



Control of Substances Hazardous to Health

A TUC SHORT COURSE

Third edition: March 2006

Health and Safety Update – A TUC Short Course

Your name

Address

Tel _____

E-mail _____

Union _____

Workplace _____

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Publisher's note

1. TUC Education has done its best to ensure that all legal references and extracts quoted in these short course materials were accurate at the time of writing. However, health and safety law and practice are evolving all the time and participants should not rely on these materials as an authoritative statement or interpretation of health and safety law. If you are in any doubt about where you stand legally, seek the advice of your trade union, the Health and Safety Executive or a qualified legal professional.
2. Throughout these course materials there are many references to useful web pages. Although all links were checked for accuracy some may expire over the life of this edition. In such instances participants may be able to find the information they need by going to the root website and navigating from there.

Acknowledgements

- The TUC COSHH course materials have been updated for TUC Education by Peter Kirby. In updating these materials Peter has drawn upon previous editions of the COSHH course, TUC health and safety material and other sources acknowledged below
- The use of materials from the HSE website, COSHH Essentials and a Brief Guide to the COSHH Regulations (INDG136rev3)
- TUC gratefully acknowledges the work of tutors and safety reps who contributed to the first edition of these materials

Pre-Course Activity

We want to ensure that the TUC COSHH course you will be attending is useful for you and your members. Please try and take some time before the course to make a note of:

- your members' awareness, and main concerns about hazardous substances at work
- any successes you or your union has had in dealing with hazardous substances at work
- problems your union has had in dealing with hazardous substances at work
- employer/management action on implementing the Control of Substances Hazardous to Health Regulations
- whether the HSE publication, COSHH Essentials (HSG193); or the online COSHH essentials (www.coshh-essentials.org.uk) are being used by your employer/management in your workplace

Also try to bring along the following documents:

- information about any hazardous substances your members work with, or come into contact with
- management policies, plans, risk assessments on hazardous substances
- a chemical safety data sheet from your workplace
- any information you have had from your union on COSHH

Don't worry if you cannot get hold of all the information: you will still benefit from this course.

Activity INTRODUCTIONS

AIMS

To help us to:

- “break the ice”
- find out who is on the course
- agree aims for the course

TASK

Briefly interview someone else on the course (if possible, someone you don't already know).

Find out their:

- ✓ name
- ✓ trade union
- ✓ workplace and job
- ✓ members' jobs
- ✓ previous health and safety courses they have been on
- ✓ reasons for coming on the course
- ✓ any particular concerns about hazardous substances

They will then interview you.

REPORT BACK

You will be asked to introduce the other person to the rest of the group.

How the course will work

Those of you who have attended TUC courses before know that they aim to be practical and to help you develop your knowledge, confidence and skills. The TUC COSHH course follows the same principles which include:

- Learning by doing - you learn far more by doing something yourself
- Collective work - work in small groups with regular reporting back
- Action at work - close links between you and your members
- Work on real problems – hazards, experiences and problems faced by members of the course
- Activities - specific tasks that you and other course participants undertake during the course
- Course file - a record of your work on the course. This is useful for a future reference point back at your workplace, and accreditation purposes

What is new about COSHH?

Many trade union health and safety reps are familiar with the principles underlining the Control of Substances Hazardous to Health (COSHH) Regulations. After all, the original COSHH Regulations 1988 came into force in October 1989. They have been re-enacted and amended many times since then. The COSHH Regulations 2002 revoked and replaced the 1999 COSHH Regulations. Subsequently, there have been COSHH Amendment Regulations passed in 2003 and 2004. The latest amendments came into force on 6th April 2005.

However, don't worry if you are a health and safety representative who does not have any knowledge or experience of COSHH. We will be looking at the Regulations and their implications in detail during this course. The basic principles of COSHH are quite straightforward.

Course aims

You will have an opportunity to comment on the course aims and sample programme which are reproduced below. They are based upon the TUC's assessment of the needs of health and safety representatives. Your tutor will also draw your attention to the learning outcomes and assessment criteria for the course that has been accredited by the National Open College Network.

The course should help trade union health and safety representatives to:

- understand health and safety risks from hazardous substances in the workplace
- understand the Control of Substances Hazardous to Health Regulations (as amended) and HSE COSHH Essentials
- specify action needed to take up problems involving hazardous substances

Course programme

The course can be organised in a variety of ways. For example, it can be run as a three day course using the example programme on the page below.

Example of a 3 day course programme

	PRE-COURSE SURVEY		
DAY	AM	PM	
1	STARTING THE COURSE <ul style="list-style-type: none"> • Introductions and aims • How the course will work REVIEWING EXPERIENCE AN INTRODUCTION TO COSHH	TRADE UNION APPROACH TO COSHH PLANNING A COSHH INSPECTION	WORKPLACE ACTIVITY COSHH inspection
2	SHARING COSHH INSPECTION EXPERIENCES TACKLING HAZARDS USING COSHH	USING COSHH ESSENTIALS PREPARATION FOR WORKPLACE ACTIVITY	WORKPLACE ACTIVITY Risk assessments
3	EVALUATING COSHH ASSESSMENTS UNDERSTANDING EH 40 – And the new Workplace Exposure Limits (WELs)	A COSHH QUIZ YOUR UNION STRATEGY ON COSHH FURTHER TRAINING COURSE EVALUATION ACCREDITATION	<ul style="list-style-type: none"> • Report back to members, unions & employer • Action in the workplace • Further training

Course guidelines

Equal opportunities are an integral feature of any TUC course. It is important that we identify rules for the course that incorporate equal opportunities principles. Your tutor will ensure that course guidelines are set collectively by the course participants.

