



Learner Guide to Principles of COSHH

This resource is intended as both a study guide and reference book for learners intending to undertake the **Level 2 Award in the Principles of COSHH**

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Introduction

What is COSHH?

COSHH, or the Control of Substances Hazardous to Health regulation is simply the legal framework or guide to handling hazardous substances that exist in the workplace.

Exposure to hazardous substances can affect the body in many different ways. Skin contact, inhalation and ingestion can cause damage. In legislation, Hazardous Substances are defined in a number of ways.

Having proper controls over these hazardous substances not only protect everyone in the workplace, but also a legal requirement with the COSHH regulations 2002.



Chapter 1

Hazardous substances in the workplace

What is a Hazardous Substance?

A hazardous substance is any substance that can cause harm to health. It can be chemical, naturally occurring such as pollen or grain dust, or a biological agent (mould, or bacteria).

A hazardous substance is usually identified by one or more Hazard symbols on the supply label. Any substance that has an exposure limit approved by the Health and Safety Executive (HSE).

Exposure to a hazardous substance in the workplace can be direct, as in the case of working with Paints, adhesives and cleaning chemicals; or indirect as a result of an activity that produces unwanted substance which can be hazardous to health, a good example is welding activity that generates hazardous fumes. Another good example would be saw dust generated from sawing timber at a wood-mill.



Definitions

- ❖ **Hazard** – something with the potential to cause harm
- ❖ **Hazardous Substance** – a substance that can cause physical harm
- ❖ **Risk** – the **likelihood that harm will occur**, the degree of harm and the number of people affected
- ❖ **Control measure** – something (a control) **that prevents or reduces** a risk
- ❖ **Accident** – an **unplanned** and **uncontrolled** event leading to harm or damage
- ❖ **Near miss** – an event or situation which did not result in harm or damage **but nearly did**, in time or distance
- ❖ **Occupational health and safety** – the **safety and health of people** in relation to work, working and the working environment

Forms of Hazardous Substances

Hazardous substances can take a number of different forms, most common are:

Liquids – Fuels, Acid-based detergents, and solvents

Solids – pigments, rat poison, broken glass

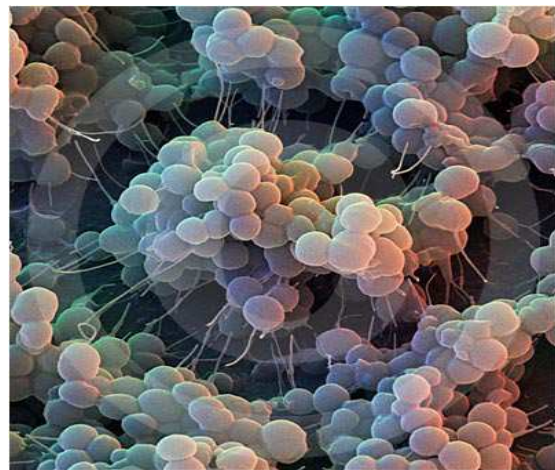
Gases – Carbon Monoxide

Dust and Powder - Cement, flour, saw-dust

Fumes – Lead, welding fumes

Vapours – Solvents or adhesives

Biological agent – Bacteria, viruses, fungal spores



Some key terms

- ❖ **Toxic** – poisonous
- ❖ **Corrosive** – likely to cause chemical burns (e.g. Acids)
- ❖ **Irritant** – likely to cause an inflammatory reaction (e.g. Dermatitis)
- ❖ **Harmful** – likely to cause harm of some other sort (e.g. respiratory sensitization that may lead to asthma)

Benefits of Control

Legal Compliance

Establishing controls and maintaining them complies with various regulations such as the Health and Safety at Work etc. Act 1974, which places duties and responsibilities on both the employer and the employees. COSHH regulation 2002 as amended calls for employers to carry out risk assessments concerning hazardous substances and place appropriate controls to make sure the risks are minimized to acceptable level.

Healthy and Contented employees

Improving health and safety measures at work reduces the likelihood that employees would get sick. And with a positive health and safety culture that involves staff in place, job satisfaction will increase evidently.

Lower Staff Turnover

With higher employee retention due to job satisfaction, employers' costs that is usually associated with the hiring process, training and orientation would go down as a result.

Increased Productivity and Profit

With effective controls in place employees' sense of well-being can lead to more efficiency and productivity.

