criteria to GHS.



Suppliers of hazardous chemicals have similar obligations.

- A supplier of a hazardous chemical must not supply the hazardous chemical for use at another workplace if they know or ought to reasonably know, the hazardous chemical is not correctly packed.
- The same applies for labelling.
- If the safety data sheet for the hazardous chemical is amended, the supplier must provide the updated safety data sheet the first time the chemical is supplied after the amendment.

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Info & training

GHS Classification

Hazard Communication – Labels and SDS

Risk Assessment

Control hazards

Good safety and health outcomes

Review

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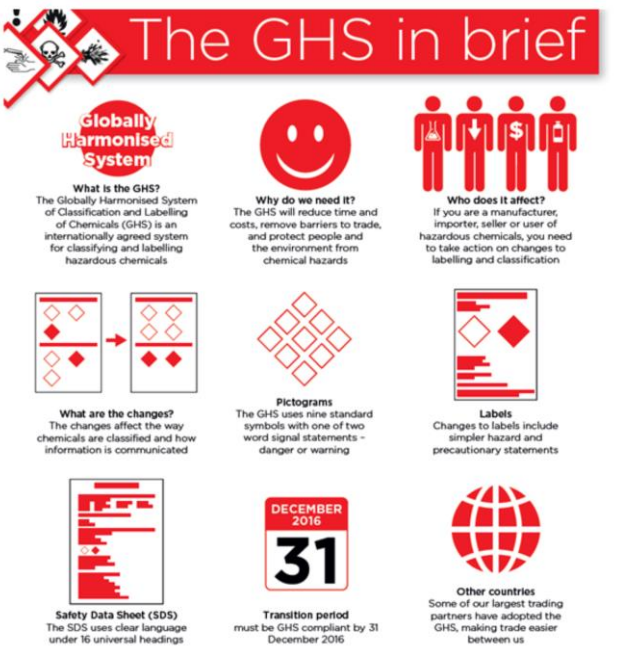
Aim: ***Workers Understand the risks associated with hazardous chemicals they are using*** and the reason for exposure controls.

- Assess your stock by reviewing labels and SDS
- Obtain a current SDS from manufacturer / supplier if not GHS
- Ensure workers training on hazardous chemicals includes understanding the new GHS symbols if they are to be included on chemicals in your workplace.



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