Jargon list

During the course you might come across terms that you are unfamiliar with. It is useful to keep a jargon list so that people can check what words, phrases and abbreviations mean or what they stand for. If anyone (including the tutor) uses a word, phrase or abbreviation you are not familiar with then say so. The word, phrase or abbreviation and the meaning can then be written on the jargon list.

Your tutor's role

Some of the things your tutor will be doing are:

- helping to organise the work, by suggesting tasks and ways of working

- organising resources, including basic information, internet access where possible, publications, and photocopying facilities, to help the course work
- giving advice and support
- leading some discussions and summarising key points
- giving guidance on the preparation of work for accreditation

Record of achievement

If you have previously attended a TUC Course, you will be familiar with accreditation of your learning by the National Open College Network. If you have not, your tutor will explain the basic principles.

An Achievement Record for the COSHH course is provided below. Your course file will normally contain the evidence of your learning.

Action at work

As the course is a practical one, there will be a number of matters that arise where you will need to take some action at work and in your union. It is useful to keep a record of what needs to be done, and when you need to do it.

Progression

As a trained and experienced safety rep you will be skilled and valued by your members. Good employers will appreciate a safety rep who knows what they are doing and can represent members effectively. But your training and development needs won't stop at the end of this short course. And so as a part of your action planning at the end of the course, you will have the opportunity to think about what you need to do after the course has finished. Your tutor will give you details of other TUC core and short courses.

NAME _____

UNIT TITLE: COSHH (3 (10 hour) credits)

LEARNING OUTCOMES The learner should be able to	LEVEL 2 The learner has achieved the outcome because s/he can	LEVEL 3 The learner has achieved the outcome because s/he can	EVIDENCE	LOCATION
1. Understand health and safety risks from hazardous substances in the workplace	1.1 Summarise the main risks from hazardous substances identified by self and members 1.2 Adopt a trade union approach to health and safety risks from hazardous substances	1.1 Evaluate the main risks from hazardous substances identified by self and members 1.2 Adopt a trade union approach to health and safety risks from hazardous substance		
2. Understand the Control of Substances Hazardous to Health Regulations, and the HSE guidance, COSHH essentials	2.1 Summarise the key features of the COSHH Regulations 2.2 Use HSE COSHH Essentials to do a risk assessment 2.3 Identify the strengths and weaknesses of a COSHH risk assessment	2.1 Analyse the key features of the COSHH Regulations 2.2 Use HSE COSHH Essentials to do a risk assessment 2.3 Evaluate and compare two COSHH risk assessments, and make proposals for improvements		
3. Specify actions needed to take up problems involving hazardous substances	3.1 Explain how to take up a problem involving a hazardous substance	3.1 Plan a strategy for tackling a problem involving a hazardous substance		

KEY: WS=Work Sheet TO/PO=Tutor/Peer Observation SS=Summary Sheet P=Plan O=Other

NB You do not need to write in more than 2 occasions in the Evidence column e.g. first piece of evidence, best piece of evidence

Level achieved _____

Date _____

Signed: Tutor: _____ **Signed: Learner:** _____

OCN CODES

L2 AJ3/2/QQ/117

L3 AJ3/3/QQ/106

Activity

REVIEWING EXPERIENCE

AIMS

To help us to:

- share experiences
- identify concerns
- find out what's happening in different workplaces

TASK

In your group prepare a short report on:

1. Members' awareness and main concerns about hazardous substances used at work
2. Any successes you've had in dealing with hazardous substances
3. Management action under the COSHH Regulations
4. Information you have about hazardous substances

REPORT BACK

Elect a member of your group to report back to the rest of the course

RESOURCES

- Pre-course activity
- Your experience
- Documents from your union or management

<p><i>Assessment criteria</i> <i>COSHH: 1.1</i></p>

FACT SHEET 1 The scale of the problem

Background information

The true extent of work-related health damage from hazardous substances is not known and estimates vary widely. In the latest figures available from the International Agency for Research on Cancer (IARC) in 2004, out of 900 substances they have considered:

- 95 are carcinogenic to humans
- 66 are probably carcinogenic to humans
- 241 are possibly carcinogenic to humans

The HSE recently estimated that 1.3 million companies use chemicals and that each year in the UK:

- about 6,000 people die from cancer due to occupational causes
- up to 7,000 new cases of asthma are occupationally caused or have work as a significant contributing factor
- 66,000 people suffer from new or existing skin disease caused by work – about two thirds have dermatitis or eczema

The 2004 TUC Safety Representatives Survey showed overall that:

- chemicals or solvents were a major concern to one in five (21%) of safety representatives
- dusts were a major concern to around one in seven (15%) of safety representatives

In the private sector there was more concern, with the figures showing that:

- chemicals or solvents were a major concern to one in three (32%) of safety representatives
- dusts were a major concern to almost one in four (23%) of safety representatives

In a TUC publication, 'A woman's work is never safe,' the scale of the problem for working women is highlighted.

Hazardous substances and working women

The most common problems caused by handling hazardous substances are dermatitis and eczema, according to the Self-reported Work-related ill health survey. Cleaning materials, dust or fibres, oils or petrol, as well as variation in temperature were also cited as major factors.

