
	<h1>Frequently Asked Question</h1>				
Ref: FAQ 012:02	RE: Chemical Safety				
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Note:	<i>This information/advice has been issued in response to frequently asked questions around a specific topic and may not cover all issues arising, should you require more specific advice please contact the Health & Safety Help Desk. The management of any occupational safety and health issue(s) remains the responsibility of local management.</i>				

What is a Chemical Agent /Hazardous Substance?

A hazardous substance is something that has the potential to cause harm. The hazards of a substance are evaluated by examining the properties of the substance such as toxicity, flammability and chemical reactivity, as well as how the material is used.

What harm can chemicals cause?

- Chemicals may cause health effects, for example be a [respiratory](#) sensitiser or [skin](#) irritant
- Chemicals may be a physical hazard, for example a flammable, explosive or oxidising chemical
- Chemicals may affect the environment, if they are used, stored or disposed of incorrectly

What are the main routes of exposure?

Healthcare workers may suffer health effects when hazardous chemicals enter the body. The main routes of exposure are:

- Inhalation: breathing in the chemical
- Absorption: through skin contact or a splash in the eye
- Ingestion: via contaminated food or hands and
- Inoculation: when a sharp object such as a needle punctures the skin

Does the Manager have to complete a risk assessment?

Yes, the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001 places a duty on the employer to determine whether any hazardous chemical agents are present at the workplace and to assess any risk to the safety and health of employees arising from the presence of those chemical agents. This duty extends to others in the workplaces, who are not their employees, such as service users and visitors.

These must be documented in line with existing HSE risk assessment and management procedures. The risk assessments must include any practice concerns and take into account information arising from health and safety audits, risk management data and the legislative and policy frameworks specific to each service.

Managers must ensure that agreed control measures are put in place to eliminate those hazards or reduce the risks as far as reasonably practicable. Control measures should be reviewed periodically to ensure they are satisfactory. Click [here](#) to access the Chemical Agents Risk Assessment Form.

What are the key duties of Managers with regards to chemical safety?

1. **List** all hazardous substances in the workplace.

Inspect the workplace and prepare an inventory of the chemicals you have on the premises and the activities/processes that produce chemicals. Remember that chemicals can be individual substances or mixtures. Please see table 1 below as an example of an Inventory table.

Name of preparation or process	Chemical contained	CAS Number	Quantity & Storage Location	What is it used for?	Hazard information	Supplier's details	SDS available?	Occupational Exposure Limit (OEL)	OEL Monitored Yes/No	Below OEL	Above OEL
ABC Cleaner	Sodium Hypochlorite	7681-52-9	5 x 1 Litre containers stored in cleaning cabinet in kitchen	Cleaning kitchen	Irritant to eyes & skin	XYZ Cleaning Ltd, 24 ABC Estate, Dublin 1	Yes	N/A	N/A	N/A	N/A

2. **Identify the hazards** and decide who may be at risk.
3. **Assess the risks** to employees and others from the presence and potential exposure of the individual chemicals.
 - Who and how many people use the chemical
 - How long is each user exposed to the chemical
 - How often is the chemical used
 - How is it used
 - How will the user be exposed
 - How much is used
 - Can others in the workplace be exposed
4. **Identify what controls are required – Ensure existing controls are adequate and/or additional controls identified.**

Once you have assessed the risk associated with the use of chemicals, you are required to identify what control measures are necessary to reduce those risks to a reasonable level. When identifying the appropriate control measures, it is imperative that you utilise the hierarchy of controls below:

- **Eliminate the hazardous chemical** – Do you need to use the chemical/can you change the process?
- **Substitute for a less hazardous chemical** - replace your hazardous chemical with a less hazardous one or in a less hazardous form
- **Install engineering controls** - aim to separate your employees from the chemical hazard by placing a physical barrier between them and the chemical e.g. fume cupboards/forced ventilation/scavenging system – where present are they effective and maintained regularly ?

- **Administrative controls** – Examine your work processes/practices and consider how employees are exposed to the chemical. Identify aspects of the work practices that maybe altered to avoid exposures, measures to be considered (*please note this is an non exhaustive list*):
 - Minimise the number of employees involved in a task
 - Exclude other employees not involved in the task from the area where the chemical is being used
 - Provide training to your employees on the hazards and safe use of the chemicals they work with
 - Ensure chemicals are correctly stored
 - Ensure emergency procedures are in place in the event of an accident e.g. spillage
 - Ensure appropriate hygiene arrangements are in place e.g. washrooms, appropriate level of housekeeping
 - Where appropriate ensure adequate waste disposal arrangements are in place
 - Health surveillance for employees where necessary

- **Provide personal protective equipment (PPE)** - The use of PPE should be the last line of defence. It is not regarded as an alternative to other suitable control measures. It should provide adequate protection against the risk from the hazardous chemicals to which the wearer is exposed, for the duration of the exposure, taking into account the type of work being carried out.