Fewer problems with Enforcement Authorities

Effective controls lead to compliance with the law, which also mean lower risks of accidents; hence less, of no issues with the enforcement authorities.

Lower Insurance premiums and other costs

Simply put, insurance premiums increase because of poor health and safety record.

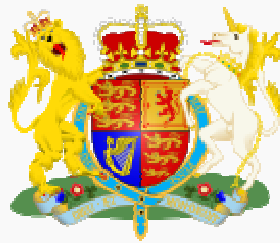
Chapter 2

Legislation



The Health and Safety at Work etc. Act 1974

Health and Safety at Work etc. Act 1974...



Health and safety in the workplace is governed by **The Health and Safety at Work etc. Act 1974**, also referred to as HASAW or HSW. It is the primary piece of legislation covering occupational health and safety in the United Kingdom. The Health and Safety Executive is responsible for enforcing the Act and a number of other Acts and Statutory Instruments relevant to the working environment.

Employers to protect, so
practicable, the
welfare of all



The Management of Health and Safety at Work Regulations 1999

The Management of Health and Safety at Work Regulations 1999 places a duty on employers to assess and manage risks to their employees and others arising from work activities.

The duty on employers is
assessment.

COSHH Regulation 2002 (as amended)

The Control of Substances Hazardous to Health regulation 2002 (as amended) specifically calls for employers to assess the risks from hazardous substances and to place appropriate controls.

Employers' Responsibilities

1. Assess the risks
2. Decide what precautions are needed
3. Prevent or adequately control exposure
4. Ensure that control measures are used and maintained
5. Monitor the exposure
6. Carry out appropriate health surveillance where necessary
7. Prepare plans and procedures to deal with accidents, incidents and emergencies
8. Ensure employees are properly informed, trained and supervised



Employees' Responsibilities

1. Use the health and safety precautions and follow the correct procedures
2. Co-operate with monitoring and health surveillance

Responsibilities of the self-employed

The COSHH regulation 2002 places the same duties as both employer and employee on the self-employed – except for monitoring and health surveillance.

Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (as amended)

CHIP or CHIP3 regulation 2002 (as amended) requires suppliers (manufacturers, importers, distributors, wholesalers and retailers) to provide information about the dangers of chemicals and to package them safely.

Suppliers' Responsibilities

1. Suppliers MUST identify the hazards of the chemical (known as classification)
2. Suppliers MUST provide information about the hazards to their customers (label, Safety Data Sheet - SDS)
3. Suppliers MUST package the chemical safely



Guidance

The Health and Safety Executive (HSE) provides information, advice and guidance on a wide range of subjects specific to health and safety issues in the workplace through publications and the work of field officers.

The main purposes of guidance are:

- Interpret the law (to help better understand it)
- Help people comply with the law
- Give technical advice

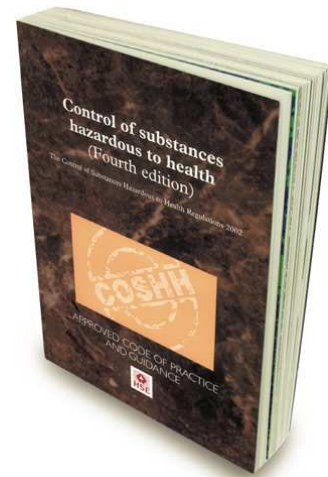
Following guidance is not compulsory, but will help to ensure employers comply with the law

Approved Codes of Practice (ACOPs)

Approved codes of practice are issued by the Health and Safety Executive; however, many professional and other bodies that set standards (trade unions, manufacturers, or professional associations) can also produce codes of practice.

The main purposes of ACOPs are:

- Offer practical examples of good practice
- Provide advice on how to comply with the law
- Have special legal status



Enforcement

Health and safety legislation is enforced by Health and safety Executive and local authority enforcement officers. The main responsibility of enforcement authorities is to ensure that duty holders manage and control risks effectively, thus preventing harm.