The top five occupations cited at most at risk are hairdressing, repetitive assembly, nursing, construction, and farming.

Not only are women concentrated in three of the occupations most affected, but they may also be subject to a double dose of the substances that they are exposed to, because women's paid work is often similar to unpaid work that they are doing in the home.

Safety representatives need to be aware of the potential damage to health arising from the use of such substances. Unlike physical hazards, where the hazard is visible and the effects immediate, the harmful effects of toxic substances are not always obvious. The hidden hazards of chemicals, dusts and other toxic substances

present a real threat to workers' health and may be one of the greatest single causes of health damage:

- chemical technology is used in almost every work process
- thousands of substances are in daily use world-wide
- hundreds of new substances are brought onto the market each year

A huge range of substances and processes are used to make the goods and provide the services we take for granted. Hazardous substances are used in almost every workplace – offices, hospitals, hairdressing salons, gardens, kitchens and so on.

Every day people at work are exposed to substances which may cause:

- cancer
- reproductive disorders
- nerve and brain disorders
- liver and kidney diseases
- heart and lung disease
- skin disease
- allergies and sensitisation

What is a hazardous substance?

The extent of hazardous substances varies enormously between different jobs and industries. But all workers in all workplaces face some risks, and safety reps need to know how to deal with the problems.

Hazardous substances are defined by the COSHH Regulations (see Fact Sheets 2 & 4 below). Listed below are some examples of substances that may be harmful.

Examples of hazardous substances

- acids
- herbicides
- aerosols
- Inks
- metals, e.g. nickel, beryllium
- cleansers/detergents
- oils, cutting fluids
- paints
- correcting fluids
- disinfectants
- pesticides
- drugs and anaesthetics
- resins
- dusts
- solvents, degreasers
- dyes
- welding/soldering fumes
- fumes
- glues and adhesives
- hardeners

Examples of biological hazards

- spores in mouldy hay
- urine from cows, pigs and sheep
- grain dust
- exposure to pathogens
- contaminated water
- bacteria and other harmful micro-organisms

How do hazardous substances affect us?

Not all people respond in the same way. Some are more susceptible (that is, they respond at lower doses) than others, depending on various factors such as age, or state of health.

The main responses of the body are:

Irritation

- of the breathing system. Substances can irritate the nose and upper lung passages causing sneezing and coughing, and in some cases, bronchitis. They may also damage lung tissue
- of the skin and eyes. A common reaction is dermatitis - a rash. Solvents can remove the protective oils from the skin. This makes it dry, rough and sore. Some chemicals (for example, hydrochloric acid and caustic soda) may cause irritation in dilute form, but when concentrated can cause chemical burns. The eye is extremely vulnerable if substances make contact.

Sensitisation

- of the breathing system. Some substances can cause 'sensitisation.' Once a worker is sensitised any further exposure, even very small, may bring on an allergic response of coughing and wheezing
- of the skin. Sensitisation can also occur if a substance gets on the skin. Further contact even if tiny, may cause itching, rashes and discomfort.

Long-term effects

Some effects only emerge after years of exposure - or years after exposure. These are called *chronic* effects. Often very low doses can cause these - there may be no short-term (*acute*) effects to warn people of the risk. Lung damage caused by dusts, or heart disease caused by smoking are two examples of long-term effects.

Cancer

The long-term effect of most concern is cancer. This is a disorder of cell growth. It arises from a complex interaction between a harmful agent or agents (carcinogens) and the body. A number of chemicals are known or suspected cancer agents. The effect of exposure to a carcinogen may not be seen for many years, and early identification is often difficult.

According to *Hazards Magazine*, in their November 2005 report '*Burying the Evidence*', Britain is facing a cancer epidemic which has been almost entirely missed in official statistics. Go to www.hazards.org/cancer/report.htm for the full report. The extract from the *Hazards* report below shows a number of suspect substances.

What causes work cancer? (Extract from *Hazards* report)

www.hazards.org/cancer/report.htm

A September 2005 University of Massachusetts Lowell report identified examples of “strong causal links between environmental and occupational exposures and cancer”, many of which are commonly encountered in UK workplaces today, including:

- Metals such as arsenic, chromium and nickel and cancers of the bladder, lung, and skin
- Chlorination byproducts such as trihalomethanes and bladder cancer
- Natural fibres such as asbestos and cancers of the larynx, lung, mesothelioma, and stomach
- Petrochemicals and combustion products, including motor vehicle exhaust and polycyclic aromatic hydrocarbons (PAHs), and cancers of the bladder, lung, and skin
- Pesticide exposures and cancers of the brain, Wilms’ tumour, leukaemia, and non-Hodgkin’s lymphoma
- Reactive chemicals such as vinyl chloride and liver cancer and soft tissue sarcoma
- Metalworking fluids and mineral oils and cancers of the bladder, larynx, nasal passages, rectum, skin, and stomach
- Ionising radiation and cancers of the bladder, bone, brain, breast, liver, lung, ovary, skin, and thyroid, as well as leukaemia, multiple myeloma, and sarcomas
- Solvents such as benzene and leukaemia and non-Hodgkin’s lymphoma; tetrachloroethylene and bladder cancer; and trichloroethylene and Hodgkin’s disease, leukaemia, and kidney and liver cancers
- Environmental tobacco smoke and cancers of the breast and lung

(Richard Clapp, Genevieve Howe, Molly Jacobs Lefevre. *Environmental and occupational causes of cancer: A review of recent Scientific literature*. September 2005 at www.sustainableproduction.org/cancer-summary.shtml)

Reproductive disorders

Some substances can cause loss of sex drive, and infertility in both men and women. They can damage the sperm or the egg (mutagens), or the foetus (teratogens). There is a lack of reliable evidence on this for most industrial chemicals.