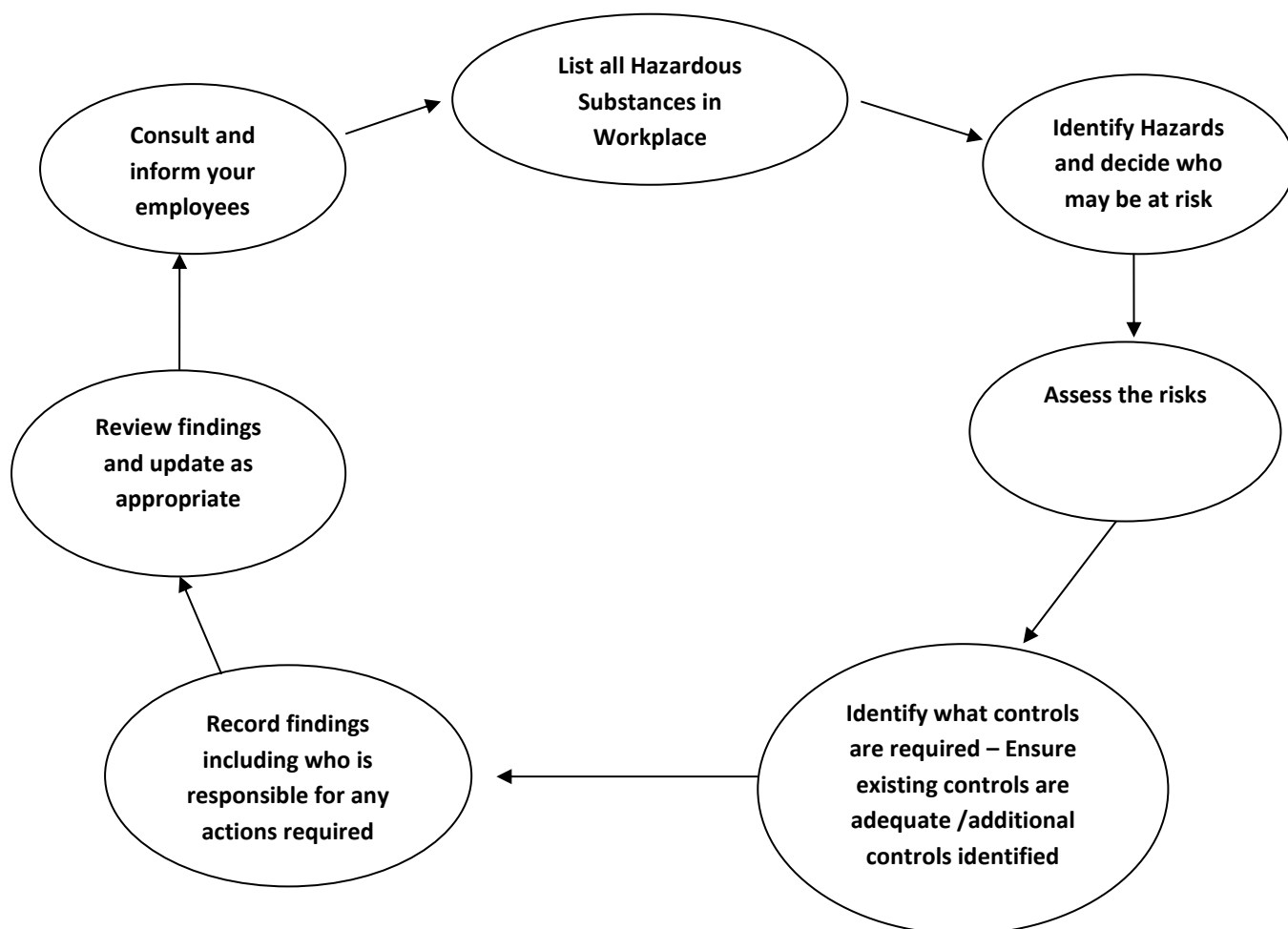
In practical terms, you may have to apply a number of control measures to adequately reduce exposure to the hazardous substance.

5. Record and Review findings.

6. Consult and inform your employees:

In summary, please refer to the Management of Chemical Safety Overview Flowchart below.

Management of Chemical Safety Overview



How do I determine the potential harm associated with chemicals?

The most important source of information on the hazards that the chemicals may present can be found on the container **label** and the **Safety Data Sheet (SDS)**.

What is a Safety Data Sheet?

The SDS has 16 sections that provide information required to complete a suitable and sufficient risk assessment as it includes detailed hazard information.

- It identifies how the product is to be used as intended by the manufacturer or importer
- It provides information in order to the appropriate controls measures and procedures to be applied
- The information on the SDS can be used to inform elements of the chemical training program for workers as it covers hazards, information on safe handling and storage and emergency procedures
- The SDS provides information on regulatory Occupational Exposure Limits for chemicals as appropriate this information may impact on the control measures in place

The Safety Data Sheet must contain the following 16 headings:

- | | | |
|---|--|-----------------------------------|
| 1. Identification of the substance/preparation and of the company/undertaking. | 6. Accidental release measures | 12. Ecological information |
| 2. Hazards identification. | 7. Handling and storage | 13. Disposal consideration |
| 3. Composition/information on ingredients | 8. Exposure controls/ personal protection | 14. Transport information |
| 4. First aid measures | 9. Physical and chemical properties | 15. Regulatory information |
| 5. Fire-fighting measures | 10. Stability and reactivity | 16. Other information |
| | 11. Toxicological information | |

What information should the CLP label contain?