Enforcement officers have a range of powers to enforce the law including,

- ❖ Offer information and advice
- ❖ Serve an improvement or prohibition notice
- ❖ Withdraw or vary licence conditions or exemptions
- ❖ Issue a formal caution
- ❖ Prosecute or recommend prosecution



Health and safety offences are punishable in the criminal courts by fines or imprisonment



Information, Instruction and Training

One of the underlying causes of accidents is lack of training for employees and others who may be affected by work activities. Therefore, it is essential that employers provide well timed, good quality, appropriate and focused information, instruction and training for employees and others who are exposed to hazardous substances on,

- The risks to health created by such exposure
- The precautions that should be taken



Chapter 3

Health Problems

Around 10,000 people die each year from work-related ill health. Many of these deaths are due to exposure to substances hazardous to health.

The ability for hazardous substances to enter the body through different routes can lead to acute or long term illnesses or death.



Routes of Entry

- ❖ **Inhalation** – hazardous substance enter the body through breathing
- ❖ **Ingestion** – hazardous substance enter the body through swallowing
- ❖ **Absorption** – hazardous substance enter the body through direct contact with the skin, open wound or the eyes
- ❖ **Injection** – hazardous substance enter the body through penetration due to sharp objects



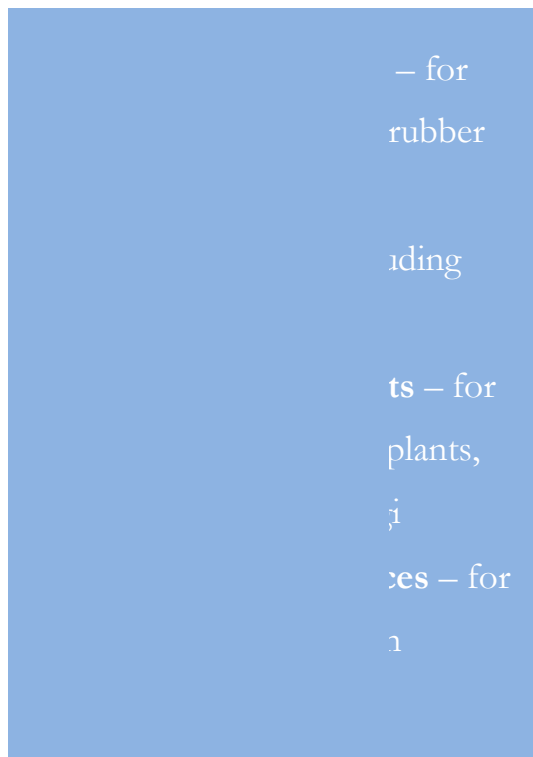
Health Effects

Exposure to substances hazardous to health can have the following health effects:

- **Acute** – short term (effects to health appear shortly after exposure)
- **Chronic** – long term (effects to health may take months/years to show after repeated exposure)
- **Intermediate**

Skin

Work-related Dermatitis, or inflammation of the skin, develops when the skin is exposed to:



Lungs

Damage to the lungs and respiratory system results from breathing in gases, fumes and fine dust particles. Respiratory sensitizers can have acute (Rhinitis, or Conjunctivitis) to chronic (Occupational Asthma) effects on the lungs.



Liver & Kidneys

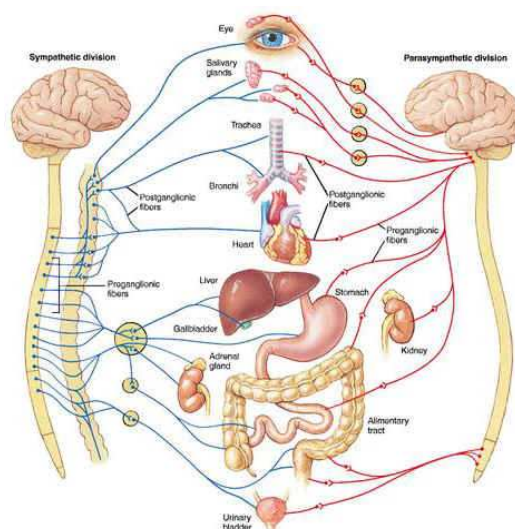
Damage to the liver and kidneys can occur when hazardous substances enter the blood stream and pass through these vital organs. The effects can be acute or chronic subject to the level of concentration in the blood stream or the span of exposure.



Nervous System

Damage to the nervous system can occur when the body is over exposed to certain hazardous substances (particularly carbon monoxide, methanol, organic solvents and petroleum derivatives like benzene).

While inhalation is the main route of entry, absorption through the skin or the eye, or ingestion can lead to serious effects.