What are the risks?

History has shown that the hazards are often not recognised until too late. Signs of damage may take many years to develop - so all substances should be treated with caution. In particular, care is needed if laboratory experiments show potential harm, or if a substance with a similar structure has been known to harm humans.

Risk depends upon toxicity and dose:

- *Toxicity* is potential to cause harm. This varies with the substance; route of entry into the body; and the body's response. For example, caustic soda may cause a chemical burn, silica may cause fibrosis of the lung. Carbon tetrachloride may cause dermatitis by defatting the skin and, after absorption, also affect the brain, blood and liver
- *Dose* is the amount of the substance that is absorbed into the body. This

depends on the concentration of the substance in different organs and tissues and the time it remains and stays active. Some substances accumulate in the body. In these cases, repeated low doses may cause harm

How do chemicals enter the body?

The ease with which substances enter the body depends on its physical and chemical make up. It could be a gas or vapour, an aerosol, fume, liquid, dust or fibre. For an aerosol, dust or fibre, particle size is important as this affects how far it can travel into the lungs. Once inside the body the substance's effect will depend on its solubility in body fluids (e.g. water and natural oils) and how the substance reacts with the body's own chemicals.

The most common routes of entry are:

- *Inhalation*: breathing is the most common route of entry. Aerosols, fumes, vapours and gases can cause harm anywhere in the respiratory system and may also be absorbed into the blood stream. Particles of dust and fibre can also cause harm. Large particles are filtered off in the nose; smaller ones, or those breathed through the mouth, settle on the walls of the windpipe or throat and are coughed up and either spat out or swallowed. The smallest particles of dust and fibres can be inhaled down into the lungs where they can cause local damage or be absorbed into the blood stream
- *Skin absorption*: the thickness of the skin and its natural covering of sweat and grease provide some protection. This means only a few substances are readily absorbed by this route, e.g. organic solvents and phenols. Substances can also enter the body through cuts
- *Ingestion*: the swallowing of substances is most likely when contaminated fingers are placed in the mouth, or used to handle food or cigarettes. In addition, inhaled particles may be coughed up and then swallowed

Acute and chronic effects

Substances may have "acute" or "chronic" effects:

- An *acute* response is immediate, e.g. inhalation of chlorine irritates the respiratory tract. Acute responses usually clear up once the individual has been removed from the problem
- A *chronic* reaction is much slower and often builds up after repeated exposures over days, weeks or years. For example, dermatitis of the hands due to repeated contact with solvents. Most chronic diseases require a much longer period for recovery and in some cases damage is permanent

Chronic and acute effects from a particular substance may be very different and protecting against only one kind of effect may not control the hazard of the other.

Examples of acute and chronic effects

HSE publication: Diesel engine exhaust emissions INDG 286

Breathing in diesel fumes can affect your health, and exposure to the fumes can cause irritation of your eyes or respiratory tract. These effects are generally short term and should disappear when you are away from the source of exposure. However, prolonged exposure to diesel fumes, in particular to any blue or black smoke, could lead to coughing, chestiness and breathlessness.

In the long term, there is some evidence that repeated exposure to diesel fumes over a period of about 20 years may increase the risk of lung cancer. Exposure to petrol engine exhaust emissions does not have the same risk. Skin contact with cold diesel fuel may cause dermatitis.

www.hse.gov.uk/pubns/indg286.htm

Standards

From April 2005, Workplace Exposure Limits (WELs) have replaced maximum exposure limits and occupational exposure standards. Workplace Exposure Limits (WELs) are listed in the HSE publication EH40/2005 (which gets updated) and are reproduced online at www.hse.gov.uk/coshh/table1.pdf (See Fact Sheet 8 below for more details on Workplace Exposure Limits). These limits should not be exceeded at work. But there are problems:

- the limits could give a false sense of security and do not always represent safe conditions
- women may be adversely affected at lower levels than men, and research often concentrates on men rather than women
- some chronic (long-term) effects may be unknown. Limits are often lowered as more information comes to light
- standards do not exist for many potentially harmful substances
- little is known about the effects of mixtures of substances that workers are exposed to
- supposed "safe" limits sometimes differ between different countries

A trade union approach

Trade unions often feel that workers are being used as 'guinea pigs', and that the economic interests of manufacturers and employers are put first:

- substances are often assumed to be 'safe' unless there is strong evidence of risk
- the level of evidence demanded to prove a substance is a hazard is very high. In many cases this means final proof is only accepted after several generations have suffered. Even then, large-scale medical studies may be needed to prove the link between the hazard and its effect

A trade union approach would insist that:

- all substances should be treated with care whether or not they are known to have any harmful effects
- standards should be based on evidence from all sources, not just the "proof" from counting the victims after the damage has been done

The TUC campaigned for many years for laws to protect workers' health from harmful substances. The TUC believes that the COSHH Regulations 2002 (as amended in 2003 and 2004), and the HSE Guide COSHH Essentials, present unions with major opportunities to protect workers from chemical hazards. There are many examples of safety reps successfully preventing or controlling the exposure of their members to these substances. Some employers have complied with the previous laws on hazardous substances. But as we have seen consistently in TUC Safety Reps' Surveys, the reality in many workplaces is that workers are being exposed to the risks from hazardous substances.

