Warwickshire County Council

WORKBOOK

COSHH

The Control of Substances Hazardous to health, or COSHH, is a key piece of legislation keeping employees safe from hazardous chemicals. In this workbook we explore why these regulations are so important, the different ways substances can harm our bodies and how to spot what substances have what potential effect, as well as how to create a safer and more compliant work environment.

Let's get started

Contents

MODULE 1

The COSHH Regulations

In this module we will take a look at the COSHH regulations, what are they and why are they so important.

Let's get started ▶

TOPIC ONE

Introduction and objectives

What will be covered in this module? Find out here.

Introduction

The COSHH, or Control of Substances Hazardous to Health, regulations came into force in 2002.

COSHH law

Amended in 2002, COSHH requires employers, by law, to protect employees and other people from the hazards of substances used in their workplace.

You may be thinking — what has this got to do with me?

COSHH and you

Wherever you work, it is likely that you will encounter a range of substances. From cleaning supplies to specialised chemicals — these substances, whether alone, or mixed, have the potential to be harmful for your health.

Who needs to know about COSHH?

If you are in employment, an employer or self-employed, COSHH is something you need to know about.

Objectives

What will you be able to do by the end of this module?

- Understand what COSHH is
- Be aware of the importance of COSHH and what can happen if the regulations are not followed
- Enact an effective risk assessment of your workplace

TOPIC TWO

COSHH regulations

Let's learn what COSHH is and why it's important.

Importance of COSHH

Why do you think for a business it is important to comply with COSHH regulations?

a) To ensure risks associated with hazardous substances are minimised
b) To reduce instances of work-related illnesses and injury due to exposure to hazardous substances
c) To operate within health and safety law

Write all correct answers below.

How is it implemented?

COSHH is implemented when employers develop practices that prevent or control exposure to hazardous substances, and they inform and train staff on these procedures.

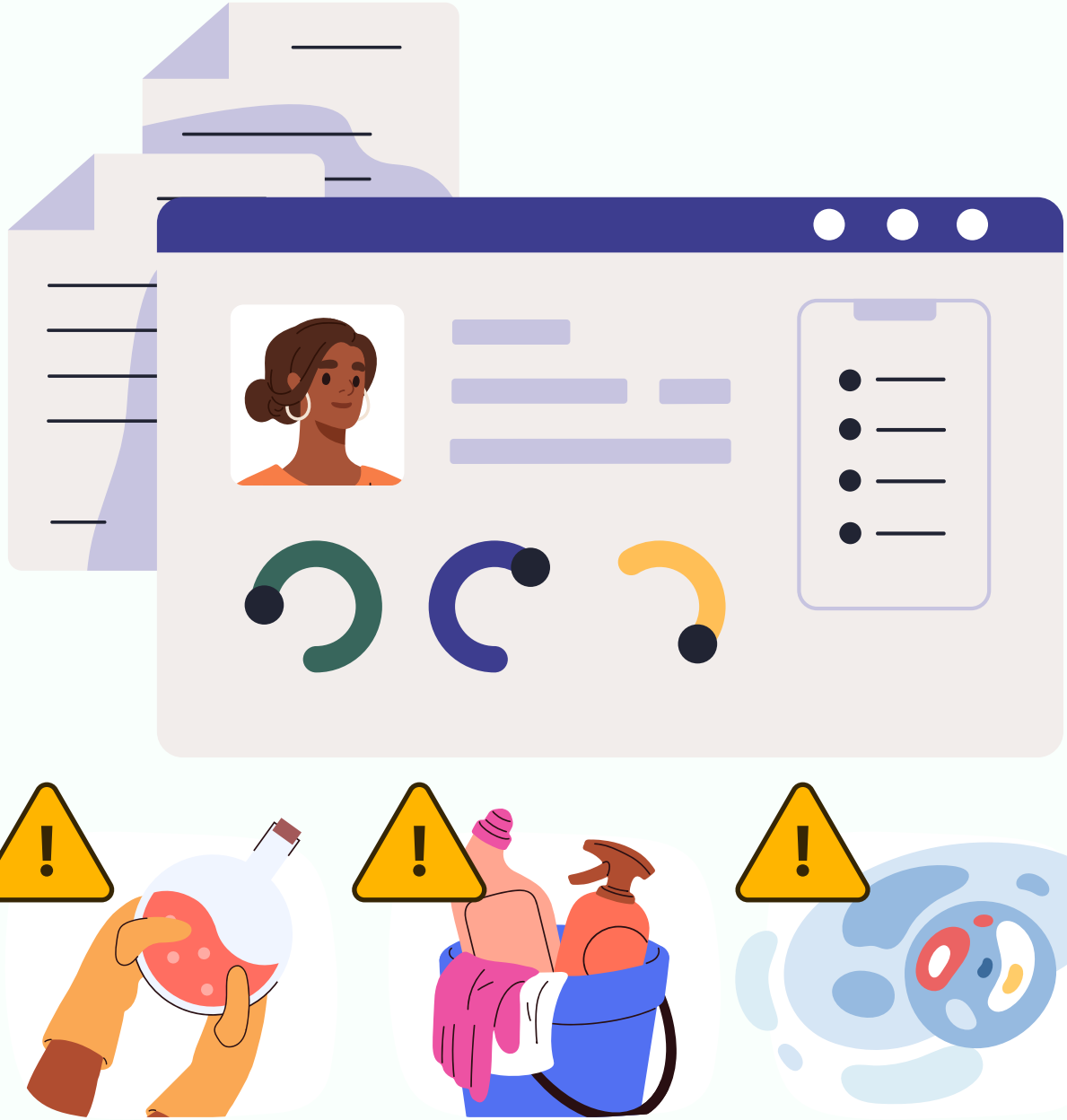
To help with this, all employers must carry out a suitable and sufficient risk assessment.

This needs to be documented if there are five or more employees, and these records should be accessible so that health and safety inspectors and safety representatives can examine them.