Chapter 4

Identifying Hazardous Substances



To identify substances that are hazardous to health, we need to examine the work activities and find out what hazardous substances are in use.

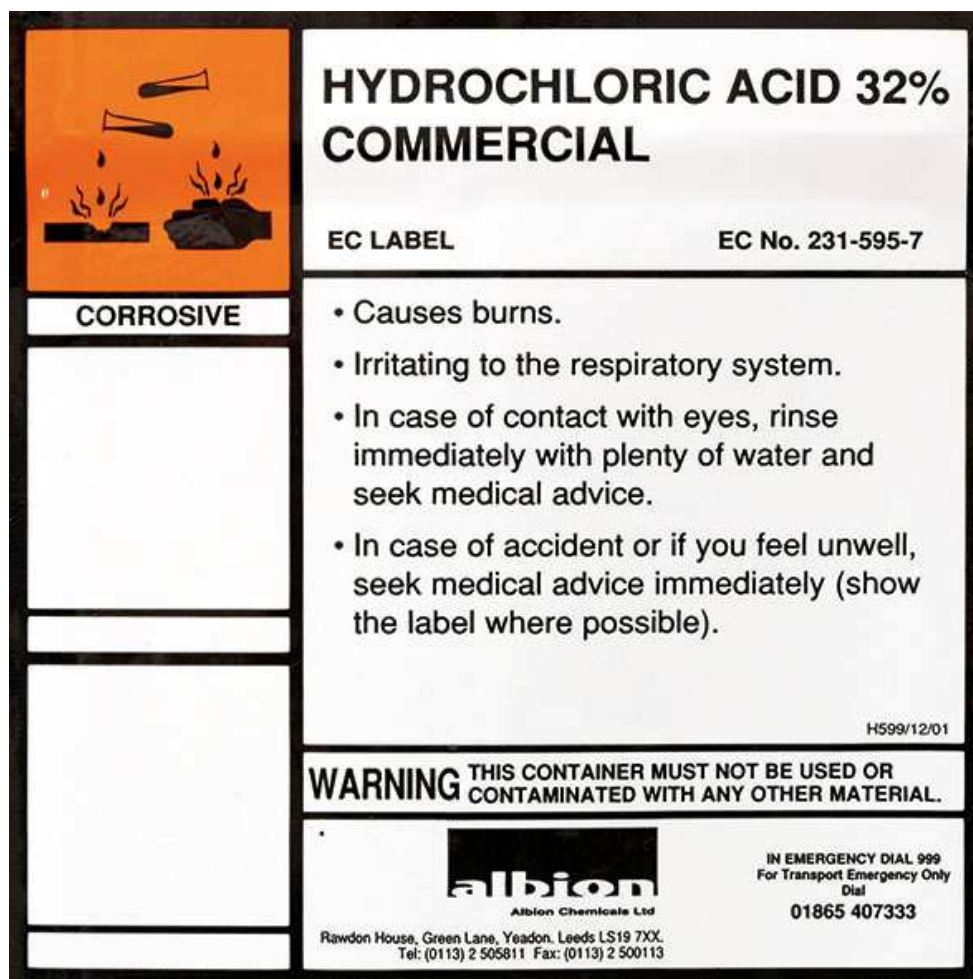
Other ways of identifying hazardous substances include:

- The Supply label
- The Safety Data Sheet (from manufacturers or suppliers)
- Industry information (from sources such as trade or professional associations)
- Publications (The HSE EH40/2005 – Workplace Exposure Limits, ACOPs)

Supply Label

The supply label should include the following details:





- ❖ The Supplier's full name, address and telephone number
- ❖ The substance scientific, commercial or common trade name, if it is a preparation.
- ❖ A description of the type of hazard that the substance poses (i.e. toxic, corrosive, etc.)
- ❖ The hazard symbols corresponding to the hazard type
- ❖ Warnings and safety advice (for proper use of the substance)