We hope that this course will help unions and safety reps organise to make use of the COSHH Regulations and COSHH Essentials, to ensure that employers comply.

Activity **AN INTRODUCTION TO COSHH**

AIMS

To help us to:

- identify the key features of COSHH
- develop a COSHH flow chart

TASK

1. In your small group, look at the brief summary of the COSHH Regulations in Fact Sheet 2 below.
2. Discuss the key features of the Regulations and draw a flow chart showing what an employer should do.
3. Your tutor will ask the spokesperson from your group, to describe the flow chart to another group, who will in turn describe their flow chart to your group.
4. Make a note of any queries or comments that you want to raise when all the groups come back together for a summary of the key points.

RESOURCES

- Fact Sheet 2

<i>Assessment criteria</i> <i>COSHH: 2.1</i>

FACT SHEET 2: The Legal Background

There are several pieces of legislation that are relevant to hazardous substances, in addition to COSHH. Three of these are summarised on this page. On the following pages, there is a brief summary of the '8 steps to COSHH' from the HSE publication '*COSHH – a brief guide to the Regulations*' (INDG136rev3). The COSHH Regulations are covered in more detail in Fact Sheet 4.

The Health and Safety at Work etc. Act 1974

Places a general duty on the employer as far as is reasonable practicable to:

- ensure the safety, health and welfare at work of their employees
- provide safe and properly maintained plant
- provide the safe use, handling, storage and transport of articles and substances
- provide health and safety information, instruction, training and supervision
- provide a safe and healthy working environment

Designers, manufacturers, importers or suppliers must ensure substances are safe.

The Management of Health and Safety at Work Regulations 1999

Employers must assess risks in the workplace

- The assessment must be suitable and sufficient and performed by a competent person
- The risks must be prevented and controlled

The Safety Reps and Safety Committee Regulations 1977

Amongst many other rights, safety reps must be consulted in good time with regard to:

- the introduction of measures which may substantially affect the health and safety of employees
- the arrangements for appointing competent persons
- any health and safety information that should be given
- the planning and organisation of health and safety training
- the health and safety consequences of the introduction of new technologies

The employer should also make available to the safety rep, technical information about substances.

Eight steps to COSHH

(based upon HSE Guidance INDG136rev3 published in May 2005)

COSHH Step 1: Assess the risks

The first step is to decide whether there is a problem with the substance(s) your company is using. This is called a risk assessment. The employer must:

- identify the hazardous substances present in your workplace
- consider the risks these substances present to people's health

Assessing the risk involves making a judgement on how likely it is that a hazardous substance will affect someone's health. Employers should ask themselves:

- how much of the substance is in use and how people might be exposed to it
- who might be exposed to the substance and how often
- is there a possibility of substances being absorbed through the skin or swallowed?
- are there risks to employees at other locations, if they work away from the main workplace?

Legal responsibility for the assessment rests with the employer, but others can do some or even most of the work of preparing it. Except in very simple cases, whoever carries out the assessment will need to:

- have access to and understand the COSHH Regulations and relevant ACoPs
- be able to get all the necessary information and have the knowledge and experience to make correct decisions about the risks and the actions needed

Safety representatives should be involved in assessments as they have valuable contributions to make. They must also be informed of the results of the assessment.

COSHH Step 2: Decide what precautions are needed

If the employer identifies significant risks, they must decide on the action to take to remove or reduce them to acceptable levels. To decide whether risks are significant, employers can compare controls with:

- advice from COSHH Essentials (www.coshh-essentials.org.uk)
- the results of monitoring workers' exposure with workplace exposure limits (WELs) published in EH40/2005
- good standards from the industry sector

Action must be taken if there are risks to health. If there are five or more employees, the employer should make and retain a record of the main findings of the assessment, either in writing or on computer. The record should be made as soon as practicable after the assessment. It should include a record of:

- enough information to explain the decisions taken about whether risks are significant and the need for any control measures
- the actions employees and others need to take to ensure hazardous substances are adequately controlled

The assessment should:

- be reviewed when there is reason to suspect the assessment is no longer valid
- be reviewed when there has been a significant change in the work
- be reviewed when the results of monitoring employees' exposure shows it to be necessary
- state when the next review is planned

COSHH Step 3: Prevent or adequately control exposure

The COSHH Regulations require prevention of exposure, so employers should:

- change the process or activity, so that the hazardous substance is not needed or generated
- replace it with a safer alternative
- use it in a safer form, for example, pellets instead of powder. The HSE guidance booklet, "Seven steps to successful substitution of hazardous substances", advises on how to replace hazardous substances with safer alternatives

If prevention is not reasonably practicable, the employer must adequately control exposure. This can be done using one of the following measures, in order of priority:

- use appropriate work processes, systems and engineering controls, and provide suitable work equipment and materials. For example, use processes which minimise the amount of material used or produced, or equipment which totally encloses the process
- control exposure at source, for example, by using local exhaust ventilation; and reduce to a minimum the number of employees exposed, the level and duration of their exposure, and the quantity of hazardous substances used or produced in the workplace
- provision of personal protective equipment, but only as a last resort and never as a replacement for other control measures which are required

Since 6th April 2005, under COSHH, adequate control of exposure to a substance hazardous to health means:

- applying the eight principles of good practice set out in the new Schedule 2A to COSHH (see Fact Sheet 4 for full details of these eight principles)
- not exceeding the workplace exposure limit (WEL) for the substance (if there is one) and
- if the substance causes cancer, heritable genetic damage or asthma, reducing exposure to as low a level as reasonably practicable

(See Fact Sheet 8 for full details of the new system of WELs)

COSHH Step 4: Ensure that control measures are used and maintained

COSHH requires employees to make proper use of control measures and to report defects. It is the employer's responsibility to take all reasonable steps to ensure that they do so. This is why employees must be given suitable training, information and appropriate supervision (see Step 8 for a more detailed explanation).