Risk assessment

The HSE doesn't provide a generic form to fill out, but it does provide guidance on how a good risk assessment should be carried out, using five steps.

To learn about these steps, turn to the next page.



Step 1 - Identify the hazards

Gather information about the hazardous properties of the substances used, and the work itself. Analyse what work practices create substances that are hazardous to health.

Step 2 - Assess the risk of harm

Specify what type of harm can occur and to whom.

Step 3 - Evaluate current practices and improvements needed

Find out what safety measures are in use and what measures still need to be put into place.

Step 4 - Recognise actions to complete

Decide when practical steps will be taken and by whom.

Step 5 - Decide on review dates

Reviews ensure that you are not sliding back and capture any significant changes in the work.

What happens when COSHH is not followed?

Let's look at what can happen when COSHH isn't followed.

Exposing staff to chemicals

In 2013, two companies in Flintshire were fined a total of £120,000 for exposing staff to dangerous chemicals. Two staff members exposed to methyl iodine without proper protection in place were left with serious lifelong complications. One of these staff members was Nigel Verdon, who was given a respiratory mask and boots but no further protection. When the gas leaked from the equipment and made contact with his skin, he suffered a seizure, and has been left with brain damage, mobility and speech difficulties and chronic pain.

Exposing others to chemicals

In 2017, a patient at Brighton and Sussex University Hospital died after she drank cleaning fluid from her bedside table, mistaking it for orange juice.

The Quality Care Commission visited the hospital afterwards and saw unattended cleaning trolleys as well as chemicals stored in unlocked utility rooms and kitchens. The hospital underwent a review of it's practices as a result. You can click here for more on this story.

Summary

Let's see what you have learnt during this topic.

- The COSHH Regulations are a UK statutory instrument created by the Secretary of State following submission by the Health and Safety Commission (HSC), now the Health and Safety Executive (HSE)
- The Regulations require employers to protect employees from the hazards of substances used in the workplace
- They are implemented with the development of procedures to prevent and control exposure
- A risk assessment must be carried out and made available to health inspectors when they visit
- Failure to meet COSHH Regulations can result in huge fines for the employer and the closure of organisations, as well as ill- health or even death for the employee

Flip to the next page to see the correct answers for this topic.

Module 1 - Question answer

Importance of COSHH

All of these answers are correct

The International Trade Union Confederation believes that thousands of people die each year from illnesses caused by exposure to workplace chemicals and dusts.
Following COSHH procedures in your workplace means that you comply with the law and take meaningful steps to reduce work-related ill health.

MODULE 2

Substances hazardous to health

Now that we know what COSHH is, it's important we cover what health risks we could be facing if it's not followed correctly. In this module we'll look at what substances aren't covered by COSHH and how to visually recognise the kind of hazard a substance poses.

Let's get started ▶

TOPIC ONE

Introduction and objectives

What will be covered in this module? Find out here.

Introduction

In this course we cover the Control of Substances Hazardous to Health, but what is a substance hazardous to health? Let's find out.

According to COSHH, a substance is classified as 'hazardous to health' when its damaging effect on the human body falls into one of five categories.

The categories are very toxic, toxic, harmful, corrosive, or irritant. It can include chemicals, or products containing chemicals, and biological agents (germs that cause diseases).

In this module we will learn about the forms these chemicals can take, what harmful substances aren't covered by COSHH and how to appropriately label any substances.

Objectives

What will you be able to do by the end of this module?

- Know what health complications hazardous chemicals can cause
- Learn what COSHH does and doesn't cover
- Recognise the Classification, Labelling and Packaging of Chemicals (CLP) regulation symbols

TOPIC TWO

Hazardous substances

In this topic we'll look at the damage hazardous substances can cause and how to recognise these through warning symbols.

Hazardous substances

What are the kinds of hazardous substances we need to be aware of?

- Liquids and solids
- Nanotechnology (we use nanomaterials in a wide range of electronic devices like smartphones, laptops and televisions)
- Fumes
- Dusts
- Vapours
- Gases (including asphyxiating gases)

Exposure can happen to any of these substances through breathing, swallowing, contact with the skin or injection into skin. It's also important to know that some of these substances can be 'process generated', such as fumes from mixing chemicals. It may be the process of handling them or working with them that turns them into being harmful.

Consequences of exposure

Employees can use substances hazardous to health in the everyday operation of their work, substances may also arise as a by-product of working practices.

Here are some common short- term and long -term consequences of being exposed to toxic, corrosive, or irritant chemicals.

Skin

Burns, scalds, itchiness of the skin, contact dermatitis

Brain

Headaches, light-headedness, dizziness, brain damage

Internal organs

Poisoning, sickness, nausea, liver damage

Eyes

Eye irritation, temporary loss of vision, blindness

Lungs

Coughing, respiratory tract irritation, breathlessness, asthma

Other issues

Other conditions such as cancer and Legionnaires' disease

Substances COSHH doesn't cover

Some substances aren't covered by COSHH, which of the below do you think these might be?

a) Lead
b) Radioactive substances
c) Asbestos
d) Biological agents (germs)

Write all correct answers below.

CLP

The European Regulation on the Classification, Labelling and Packaging of Chemicals is known as the CLP. Its purpose is for everyone to classify, label and package chemicals properly, in order to prevent harm or mistakes. The CLP is based on the United Nations Globally Harmonised System (GHS), which does the same thing but globally.

CLP regulations symbols

Substances and mixtures must be classified, labelled, and packaged appropriately for safe use. By using pictograms, which are like warning signs on the labelling and packaging of products, we can see which substances and mixtures are hazardous, and how they are hazardous.

Toxic
Acute toxicity, very toxic (fatal), toxic etc.

Gas under pressure
The gas cylinder shows it's a gas under pressure.

Oxidising
The flame over the circle shows oxidising gases, liquids or solids.

Environment
The dead tree and fish demonstrate that the chemical is harmful to the environment.