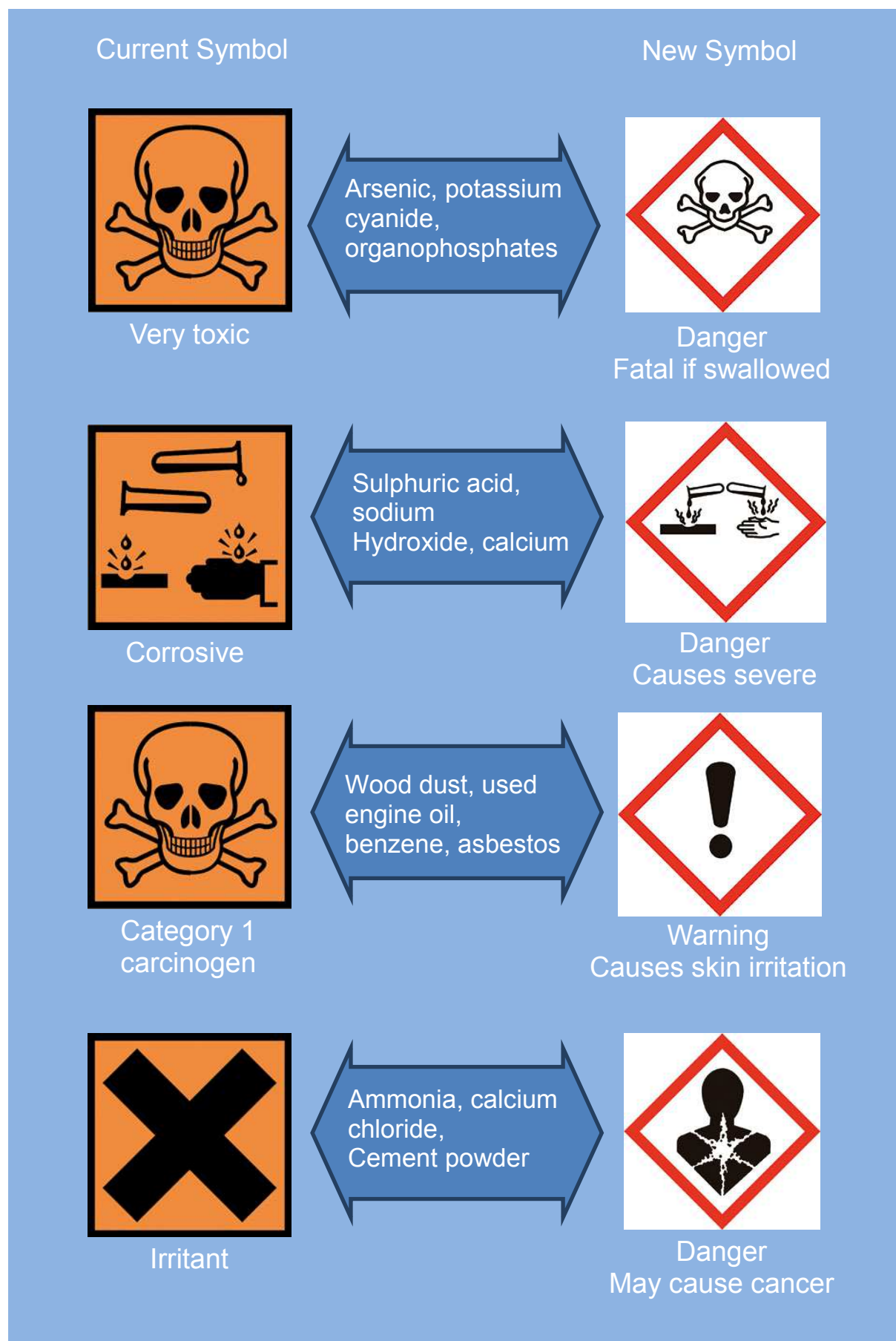


Symbols

Globally Harmonized System – GHS

Driven by the United Nations, GHS is an international classification system that is supposed to harmonize labelling and classification of chemicals according to their health, environmental and physical hazards.

Current Symbol	New Symbol
	
Harmful chemical	Danger May cause cancer
Current symbol	New symbol
	
Irritant	Warning Causes skin irritation



Safety Data Sheet

The Safety data sheet (SDS) is a document that **must** be provided by product manufacturers or suppliers under the law, to give vital information for using the product safely. Also known as material safety data sheets (MSDS), they can provide a great deal of information / advice towards a COSHH risk assessment.

The SDS consists of 16 sections with details on the substance's characteristics, properties and the correct handling procedure.