COSHH places specific duties on employers to ensure that controls are kept in efficient working order and good repair. Engineering controls and respiratory protective equipment have to be examined and, where appropriate, tested at suitable intervals. COSHH sets specific intervals between examinations for local exhaust ventilation equipment, and records of examinations and tests carried out (or a summary of them) must be kept, for at least five years.

COSHH Step 5: Monitor exposure

Under COSHH, employers have to measure the concentration of hazardous substances in the air breathed in by workers where their assessment concludes that:

- there could be serious risks to health if control measures failed or deteriorated
- exposure limits might be exceeded

- control measures might not be working properly

COSHH Step 6: Carry out appropriate health surveillance

COSHH requires employers to carry out health surveillance in the following circumstances:

- where an employee is exposed to one of the substances listed in Schedule 6 of COSHH, and is working in one of the related processes – for example, manufacture of certain compounds of benzene – and there is reasonable likelihood that an identifiable disease or adverse health effect will result from that exposure
- where employees are exposed to a substance linked to a particular disease or adverse health effect, and there is a reasonable likelihood under the conditions of the work of that disease or effect occurring, and it is possible to detect the disease or health effect

COSHH Step 7: Prepare plans and procedures to deal with accidents, incidents and emergencies

This will apply where the work activity gives rise to a risk of an accident, incident or emergency involving exposure to a hazardous substance, which goes well beyond the risks associated with normal day-to-day work. Employers must prepare procedures, and set up warning and communication systems to enable an appropriate response immediately any incident occurs.

COSHH Step 8: Ensure that employees are properly informed, trained and supervised

COSHH requires employers to provide employees with suitable information, instruction and training about:

- the names of the substances they work with or could be exposed to and the risks created by such exposure to those substances
- access to any safety data sheets that apply to those substances
- the main findings of the risk assessment
- the precautions they should take to protect themselves and other employees
- how to use personal protective equipment
- the results of any exposure monitoring and health surveillance
- emergency procedures which need to be followed

(The full HSE guide COSHH: a brief guide to the Regulations (INDG136rev3) can be found at www.hse.gov.uk/pubns/indg136.pdf)

Activity

A TRADE UNION APPROACH TO COSHH

AIMS

To help us to:

- use what we have learned about the COSHH Regulations so far
- develop a trade union approach to hazardous substances

TASK

Your tutor will ask your small group to prepare a trade union response to two of the following situations.

For each one, prepare a report on a chart setting out:

- the problem
 - relevant information and COSHH provisions
 - trade union aims
 - how you would take up the problem
1. Your members are cleaners in a hospital. Management says that COSHH only applies to dangerous chemicals, so risk assessments are not necessary for cleaning fluids.
 2. Management say it is not "reasonably practicable" to install local exhaust ventilation for soldering work. They say it would cost too much, so your members should use personal protective equipment.
 3. A team leader has been appointed as a competent person to assess the risks from substances in the light assembly area. S/he is very enthusiastic but has had no previous health and safety training.
 4. A member has approached you who is concerned about needlestick injuries in a hospital trust. You approach the new safety manager for the trust, who was until recently a safety manager in an engineering company. S/he asks for your views on how COSHH principles could be applied to needlestick injuries.

5. When you return from your TUC three-day COSHH course, you are asked to do the risk assessments for hazardous substances. Nobody has ever done assessments before, and your manager says that as you have been trained, you are the most competent person to do them.
6. You ask for training and information to help painters to avoid health risks during their work. Without consulting you any further, the employer sends round a memo telling your members to always keep the windows open, and put the lids back on paint tins.
7. Management pass on documents resulting from their COSHH assessments. They seem to be a collection of suppliers' data sheets. Not all substances are included, and some of the information is incomplete and hard to follow.
8. You know that there have been no COSHH assessments done for some temporary workers, who are mainly women. They manufacture toys for Christmas, using glues and solvents. You approach their supervisor, who tells you not to worry about them as they only work for two months per year.

REPORT BACK

Elect a member of your group to report back to the rest of the course

RESOURCES

- Fact Sheets 1 & 2 above

<i>Assessment criteria</i> <i>COSHH: 1.2</i>

Activity **PLANNING A COSHH INSPECTION**

AIMS

To help us to:

- plan a COSHH inspection
- develop a COSHH checklist
- conduct an inspection

TASK

The course will be divided into small groups to prepare for inspecting your workplace before the next session of your course.