Respiratory hazard
Respiratory sensitiser, mutagen, carcinogen, reproductive toxicity, systemic target organ toxicity, aspiration hazard.

Explosive
The exploding bomb shows the substance is explosive, self-reactive, organic peroxide.

Flammable
Flammable gases, liquids, solids, or aerosols, organic peroxides, self-reactive, pyrophoric, self-heating, contact with water emits flammable gas.

Hazard
Health hazard or hazardous to the ozone layer.

Corrosive
Corrosive (causes severe skin burns and eye damage) and serious eye damage.

Summary

Let's see what you have learnt during this topic.

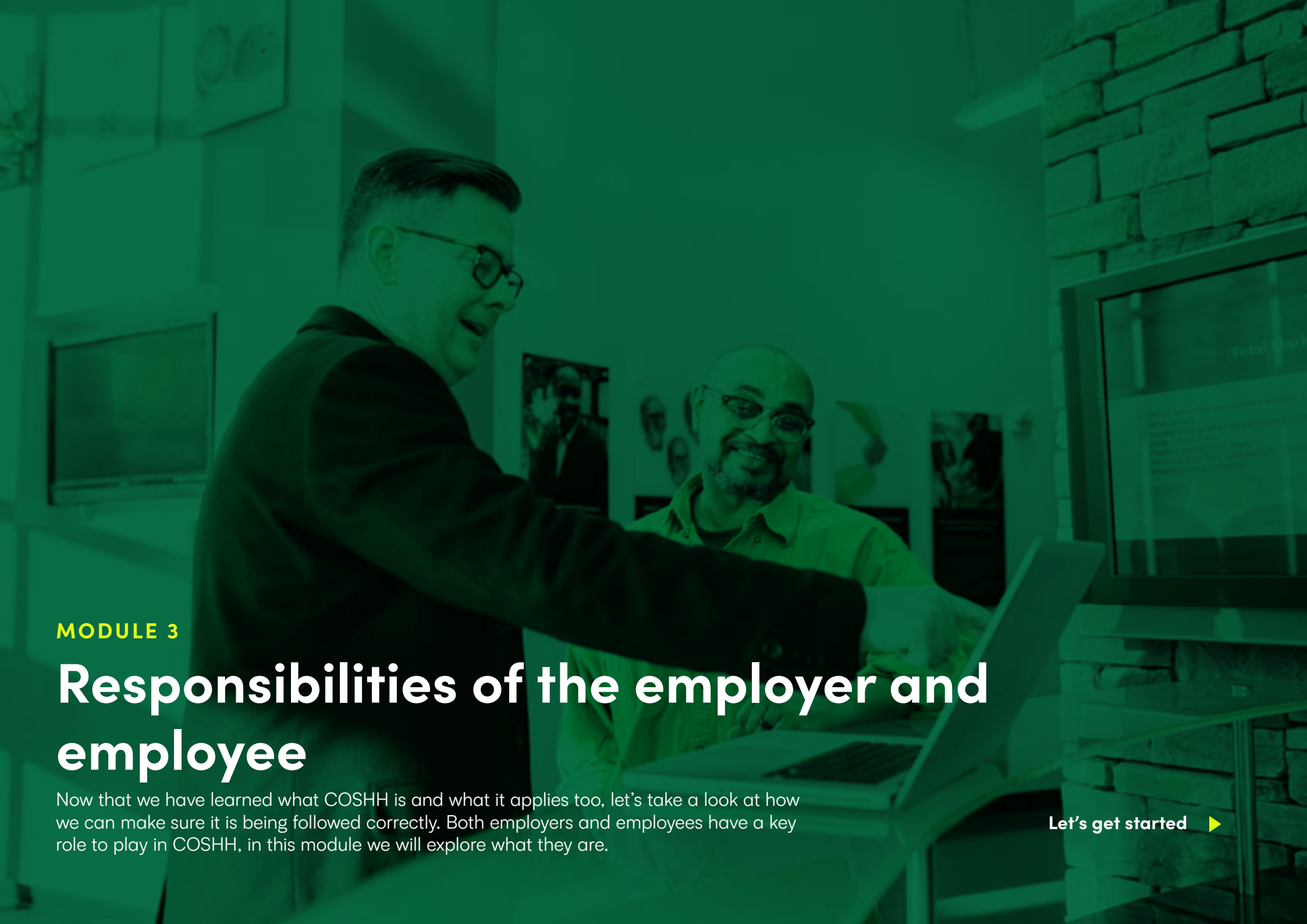
- A substance hazardous to health includes substances that have an indication of danger as very toxic, toxic, harmful, corrosive or irritant
- These substances come in many forms such as liquids, solids, nanotechnology, fumes, dusts, vapours, mists, and gases
- You can be exposed by breathing or swallowing, or through contact with or injection into the skin
- Short term consequences of exposure can include burns, nausea and eye irritation, and long-term consequences of certain substances could include brain damage and cancer
- Substances hazardous to health should be classified, packaged and labelled appropriately with one or more of the CLP Regulation's pictograms

Flip to the next page to see the correct answers for this topic.

Module 2 - Question answer

Substances COSHH doesn't cover

The first three are correct.
Lead, asbestos and radioactive materials are all extremely harmful to health, they are each covered by their own specific regulations. They are not covered by COSHH, as a result.



MODULE 3

Responsibilities of the employer and employee

Now that we have learned what COSHH is and what it applies too, let's take a look at how we can make sure it is being followed correctly. Both employers and employees have a key role to play in COSHH, in this module we will explore what they are.

Let's get started

TOPIC ONE

Introduction and objectives

What will be covered in this module? Find out here.