Employers have a duty to inform their employees of:

- ❖ The information about the health risks posed by
- ❖ The hazardous substances you use
- ❖ The measures you can take to minimise these risks

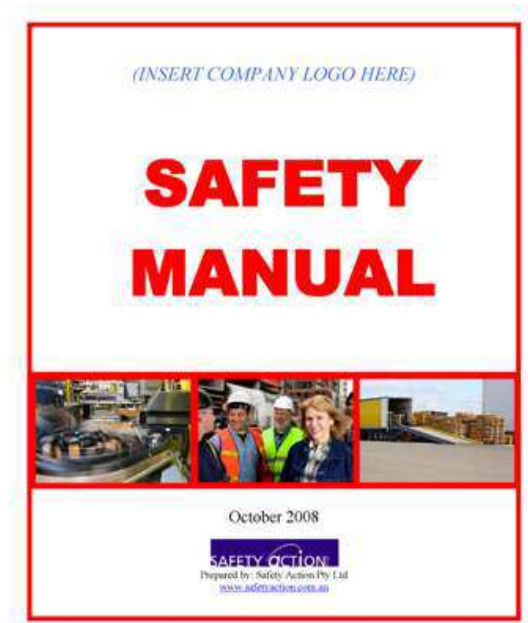


Employees have a duty to read this information

Emergency Procedures

An emergency procedure is a plan of action(s) detailing what needs to be done and by whom in case of an emergency in a particular workplace:

- It must be developed and implemented should there be a loss of control
- It should be appropriate to the types of hazardous substances in use
- Everyone should be prepared before an accident, incident or emergency occurs



Put your emergency procedure to the test to make sure it is effective, and to continuously improve it!

Chapter 5

Controlling Hazardous Substances

Employers must, by law, identify hazardous substances in the workplace, the risks embedded in dealing with them and place strict controls to eliminate these hazards or minimize the risks.

The first step in the process of control is to carry out a COSHH risk assessment. The Control of Substances Hazardous to Health Regulation (COSHH) 2002 (as amended) calls for employers to specifically conduct a COSHH Assessment.

COSHH Risk Assessment

A COSHH risk assessment involves the following steps:

1. Identify hazardous substances
2. Identify people at risk
3. Evaluate the risks
4. Determine control measures
5. Implement control measures and monitor effectiveness
6. Make arrangements to deal with accidents and emergencies
7. Record COSHH assessments
8. Review COSHH assessments

Employers are required to review the COSHH assessment,

1. Regularly on a set interval (six months, a year, ect.)
2. When a new substance is introduced to the workplace
3. Following an incident, or when the COSHH assessment is deemed invalid



Risk Evaluation

When identifying hazardous substances and evaluating their risks in a COSHH assessment there are certain criteria that should be considered:

- The hazards of the substance
- How the substance is to be used
- The quantity of substance used
- Length/frequency of exposure
- Number of people affected (individual risk factors)
- Potential harm
- Control measures
- Form of the substance



Identifying People at Risk

The next step following Hazard identification and risk evaluation is to identify the people who are likely to be affected:

- Operators
- Maintenance personnel
- Contractors
- Cleaners
- Visitors
- The public
- People sharing the workplace



Vulnerable groups

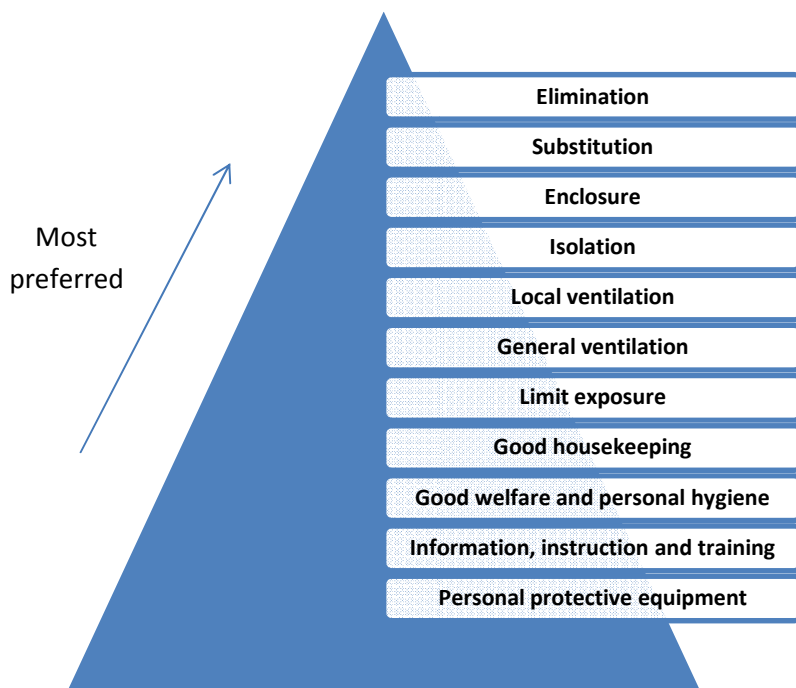
Certain people may be more at risk of hazardous substances than others, such as:

- young people
- pregnant women and nursing mothers
- people whose health is already compromised



Control Measures

The aim of the COSHH risk assessment is to eliminate or minimize the risks associated with exposure to harmful substances to an acceptable level by means of placing effective control measures. A system-based control methodology where measures are placed based on their scale of effectiveness is usually followed:



This system is known as the **Hierarchy of Control**.

Safe Systems of Work

Employers under COSHH regulations are required to monitor and maintain their safe systems of work. This is achieved through:

1. Maintaining control measures
2. Monitoring exposure
3. Carrying out health surveillance



Maintaining Control Measures

Employers must:

- Take all reasonable steps possible to ensure that everything provided for the protection of employees is used or applied properly as intended
- Ensure that control measures in place are maintained adequately and examined regularly
- Make sure safety equipment such as PPE are returned to its designated place

Employees must:

- Follow employer's/municipality's instructions for keeping safety equipment clean and in working order
- Report any defects in safety equipment to your supervisor
- Contribute as much information as is helpful to tests and examinations of safety equipment by others

Monitoring Exposure

Employers must:

- Check whether there are specific occupational exposure limits for substances used
- Monitor exposure if they are unsure whether control measures are working effectively
- Monitor exposure if failure or deterioration of control measures could result in serious ill-health
- Use an occupational health service/occupational hygiene consultant if monitoring cannot be carried out by company staff
- Keep a record of any monitoring carried out



Health surveillance

- Employers need to obtain the consent of workers before they take part in medical surveillance, preferably using a consent form
- where there is a known link between exposure and an adverse health effect, employers must keep a record of individual health surveillance results and must make them available to the persons concerned in a form that they can easily understand
- Workers should report any illness to their manager
- Workers should inform their doctor about the work they do and the substances or processes involved if they think it may affect their health



Authorized User

Persons who have been:

1. Appointed by the employer and
2. Given the necessary instruction and training to carry out a specific task safely



First Aid

The employer is required to provide an appropriate first-aid facility – appropriate for the:

- Workplace
- Workforce
- Tasks being carried out



Chapter 6

Sample examination questions



Level 2 Award in the Principles of COSHH Sample Examination Questions

1 An approved code of practice (ACOP) is a:

- A ☐ procedure that has been checked by an external safety consultant
- B ☐ system that can be used to investigate a dangerous incident
- C ☐ practical guide to help employers and employees comply with regulations
- D ☐ complete and authorised list of high-risk chemical suppliers

2 All purchased hazardous substances must be kept in their original containers and:

- A ☐ have safety labels and information
- B ☐ be kept in a locked cabinet
- C ☐ stored under refrigerated conditions
- D ☐ labelled with the date of receipt

3 The systematic monitoring of the health of an employee who may be exposed to harmful substances at work is called:

- A ☐ health auditing
- B ☐ health surveillance
- C ☐ health screening
- D ☐ health promotion

4 Elimination is the **best** way to control a hazardous chemical in the workplace because it:

- A ☐ turns the chemical into a solid if left at room temperature
- B ☐ removes the need for any other control measures
- C ☐ saves space on the safety data sheet for other information
- D ☐ means that it will be less concentrated and less harmful

5 An effect produced as a result of prolonged exposure to a hazardous substance is known as:

- A ☐ an acute effect
- B ☐ a local effect
- C ☐ a systemic effect
- D ☐ a chronic effect

6 COSHH assessments enable employers to decide:

- A ☐ which chemicals are most effective for which task
- B ☐ which chemicals must be bought in bulk
- C ☐ what measures are necessary to control risks
- D ☐ what measures can be taken to control costs

Notes

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