1. Use the 'Eight steps to COSHH checklist' in Fact Sheet 2 to help you to prepare a list of points that you will cover during your special COSHH inspection
2. Identify:
 - when you will do the inspection
 - the steps you need to take to do the inspection
 - any problems you envisage in doing the inspection and how you will overcome them

REPORT BACK

Elect a member of your group to report back to the rest of the course

RESOURCES

- Fact Sheet 2 for a COSHH summary
- Fact Sheet 3 below for your legal rights to inspect and information about inspections

<i>Assessment criteria</i> COSHH: 1.2; 2.1

Fact Sheet 3: COSHH inspections

Safety reps' rights

Safety reps will need to use their rights fully, and build their organisation to ensure that employers comply with the COSHH Regulations 2002 (as amended). The legal rights (including the right to inspect) are taken from the Safety Representatives and Safety Committees Regulations 1977 (SRSC). Some of the main rights are listed below.

Representation

- represent their members' interests in relation to any matter affecting their health and safety (Regulation 4 (1)(d))
- make representations to their employer on health, safety and welfare matters (Regulation 4 (1)(c))
- represent their members in consultations with HSE inspectors or other enforcing authorities (Regulation 4 (1)(f))
- require their employer to set up a safety committee within three months and attend meetings as members (Regulation 9 and Guidance Notes on Safety Committees)

Consultation

To be consulted in good time with regard to:

- the introduction of measures which may substantially affect the health and safety of employees (Regulation 4A(1)a)
- the arrangements for appointing competent persons under the Management of Health and Safety Regulations 1999 – to supervise risk assessment (Regulation 4A(1)b)
- any health and safety information that must be given to employees or reps (Regulation 4A(1)c)
- the planning and organisation of health and safety training (Regulation 4A(1)d)
- the health and safety consequences of the introduction of new technologies (Regulation 4A(1)e)

Investigation and Inspection

- investigate potential hazards and complaints (Regulation 4(1)(a & b))
- inspect designated workplace areas at least once every three months (Regulation 5(1))
- make additional inspections within that time if work practices have changed or new information has come to light (Regulation 5(2))
- investigate the causes of accidents, dangerous occurrences and causes of industrial disease (Regulation 6(1))

Assistance, information and training

- obtain facilities and assistance from their employer to enable them to carry out inspections (Regulation 5(3))
- receive legal and technical information from inspectors (Regulation 4 (1)(g))
- obtain necessary information from their employer to enable them to carry out their functions (Regulation 7 and ACOP Paragraph 6)
- receive time off with pay to carry out their job as a safety representative and to attend TUC or union approved training (Regulation 4(2) and ACOP on training)

Some ways of identifying occupational ill health

Listening to members	This is the most widely used method of finding out which hazards at work are causing ill health. Areas without safety reps, or reps who don't yet know how to evaluate what they're hearing, may miss some of the problems.
Inspections (see below)	Safety reps can do regular inspections of the workplace. Inspections are one of the most valuable tools and give you lots of information about what might be causing ill health at your workplace.
Ill health statistics	Employer's statistics could determine what ill health is caused by work. You may find, however, that your employer does not collect statistics in a systematic way, or collect them at all. If they are collected, they might bear very little relation to real life in your workplace.
Surveys	Surveys and questionnaires of members has been one of the most effective and popular ways of pinpointing particular workplace health issues. Many safety reps use this method as they can target certain areas of work or cover the whole workplace, concentrate on a single topic or cover several.
Research	Research can be extremely useful but management may not readily agree to having outsiders come in and examine a workplace.
Body mapping (see below)	Body mapping is a way of identifying common patterns of health problems amongst workers in a particular workplace, normally doing the same or a similar job. While it isn't certain that any such common ailments are work-related, it highlights areas for further investigation.

Inspections

One of the main functions of a safety representative is to carry out inspections. Arrangements for three-monthly and other more frequent inspections will normally be agreed with employers. Issues to be discussed include:

- the need for more frequent inspections of high-risk or rapidly changing areas of work activity
- notice and timing of formal inspections by safety representatives and how many safety representatives will be involved
- the possibility of breaking up workplace-wide formal inspections into smaller, more manageable inspections
- the need for different groups of safety representatives to carry out inspections of different parts of the workplace
- the type of inspection to be carried out, such as safety tours, sampling or surveys (including consulting employees)
- the use by safety representatives of independent technical advisers

Formal inspections are no substitute for daily observation, but they provide a useful opportunity to carry out a full-scale examination of all or part of the workplace. This includes the inspection of documents required by health and safety legislation such as COSHH assessments. During these inspections, safety representatives can network with other representatives and discuss remedial action with their employers. During inspections safety representatives are entitled to private discussion with employees.

There are several types of inspection that you can use. They include:

- general inspections of a work area
- special inspections of a particular aspect of work
- accident and ill health inspections
- inspections of documents or information

You can use a special inspection to concentrate in more detail on COSHH. The special inspection could be in addition to regular general inspections. Or you may decide to change one of your regular inspections into a special one. For example, you may decide to do a special inspection on COSHH because of:

- members' complaints
- new information you have received, for example, details of the COSHH Regulations 2002 (as amended) from this course
- the need to investigate hazardous substances in more depth

Following an inspection, safety representatives should complete an inspection report, recording the date, time and details of an inspection. One copy of the completed form should be sent to the employer and one copy should be retained by the safety representative for their own records and for reference during safety committee discussions.

Body mapping

What is body mapping?

It can be difficult for safety reps to identify ill health symptoms caused by hazardous substances amongst the workforce. The TUC, *Hazards* magazine and the Health and Safety Executive have combined to try to help safety reps to identify ill health caused by work. One technique that is being recommended for use is “body mapping.”

Body mapping is a way of identifying common patterns of health problems amongst workers in a particular workplace, normally doing the same or a similar job. While it isn't certain that any such common ailments are work-related, it highlights areas for further investigation.

