

The Signs they are a changin'

Under the *Classification, Labelling and Packaging (CLP) Regulation EC 1272/2008* [1], the signs (and phrases) that are changing are the existing ones we use to alert us to the hazardous properties of chemicals e.g.

Sign	Hazard	Example of Statement
	Oxidising	Contact with combustible material may cause fire
	Flammable	Highly flammable
	Dangerous for the environment	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
	Irritant	May cause sensitization by skin contact
	Corrosive	Causes burns
	Toxic	Harmful in contact with skin
	Explosive	Risk of explosion by shock, friction, fire or other sources of ignition

Why change a system which has been used quite successfully for over 40 years? Worldwide, there are many different systems for classification and labelling of chemicals. Consequently, one and the same substance may be classified at the same time as toxic, non-hazardous or harmful to health – depending on in which country the classification has been made.

Different symbols are also used to indicate the same hazard.

Countries in the UN, including European Union Member States, have been working together with industry representatives and other stakeholders to agree on a classification and labelling system that can be used worldwide.

The outcome is the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS)*. The GHS provides a single system to identify hazards and to communicate them in transporting and supplying chemicals across the world.

CLP implements the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals into the European Union.

Table 1 – Existing signs based on *Dangerous Substances and Preparations Directives*

GHS introduces a set of globally harmonised criteria for the classification of physical hazards, health hazards as well as environmental hazards.

More specifically, this implies the introduction of a uniform system of:

- hazard classes and categories
- hazard pictograms
- signal words
- hazard statements, and
- precautionary statements

The new symbols will look like this:

Although many of the GHS pictograms are similar to the existing EU system, they have been re-designed and given a new shape and colour. Users will start to see these new pictograms, hazard and precautionary statements, and signal words on chemical labels as suppliers switch to the GHS system. We shall also endeavour to update the pictograms and associated statements on the Hazardous Chemicals part of SafetyNet on the SSERC website.

Physical Hazards				
				
Explosive	Flammable	Oxidising	Compressed Gas	Corrosive to metals
Health Hazards				Env. Hazards
				
Acutely Toxic	Corrosive	Less Serious Hazard	Long Term Health Effects	Damaging to the Aquatic Environment

Table 2 – GHS – Hazard Pictograms and correlated Hazard Classes

DSD/DPD (signs relevant to old system of Dangerous Substances & Preparations Directives)	CLP Regulation № 1272/2008	Example of Hazard Statement (replaces current Risk Phrases, many of which may be already seen as Hazard Statements)	Example of Precautionary statement (replaces current Safety Phrases)
		Heating may cause an explosion	Keep away from heat/sparks/open flames/hot surfaces. No smoking
		Heating may cause a fire	Keep only in original container
		May intensify fire; oxidizer	Take any precautions to avoid mixing with combustibles

		Causes serious eye damage	Wear eye protection
		Toxic if swallowed	Do not eat, drink or smoke when using this product
		Toxic to aquatic life with long lasting effects	Avoid release to the environment
		May cause cancer	IF exposed or concerned: Get medical advice/attention
		May cause an allergic skin reaction	Contaminated work clothing should not be allowed out of the workplace
		Contains gas under pressure; may explode when heated	Protect from sunlight. Store in a well ventilated place
		Corrosive to metals	Absorb spillage to prevent material damage.

Table 3 – GHS – Examples of hazard and precautionary statements (H- and P-statements)

A number of labelling elements will change under CLP:

- new pictograms replace the old signs (illustrated above);
- descriptive Indications of Danger, such as “Flammable” and “Harmful” are replaced by the simpler Signal Words “Danger” and “Warning”.
- “Danger” indicates more severe hazard categories and “Warning” indicates less severe hazard categories.
- Wording is changed e.g. “very toxic” is replaced by “fatal”.
- Risk and Safety Phrases are replaced by Hazard Statements and Precautionary Statements. In many cases these new phrases are very similar to the old phrases, but there are also many new phrases, particularly for the Precautionary Statements.



Figure 1 – A label on an existing bottle may look like this



Figure 2 – New style label on the bottle may look like this

The implementation schedule

The European Union adopted CLP on 20th January 2009 for all EU Member States. The EU states have until **1st December 2010** and **1st June 2015** respectively to classify and label all substances and mixtures in accordance with the new GHS criteria. In this context, a substance is taken as being a single chemical e.g. propanone (acetone).

Until then, the EU Dangerous Substances Directive (DSD) 67/548/EEC as well as the Dangerous Preparations Directive (DPD) 1999/45/EC [2] can be used in parallel with GHS as chemical products with the old and the new label will be in circulation together

These EU Directives will be repealed at the end of the transitional period.

Chemical products already placed on the market (on the shelf) with the old labelling are permitted to be sold for an additional 2 years after the expiration of the respective deadline. The main burden of implementing these changes will fall on the supplier. Early feedback from suppliers of chemicals commonly used by schools indicate they will be working on these changes in the summer of 2010 for inclusion in their 2011 catalogues.

If you **use** chemicals, you should:

- Look out for the changes and check that you are doing what is needed to use the chemical safely. With the change in the way that chemicals are tested under CLP compared to DSD/DPD to classify them, it is inevitable that some chemicals will be re-classified e.g. some substances may be re-classified as hazardous where they were not so before, while for others their classification criteria may have changed. If you are an employer, alert your employees to these changes too.
- Speak to your chemical suppliers if you have any questions or if you don't understand that changes that have been made.

If you are an employer:

- provide your employees with adequate information, instruction and training.
- Ask employees to follow the advice provided on the new labels and, where appropriate, in Safety Data Sheets.

The important thing is not to panic!

References

- [1] - <http://ec.europa.eu/enterprise/sectors/chemicals/classification/how-does-clp-work/>
 [2] - <http://tinyurl.com/DSD-DPD>

See also for further information :

<http://www.hse.gov.uk/ghs/index.htm> - Health & Safety Executive

http://echa.europa.eu/help/nationalhelp_en.asp - National Helpdesk

http://ec.europa.eu/environment/chemicals/ghs/index_en.htm - EC classification, labelling and packaging of chemical substances and mixtures

http://echa.europa.eu/classification/clp_guidance_en.asp - European Chemicals Agency (ECHA)