










An introduction to GHS / CLP chemical hazard labelling

 <p>GHS01 (<i>Explosive</i>)</p>	 <p>GHS02 (<i>Flammable</i>)</p>	 <p>GHS03 (<i>Oxidising</i>)</p>
 <p>GHS04 (<i>Gas under pressure</i>)</p>	 <p>GHS05 (<i>Corrosive</i>)</p>	 <p>GHS06 (<i>Acutely toxic</i>)</p>
 <p>GHS07 (<i>Moderate hazard – see page 3</i>)</p>	 <p>GHS08 (<i>Health hazards including carcinogens - see page 3</i>)</p>	 <p>GHS09 (<i>Hazardous to the aquatic environment</i>)</p>
<p><i>(Note: The text under each pictogram 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.)</i></p>		

What is changing?

- A new system for labelling chemicals with their hazards is being introduced throughout Europe in the period from December 2010 to 2018.
- Schools will already be receiving chemicals labelled with the new diamond-shaped hazard pictograms (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 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 and continuing task.
- Make sure you are following the most up-to-date advice. Keep an eye out for new or revised guidance from CLEAPSS on our website (www.cleapss.org.uk) and on Twitter @CLEAPSS

<p>GHS: Global harmonised system</p>	<p>The United Nations committed itself to produce "a globally harmonised hazard classification and compatible labelling system, including material safety data sheets and easily understandable pictograms". This is the GHS system. The aims are to make it safer to recognise and trade in hazardous chemicals worldwide.</p>
<p>CLP: Classification, Labelling & Packaging of Substances & Mixtures</p>	<p>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.</p> <p>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.</p>

What will we see on the new labels?

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

- **Pictogram(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 image shows a detailed chemical label for White Spirit. The label includes the following text: "Contains: Naphtha (petroleum) hydrodesulfurized heavy EC No 265-185-4", "DANGER: May be fatal if swallowed and enters airway. May cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking. Flammable liquid and vapour. Toxic to aquatic life with long lasting effects. Read label before use. Keep out of reach of children. Keep away from sparks/open flames - No Smoking. Do not breathe vapours. Do not get in eyes, on skin or on clothing.", "IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Do NOT induce vomiting.", "IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN: Wash with plenty of soap and water. If medical advice is needed, have product container or label at hand. Dispose of contents/container to hazardous waste collection point." The label features four hazard pictograms in red diamonds: a flame, a skull and crossbones, a tree and fish, and an exclamation mark. Callout boxes identify: "Signal word - DANGER - relating to the most serious hazard. In this example, the hazard statements show that it refers to the Health hazards symbol", "Hazard statements", "Precautionary statements", and "Hazard symbols".

The information is intended to be clear and obvious. However, it may be difficult to read when it is in a small font. 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.

Remember that *risk* is a function of *hazard* and *exposure*. In schools small quantities and appropriate control measures ensure *exposure* is extremely low. Subject to an appropriate risk assessment, even some chemicals with severe hazards may be used.

Why are we getting chemicals from suppliers with new labels?




Suppliers are now required to classify and label *new* stocks of substances using the CLP regulations. Mixtures will need to use CLP system from 2015 but may already do so.

What is different about the new labels?

The new pictograms will be printed in black on a white background within a red diamond frame. They may be accompanied by a *signal word* and also *hazard statements* and *precautionary statements*.

What are the new CLP pictograms?

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

	Indicates damage to genetic material: mutagens, carcinogens, sensitisers, respiratory hazard (related to breathing) and some highly hazardous 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 pictogram.
	Gases under pressure will display this pictogram.

Do the CLP pictograms 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 almost impossible. As always, if the actual hazards are recognised to have changed, CLEAPSS will amend its guidance appropriately.

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, e.g., EUH066: '*Repeated exposure may cause skin dryness or cracking*'. Suppliers' catalogues often 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* pictograms depending on the type of hazard(s).

Substances labelled as toxic in the CHIP system may now be classified differently. Under the CLP system, those whose health effects manifest themselves in the longer term are labelled with the *Health hazard including carcinogen* pictogram. The CLP 'skull & crossbones' pictogram represents acute toxicity.

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. See GL111 *CLP hazard classifications for diluted common chemicals* for details.

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

No. The criteria for classification under CLP and CHIP differ. **Do NOT** relabel a chemical that was supplied under CHIP.

Only use CLP labels on chemicals supplied classified under CLP. If the classification of new stock doesn't match our guidance, see the CLP pull-out supplement in Bulletin 146 for advice on what to do.

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.

Nevertheless, since chemicals with CHIP labels will be around for some time, colleagues and pupils need to become familiar with both systems. You could print out and display the two sets of pictograms. See CLEAPSS electronic documents *CHIP Hazard warning pictograms* (E236a) for the CHIP versions and *CLP pictograms for chemical hazard labelling* (GL 110) for CLP versions.

Should we use the new CLP pictograms in our teaching?

Legally, the CLP system is now the 'correct system'. Pupils will increasingly meet the CLP pictograms on everyday substances and schools are well placed to help pupils to understand them. However, students (and all of us) will continue to see CHIP hazard labels at school and probably outside, so it is important to teach them about both systems.

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 are also working with publishers and awarding bodies on request.

In addition to producing new documents with guidance relating to CLP, we plan to update:

- the *Chemical Stocklist* E233; a CLP version is available and being updated over time,
- *Hazcards*,
- the *Recipe Book*, Design & Technology information, and other documents,
- the *Laboratory Handbook* section 7

For more details of the legislation and guidance from HSE see:

www.hse.gov.uk/chemical-classification/index.htm

For the latest CLEAPSS guidance, see the CLEAPSS web site www.cleapss.org.uk.