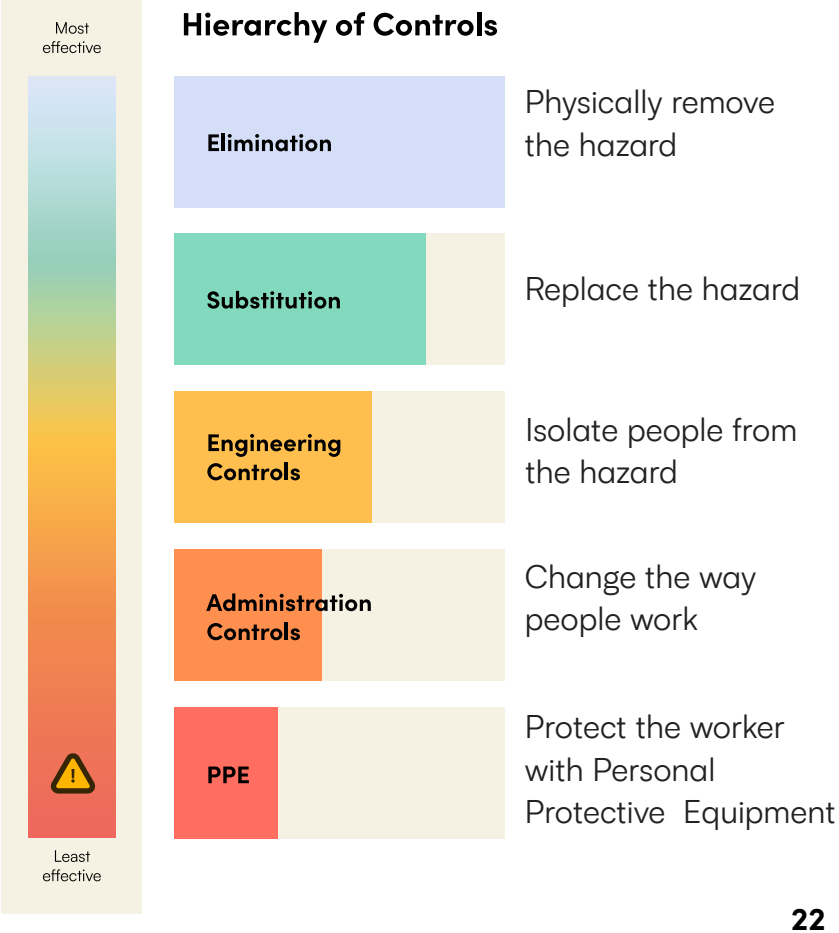
Introduction

In this module we'll look at the main responsibilities from employers and employees with putting COSHH guidance into place. But where is the key place to start?

Creating practices to prevent or limit exposure to harmful substances is the most important part of COSHH. If you work with a hazardous substance, you can try eliminating the substance from your workplace, or avoid the procedure which causes exposure.

You can try substituting it for another less hazardous substance or working practice. Or you can choose to enclose the substance or process in a closed system. As a last resort, you can change the way your staff work or implement PPE. As a rule, you should always try to eliminate the hazardous substance first.

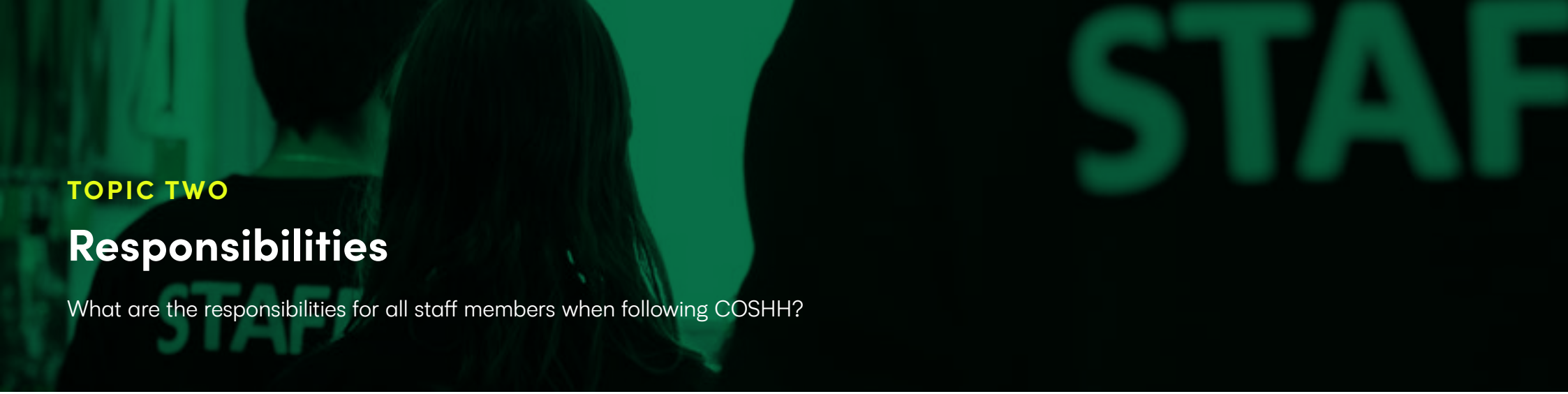
In this module we will look at ways employers can gather the information they need, put practices in place and then review those practices.



Objectives

What will you be able to do by the end of this course?

- Understand how employers gather information before completing a risk assessment
- Confirm what control measures have been put into place
- Know how to maintain, monitor and review handling of substances hazardous to health



TOPIC TWO

Responsibilities

What are the responsibilities for all staff members when following COSHH?

