CLEAPSS

Supporting practical science, D&T and art

- in schools and colleges

An introduction to GHS / CLP chemical hazard labelling

 (*Explosive*)	 (*Flammable*)	 (*Oxidising*)
 (*Health hazards including carcinogens - see page 3*)	 (*Acutely toxic*)	 (*Corrosive*)
 (*Moderate hazard – see page 3*)	 (*Gas under pressure*)	 (*Hazardous to the aquatic environment*)
(Note: The text under each symbol has been adapted by CLEAPSS. It is intended to help users understand the nature of the hazard. It is not intended to replace the official hazard statements.)		

Why is this leaflet needed?

- A new system for labelling chemicals with their hazards is being introduced throughout Europe in the period from December 2010 to 2015.
- Schools will already be receiving chemicals labelled with the new diamond-shaped hazard symbols (see above) and new hazard information.

What should we do about this?

- Schools do not *need* to do anything immediately because the regulations apply only to suppliers of chemicals and schools are not suppliers. However, in due course, teachers, technicians and pupils will need to become familiar with the new labels and any changes in hazard classification.
- CLEAPSS will be updating Hazcards, Recipe Book and other relevant documents and will issue advice when any action is necessary. This is an extensive task, which we expect to be carried out over a two to three year period.

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Glossary of new terms

GHS: Global harmonised system	The United Nations committed itself to produce *"a globally harmonised hazard classification and compatible labelling system, including material safety data sheets and easily understandable symbols".* This is the **GHS** system. The aims are to make it safer to recognise and trade in hazardous chemicals worldwide.
CLP: Classification, Labelling & Packaging of Substances & Mixtures	The GHS system has been implemented in the European Union under the new **CLP** Regulation. EU regulations automatically become law in the UK. The government has adopted this regulation and set a timetable for its implementation. The previous UK chemical classification system was set out in the Chemical Hazard Information and Packaging (CHIP) Regulations. When the CLP regulations are fully implemented in 2015, CHIP and the other relevant previous UK regulations will be withdrawn.

What will we see on the new labels?

The new CLP labels on containers of chemicals will contain the following:

- **Symbol(s)** - Printed in black on a white background within a red diamond frame,
- **Signal Word** - DANGER, WARNING, or no word at all, alerts the user to the severity of the most significant hazard for that substance,
- **Hazard statement(s)** - replace the CHIP risk statement(s), with or without numbers,
- **Precautionary statements** - replace the CHIP safety statements (we do not include these separately in *Hazcards* because they are implicit in any control measures and immediate remedial measures required).

For example: White Spirit.

The information is intended to be clear and obvious. However, it may be difficult to read when it is in a small font. This is a particular issue with small containers. The statements have to cover all applications, including those in industry, which often involve much larger quantities and more hazardous processes than are found in schools. CLEAPSS is concerned that this may cause confusion and alarm particularly to those who are not aware that *risk* is a function of *hazard* and *exposure.* In schools small quantities and appropriate control measures ensure *exposure* is extremely low.

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Frequently asked questions

Why are we getting chemicals from suppliers with new labels?

Suppliers are now required to label new stocks of chemicals using the *Classification, Labelling and Packing Regulations* (CLP).

What is different about the new labels?

The new symbols will be printed in black on a white background within a red diamond frame. They may be accompanied by a *signal word* and are always accompanied by *hazard statements* and *precautionary statements.* An example of one supplier's interpretation of the new symbols compared to the old can be found at www.fisher.co.uk/about_us/AO_GHS_01_2010.pdf.

What are the new CLP symbols?

Many look similar to the old CHIP ones though they may cover a different range of hazards. There are three completely new symbols.

	Indicates damage to genetic material: mutagens, carcinogens, sensitisers, aspiratory hazard (related to breathing) and some high hazard substances that target specific organs.
	Indicates some chemicals formerly classified as HARMFUL or IRRITANT and includes skin sensitising chemicals and some low hazard substances that target specific organs. Some chemicals that were formerly not classified as hazardous at all may now carry this symbol.
	Gases under pressure will display this symbol.

Do the CLP symbols mean the same as the old CHIP ones?

No. The new system includes some redefinition of hazards, which means that for some chemicals the labels may appear very different. This does not mean that the substance has become more or less hazardous but that the way its hazard is classified has changed. This makes a straightforward comparison between the two systems very difficult.

What is a signal word?

The signal word alerts the user to the severity of the hazard.

- **Danger** indicates more severe hazards.
- **Warning** indicates less severe hazards.
- No signal word indicates low hazard although there may still be hazard statements.

Where several hazards requiring signal words are present, only the signal word for the most severe hazard will be displayed.

What is a hazard (H) statement?

The 'H' statements describe the nature (and where appropriate, the severity) of the hazard. These are similar to the 'risk statements' (R numbers) in the CHIP system. In addition the EU has introduced some supplementary statements, prefixed EUH, eg, EUH066: "*Repeated exposure may cause skin dryness or cracking"*. Suppliers' catalogues will display a list that includes H and EUH statements.

What has happened to the harmful / irritant symbol?

The 'X' symbol for HARMFUL and IRRITANT will no longer be used. These hazards are subsumed within the CLP *acutely toxic, corrosive* or *moderate hazard* symbols depending on the type of hazard(s).

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What has happened to the toxic label?

Substances labelled as toxic in the CHIP system may now be classified differently. Under the new CLP system, substances with health effects that manifest themselves in the longer term are labelled with the *Health hazard including carcinogen* symbol.

How does concentration affect the hazard?

When a solution is diluted it becomes less hazardous. This will be indicated by changes in the signal word from DANGER to WARNING or even to no signal word if appropriate, and in the hazard statements. CLEAPSS is working on information relating concentration to the hazards for chemicals commonly used in schools.

Do we have to change all the labels on our stock chemicals?

No. If you find it helpful to see the old CHIP symbols alongside the new CLP ones while you get used to them, you could add the CHIP ones to chemicals received from suppliers. See CLEAPSS electronic documents *Common safety signs & hazard symbols* (E232), *Producing labels* (E236) and *CLEAPSS font* (E252) for the CHIP versions.

Do we have to use the new labels now when we give chemicals out in class?

No. A school is not a supplier so technically doesn't have to label chemicals prepared for lessons at all. However, it is good practice to do so in order to pass on hazard information to teachers and pupils. It may be simpler to issue the old CHIP symbols and risk statements until teachers become familiar with the CLP ones.

Should we use the new CLP symbols in our teaching?

Legally, the CLP system is now the 'correct system'. Pupils will increasingly meet the CLP symbols on everyday substances and schools are well placed to help pupils to understand them. CLEAPSS will be updating its guidance to help schools revise their resources and documentation. This task should be seen as a long term project.

What about text books?

Existing text books and other curriculum resources will feature the old CHIP system. New publications and examination papers should begin to use the new CLP system. Inevitably, there will be inconsistencies while organisations change between the two.

What is CLEAPSS doing?

CLEAPSS is working with suppliers to achieve a consistent interpretation of the CLP system, concentrating initially on chemicals commonly used in schools. We will update our resources and guidance as the situation becomes clearer. This is an ongoing task which we anticipate may take several years to complete.

We plan to update:

- the *Chemical Stocklist* (E233),
- *Hazcards,*
- the *Recipe Book*, Design & Technology information, and other documents,
- Section 7.8 in the *Laboratory Handbook* (which will go into more detail about GHS and CLP).

More information

For more details of the legislation see www.hse.gov.uk/ghs/eureg.htm.

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