It comprises of the name, address, telephone number of the supplier, product identifiers and where applicable, hazard pictograms, signal word, hazard statements, precautionary statements and supplemental information.

To ensure that customers can easily take notice of the hazard information on packages, general rules are set out to determine the colours, size of labels, formats, legibility and location of label elements.

The supplier may choose the order of the hazard and precautionary statements but they must be located together and be in an official language of the Member State unless the Member States state otherwise.

What does the new Classification, Labelling and Packaging Regulations (EC) No 1272/2008 mean?


The classification, labelling and packaging of substances and mixtures, hereafter known as CLP, introduces the United Nations globally harmonised system (GHS) for classification and labelling of chemicals into Europe.

What are the main changes with these CLP Regulations?

CLP introduces a new 'global' terminology. The main changes in terminology are outlined in the table below with the label elements being expanded further.

Table 1: CLP Terminology

CLP (New Regulations)


Pictogram
Hazard Statement
Precautionary Statement
Mixture
Signal Word (Danger/Warning)
Annex VI
Hazardous

Hazard Pictograms:

The familiar orange hazard symbols are replaced by hazard pictograms in the shape of a square set at a point, with a white background and red border

CLP also introduces three new hazard pictograms; the 'Exclamation Mark' which will replace primarily the St Andrews Cross, the 'Exploding Man' which is to be used to identify chronic health hazards and 'gas bottle' used to identify compressed and liquefied gases.



Pictograms for labelling

Signal Word: There will no longer be an 'indication of danger' such as 'Toxic' or 'Dangerous to the Environment', instead CLP introduces two signal words 'Warning' or 'Danger' depending on the category of the hazard class.

Hazard Statements

Hazard (H) statements has replaced Risk (R) Phrases & are grouped depending on the hazards as follows:

- H200 series- Physical hazards
- H300 series - Health hazards
- H400 series- Environmental hazards

Precautionary Statements

Precautionary (P) statements has replaced Safety (S) Phrases & are grouped depending on their purpose as follows:

- P100 series - General
- P200 series -Prevention
- P300 series - Response
- P400 series - Storage
- P500 series- Disposal

Supplemental Hazard Information (EUH Statements)

This comprises of a number of elements, including the following

- (a) EU Leftovers; these hazard classes are not included in the GHS but were retained in CLP.
- EUH001 (R1) 'Explosive when dry
 - EUH066 (R66) 'Repeated exposure may cause skin dryness or cracking'
 - EUH059 (R59) 'Hazardous to ozone layer
- (b) Special Rules: which were taken over from the existing CPL Regulations
- EUH201/201A Contains Lead should not be used on surfaces liable to be chewed or sucked by children. Warning contains lead
 - EUH204: Contains Isocyanates, may produce an allergic reaction
- (c) Other information can be provided in the supplemental information section provided it does not contradict or cast doubt on validity of the information specified elsewhere on the label.

What is an Occupational Exposure Limit Value (OELV)?

An OELV is defined as the limit of the time-weighted average (TWA) of the concentration of a chemical agent in the air within the breathing zone of a worker in relation to a specified reference period as approved by the Health and Safety Authority.

In other words, it is a defined limit where an employee can safely be exposed to a chemical without causing any harm to that employee; in any case it must not be exceeded.

In some cases it may be necessary to complete occupational exposure monitoring (air sampling) of the workplace to determine the level of potential exposure to hazardous chemicals or to validate that the controls measures are working effectively e.g. anaesthetic gases.

The HSA Code of Practice lists chemicals with occupational exposure limit values. These can also be found in Section 8 of the SDS. If it is determined that Occupational Hygiene monitoring is required then you should contact the Health and Safety helpdesk.

Do I need to carry out health surveillance?

Where exposure to a hazardous chemical can cause an identifiable disease or illness (e.g. skin or respiratory sensitisers) and there is a reasonable likelihood of illness occurring (e.g. where control of

exposure relies heavily on PPE and strict work procedures), it may be necessary to provide health surveillance. This should be carried out by an occupational healthcare professional. This requirement would also be determined by completing a risk assessment.

Additional Resource Information at www.hse.ie/safetyandwellbeing :

FAQ 005:03 Frequently Asked Question (FAQ) on Pregnant Employees

SAGN 001:03 Safety Advisory/Guidance Note on Completing a Pregnant Employee Risk Assessment

SAGN 009:03 Occupational Hygiene Monitoring in the Workplace

Legislation:

The Safety, Health and Welfare at Work Act 2005.

The Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001.

2016 Code of Practice for Chemical Agents Regulations

The Safety, Health and Welfare at Work (General Application) Regulations 2007 and Safety, Health and Welfare at Work (General Application) (Amendment) regulations 2007.

Useful Contacts and References:

HSE's [Chemical Agents Risk Assessment](#) form.

[Chemical Management at Work campaign](#)