Identifying risks

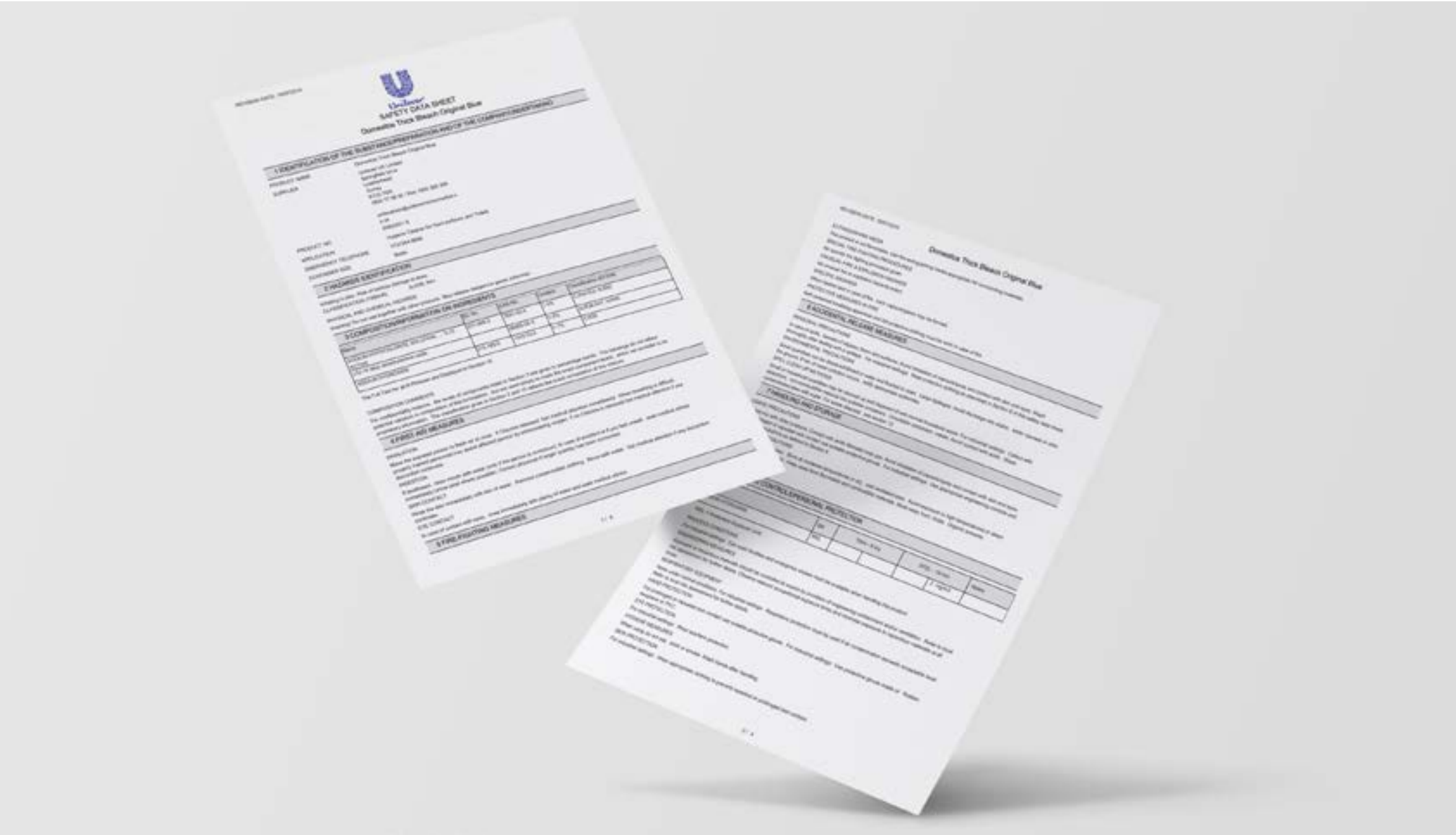
As a refresher, how should risks from substances hazardous to health be identified in the workplace?

a) Employees should spot and report risks
b) The Health and Safety Executive should catalogue risks
c) The employer should carry out a risk assessment

Write all correct answers below.

CLP regulations symbols

Substances and mixtures must be classified, labelled, and packaged appropriately for safe use. By using pictograms, which are like warning signs on the labelling and packaging of products, we can see which substances and mixtures are hazardous, and how they are hazardous.



Hazards
The hazardous properties of the substance.

HAZARDS IDENTIFICATION

Irritating to skin. Risk of serious damage to eyes.
CLASSIFICATION (1999/45) Xi,R38, R41.
PHYSICAL AND CHEMICAL HAZARDS
Warning! Do not use together with other products. May release dangerous gases (chlorine).

Health
Health effects associated with the substance's use.

FIRST-AID MEASURES

INHALATION
Move the exposed person to fresh air at once. If Chlorine released; Get medical attention immediately! When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If no Chlorine is released get medical attention if any discomfort continues.

INGESTION
If swallowed, rinse mouth with water (only if the person is conscious). In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Contact physician if larger quantity has been consumed.

SKIN CONTACT
Rinse the skin immediately with lots of water. Remove contaminated clothing. Rinse with water. Get medical attention if any discomfort continues.

EYE CONTACT
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Handling
Handling, storage and transportation guidance.

HANDLING AND STORAGE

USAGE PRECAUTIONS
Do not mix with other products. Contact with acids liberates toxic gas. Avoid inhalation of vapours / spray and contact with skin and eyes. For prolonged or repeated skin contact use suitable protective gloves. For industrial settings: Use appropriate engineering controls and personal precautions as defined in Section 8.

STORAGE PRECAUTIONS
Keep in original container. Store at moderate temperatures in dry, well ventilated area. Avoid exposure to high temperatures or direct sunlight. Oxidising material - keep away from flammable and combustible materials. Store away from: Acids, Organic solvents.

STORAGE CLASS
Unspecified storage

It is important to remember that once employers have identified risks to employee health, they have a duty to inform, instruct, and train all their staff members accordingly.

Development and implement of control measures – scenario one

As we have already discussed, employers should first start by eliminating a hazardous substance and if that is impossible the next step is to try substituting it or enclosing it.

Let's look at two scenarios...

A leisure centre pool swaps difficult to pour chlorine liquid for tablets, what do we think this is?

a) Substitute
b) Eliminate
c) Contain

Write your answer below.

Development and implement of control measures – scenario two

Staff at a hospital come into contact with biological material through used needles. They dispose of these in a sharps bin.

Which control measure is this?

a) Substitute
b) Enclose
c) Eliminate

Write your answer below.

Control measures

Employers can protect their employees from exposure to harmful substances by...

- Altering procedures (ways of working)
- Providing control equipment, such as engineering equipment and personal protective equipment (PPE)
- Changing worker behaviour, for example, making sure workers are following safety procedures

Ryan

Ryan works at a Materials Recycling Facility where he operates machinery that generates dust containing bacteria and endotoxins.
A recent risk assessment concluded that Ryan and his colleagues are exposed to dust above the level where it is considered a substance hazardous to health.
His employer has installed additional Local Exhaust Ventilation to control inhalation exposure to these substances.
What kind of control measure do you think this is?

a) A change to work procedure

b) A change to worker behaviour

c) Provision of engineering equipment

Write your answer below.

Maintain, monitor, and review exposure

Further to implementing control measures, employers must monitor them.

Monitoring will show you whether control equipment, procedures, behaviour and PPE are adequate.

If a workplace uses substances which are associated with certain diseases, then employers are required by law to carry out health surveillance.

Health surveillance protects the health of employees by detecting adverse changes or disease early on.

Employers must use a qualified occupational health service physician to carry out assessments at regular planned intervals.

Summary

Let's see what you have learnt during this topic.

- Health surveillance must be carried out on employees if they are regularly exposed to hazardous substances in their everyday work, which are associated with certain diseases
- The five methods of protecting employees against exposure are elimination, substitution, engineering controls, administrative controls and PPE
- Employers must regularly monitor control measures after implementing them
- Safety Data Sheets contain information on how to handle and store substances, and employers should collect these for every product used in the workplace

Flip to the next page to see the correct answers for this topic.

Module 3 - Question answers

Identifying risks

The answer is the employer should carry our risk assessment.

In every workplace, the employer is responsible for completing a COSHH risk assessment.
Risk assessments vary in their complexity, but all should cover:
• What the risks are
• Who might be harmed
• What control measures could prevent harm, and
• How these measures will be used.

Development and implement of control measures – scenario one

The answer is substituting.

This would be substituting, as it's swapping the liquid chlorine that is potentially dangerous for more controlled tablets.

Development and implement of control measures – scenario two

The answer is enclose.

This is enclosing the material to prevent it from coming into contact with anyone or anything that it could harm.

Ryan

The answer is provision of engineering equipment.

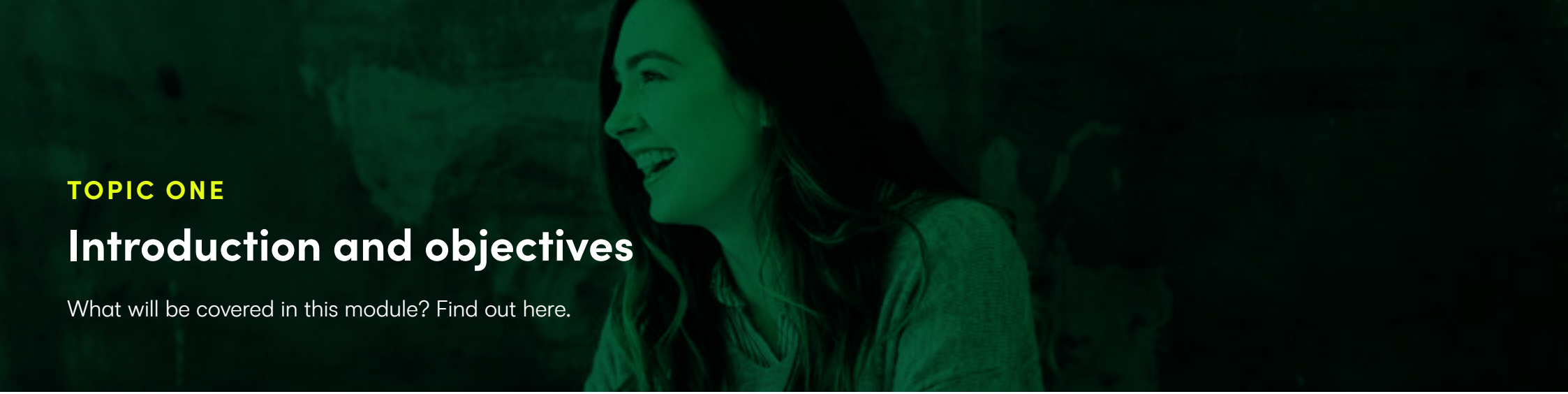
Local Exhaust Ventilation (LEV) is a type of control equipment that is commonly used in workplaces such as workshops and garages.
At the recycling site, Ryan's employer can also reduce exposure to dusts by decreasing the length of workers' shifts (a change to work procedure) and by providing them with respirator filtering devices (respiratory protective equipment; RPE).

MODULE 4

Good Practice in the Workplace

In previous modules we have examined what COSHH is and how to implement it, in this final module we will look at best practice ways for us all to follow COSHH guidelines at work and how to raise concerns if we think the protections in place in your workplace aren't stringent enough.

Let's get started



TOPIC ONE

Introduction and objectives

What will be covered in this module? Find out here.

Introduction

It is the requirement of all staff members and employees to work responsibly under the COSHH guidelines. In order to make effective COSHH as clear as possible, the HSE outlines eight principles of good practice in the control of substances hazardous to health.

They are:
1. Minimise emission, release and spread
2. Consider routes of exposure
3. Choose control measures proportionate to the risk
4. Choose effective control options
5. Personal protective equipment
6. Review the effectiveness of controls
7. Provide information and training
8. New measures, new risks

Objectives

What will you be able to do by the end of this module?

- Know the eight principles of good practice
- Understand our personal roles and responsibilities keeping our workplaces safe under COSHH
- Recognise and articulate how to report any concerns about COSHH compliance

TOPIC TWO

Good practice in the workplace

How can you employ best practice in your workplace and what to do if you see an area needing improvement.

Emergencies

Good practice can also mean co-operating with your manager and following the safety rules that are instated in your workplace.

Despite our best efforts, accidents do happen, so all workplaces must devise plans to cope with any foreseeable incidences. What emergency plans do you think every workplace should have?

a) Appropriate first aid equipment
b) Procedures to help a casualty
c) Trained people to take action
d) Arrangements to deal with the waste created

Write all correct answers below.

COSHH involves considering how substances can enter the human body (routes of exposure) and why this might happen, choosing effective control measures, providing training and information to staff, and reviewing the effectiveness of controls.

Following COSHH is the responsibility of employers, employees as well as those who are self- employed or freelance workers.

Questions or concerns

If you have questions or concerns about any area of COSHH, there are several people that you can approach.

Manager
In the first instance you should talk to your manager.

Safety representative
If they can't help, try your safety representative, or the company health and safety manager.

HSE
When a problem can't be solved in-house, or if you are self-employed, you can contact the Health and Safety Executive.

New measures, new risks

Like the final COSHH principle ‘new measure, new risks’, when a workplace establishes a new control measure, such as different PPE or a new working procedure, it is very important to check that this doesn’t bring about additional risks.

Example

A company introduces a brand of single-use powdered gloves that contain hazardous NRL proteins.

The latex gloves were supplied with the intention of protecting workers’ hands; however, NRL proteins can leach out of this material and cause harm by inhalation and skin exposure.

Summary

Let's see what you have learnt during this topic.

- There are eight principles of good practice in the control of substances hazardous to health
- Employers must minimise substance use, consider routes of exposure, choose appropriate control measures, choose effective control options, instate PPE, review controls, provide information, and consider risks of new controls
- Employees must take responsibility for their own health and co-operate with all safety rules set out by their organisation
- Every workplace must have comprehensive emergency plans in place when using or creating hazardous substances
- Any queries about COSHH should be first directed to line managers, then to the health and safety representative or manager, and the HSE can also offer guidance

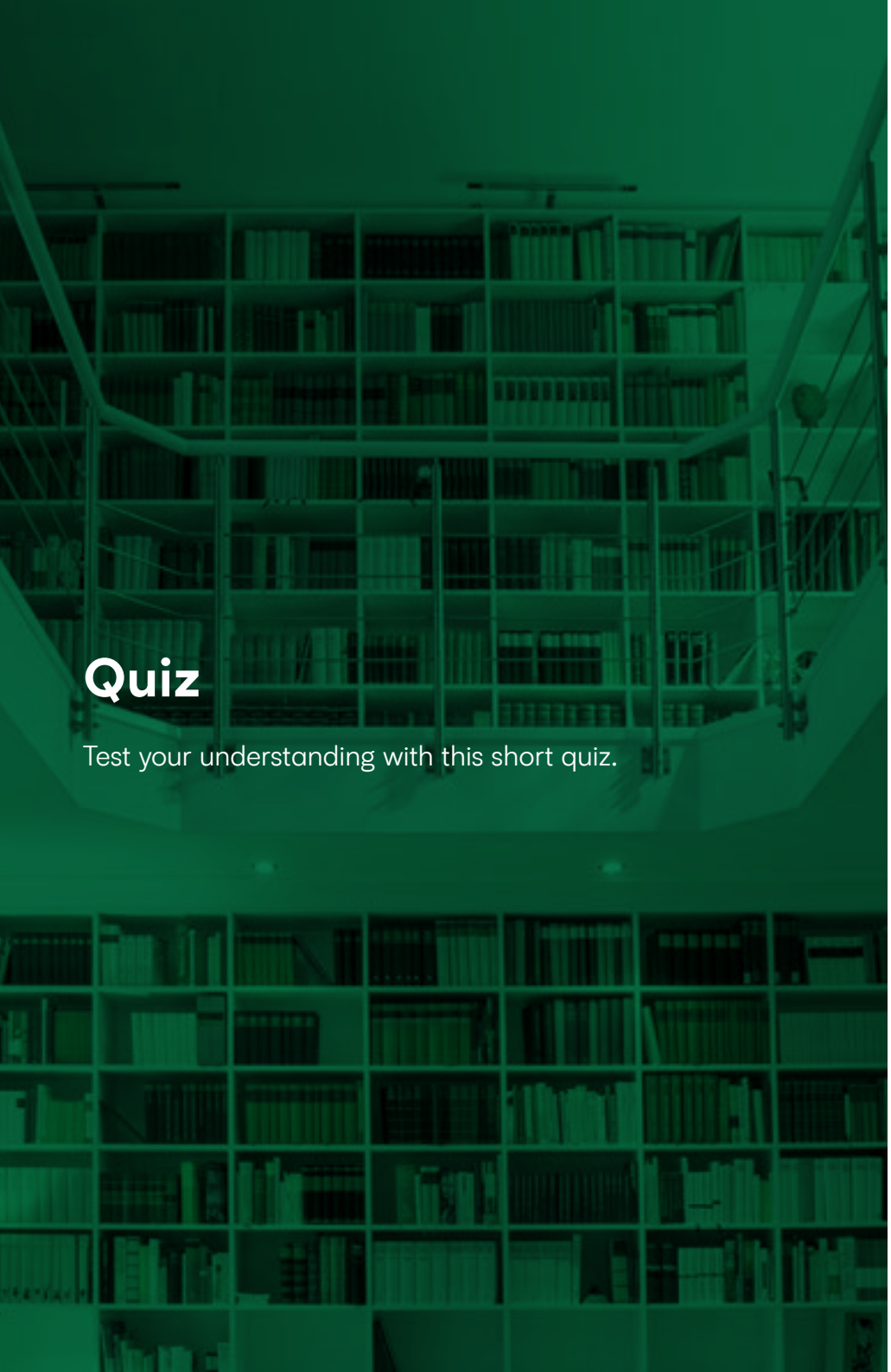
Flip to the next page to see the correct answers for this topic.

Module 4 - Question answer

Emergencies

All of these answers are correct

As well as these, employers must think about how they would make such information available to the emergency services. Everybody in the workplace needs to be aware of emergency plans. Neutralising and first aid materials should be easily accessible for everyone.



Quiz

Test your understanding with this short quiz.

Question 1

What does COSHH stand for?
a) Control of Substances Harmful to Health
b) Control of Substances Hazardous to Health
c) Containment of Substances Hurtful to Humans

Write your answer below.

Question 2

COSHH regulations state that employers should be aware of asbestos in their workplace and take measures to control employee exposure to it.
Is this statement true or false?

Write your answer below.

Question 3

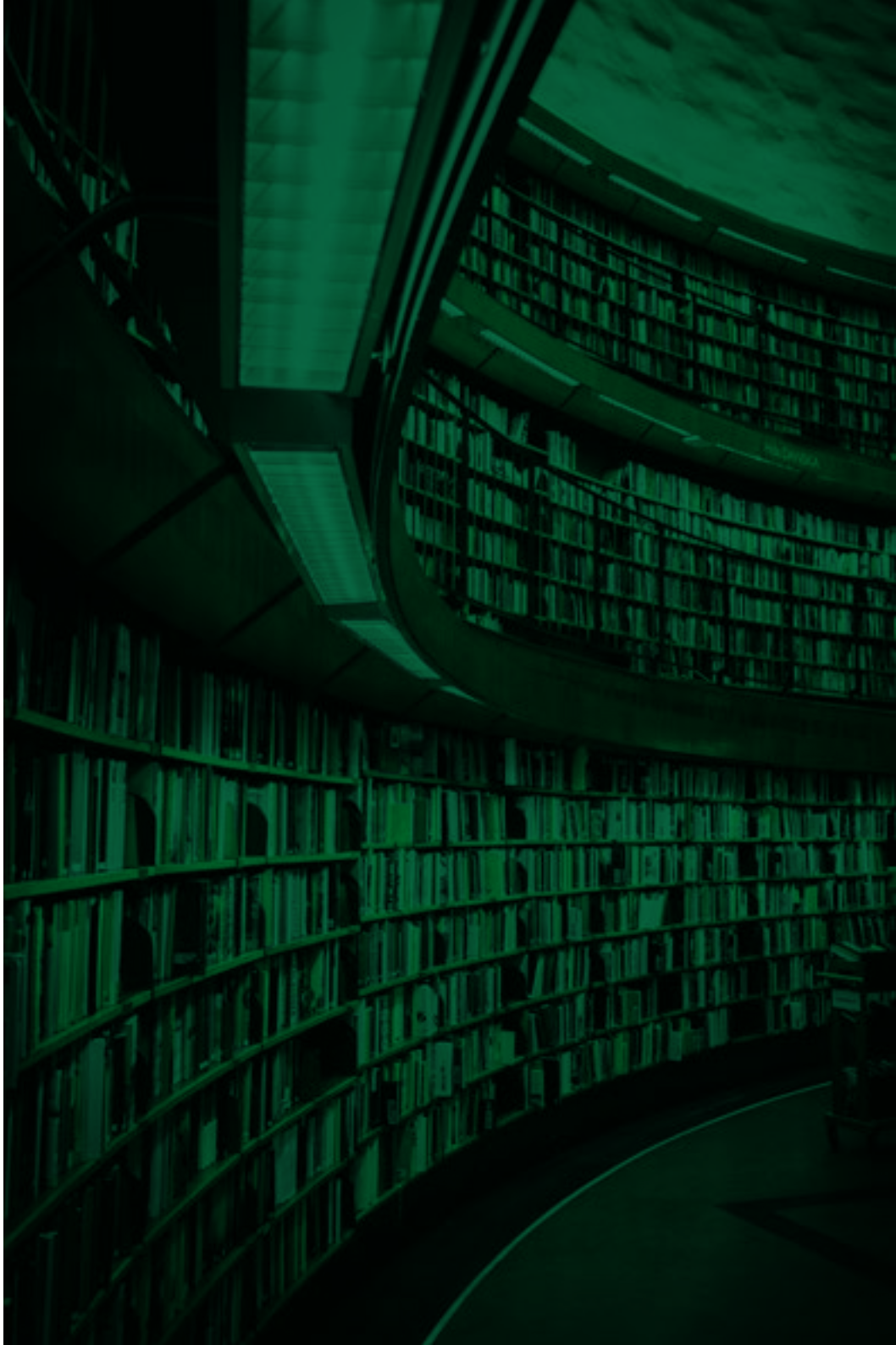
An employer should gather together Safety Data Sheets for all the substances in their workplace that are considered hazardous to health of their employees.
Is this statement true or false?

Write your answer below.

Question 4

There are eight principles for good COSHH practice, all revolving around the need to minimise the emission, release and spread of substances hazardous to health.
Is this statement true or false?

Write your answer below.



POST-ASSESSMENT

Answers and feedback

Find out how well you did!

Question 1

b) - COSHH Stands for the Control of Substances Hazardous to Health.

Question 2

False - Asbestos, lead, and radioactive substances have their own guidelines when it comes to use in the workplace. Biological agents (germs) are covered by COSHH when they are used in high amounts in certain industries and workplaces, for example, a laboratory.

Question 3

True - Safety Data Sheets (SDSs) hold crucial information about the substance they describe, such as what risk reduction measures should be taken to control exposure, and what first aid is needed for over-exposure.
It is important to remember that having been created by the product's supplier, an SDS is not specific to each workplace that it is used in.

Question 4

True - Here are the eight principles:
1. Minimise emission, release and spread
2. Consider routes of exposure
3. Choose control measures proportionate to the risk
4. Choose effective control options
5. Personal protective equipment
6. Review the effectiveness of controls
7. Provide information and training
8. New measures, new risks

ADDITIONAL INFO

Resources

Additional guidance and information.

HSE Managing risks and risk assessment at work

An overview on risks and risk assessments at.

The Classification, Labelling and Packaging of Chemicals

Official GOV legislation.


Warwickshire
County Council