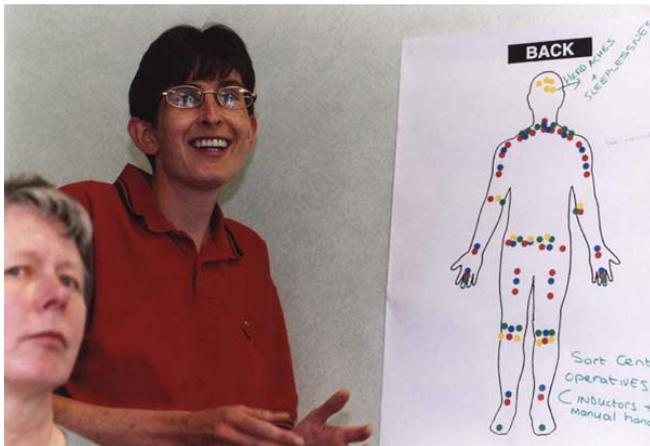


Photo: courtesy of the Union of Shop, Distributive and Allied Workers

How to body map

1. What you will need

- Front and back body outlines.
- A small body map for each member or, a larger body map for several members to use.
- Marker pens (different colours if possible) so that members can mark any symptoms that they have on to the body map.

2. Organising the session

- Get together with a group of your members who should usually be doing the same or similar jobs.
- Explain what you are proposing to do, and stress that information from individuals is confidential.
- Ask them to make a coloured mark on to the body map to show any symptoms that they may have. It is a good idea to use different colours to identify different symptoms. For example:
 - **red** = chest tightness; bouts of coughing; wheezing; breathlessness
 - **green** = Recurring blocked or runny nose; recurring soreness of or watering of the eyes
 - **yellow** = skin problems
 - **blue** = other problems, such as reproductive problems, cancer and so on

3. Keeping a record

As your members apply the stickers/coloured mark, ask them to explain briefly why they placed the sticker/coloured mark in the particular place. Keep notes of what they say around the body map and the numbers who say it.

4. Discussing the findings with members

Talk through the findings with your members. Discuss common patterns. The more that members report the same symptoms, the more likely that the work they are doing is to blame.

5. Planning the next steps

Once you and your members have identified symptoms, you will then need to tackle the hazards that may be causing the symptoms. The rest of your COSHH course will help you to do this.

Workplace Activity

CONDUCTING A COSHH INSPECTION

AIMS

To help us to:

- conduct a special COSHH inspection
- obtain more information for the next session of the course

TASK

1. Use the checklist that you developed from the last Activity to do a special COSHH inspection of your workplace
2. Obtain a safety data sheet from your employer that relates to a hazardous substance that you are concerned about

REPORT BACK

Prepare a short report for the next session of the course

RESOURCES

- Fact Sheet 2 for a COSHH summary
- Fact Sheet 3 for your legal rights to inspect
- The inspection checklist you developed

<i>Assessment criteria</i> COSHH: 1.1; 1.2; 2.1
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Activity SHARING INSPECTION EXPERIENCES

AIMS

To help us to:

- share experiences of COSHH inspections
- identify members' concerns
- find out what's happening in different workplaces

TASK

In your group, prepare a short report on the COSHH inspections that you did for your workplace activity. Use the results of your inspections to cover the following:

- members' exposure to hazardous substances in your workplaces
- members' awareness, main concerns and illness
- employer action on COSHH
- information you found, including safety data sheets relating to hazardous substances

REPORT BACK

Elect a member of your group to report back to the rest of the course.

RESOURCES

- Workplace activity
- Information from your union and workplace

<p><i>Assessment criteria</i> COSHH: 1.1; 1.2; 2.1</p>
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Activity **TACKLING HAZARDS USING COSHH**

AIMS

To help us to:

- assess management's performance
- begin to tackle hazardous substances using COSHH
- plan union action

TASK

In your group pick **one** of the hazards from substances which you and your members are concerned about from your inspection.

- interview the group member who brought this up
- use the worksheet on the following pages to structure your discussion
- using the resources below, find out what the employer is doing, what the employer should do under the COSHH Regulations, and what action the union should take

REPORT BACK

Elect a member of your group to report back to the rest of the course.

RESOURCES

- Fact Sheet 4 (summarising the COSHH Regulations)
- Fact Sheet 5 (summarising the TUC ESCAPE approach to prevention and control)
- HSE leaflet INDG136rev3: COSHH a brief guide to the Regulations and Fact Sheet 2 above
- The COSHH Regulations 2002 (as amended)

<p><i>Assessment criteria</i> <i>COSHH: 2.1; 3.1</i></p>
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WORKSHEET: Tackling hazards using COSHH

Brief description of the problem:

COSHH Regulations	What your employer does	COSHH requirements	What should the union do?
Regulation 2 INTERPRETATION: SUBSTANCES HAZARDOUS TO HEALTH			
Regulation 6 RISK ASSESSMENT			
Regulation 7 PREVENTION OR CONTROL			

COSHH Regulations	What your employer does	COSHH requirements	What should the union do?
Regulations 8&9 USE AND MAINTENANCE OF CONTROLS			
Regulation 10 MONITORING OF EXPOSURE			
Regulation 11 HEALTH SURVEILLANCE			
Regulation 12 INFORMATION AND TRAINING			
Regulation 13 ARRANGEMENTS TO DEAL WITH ACCIDENTS, INCIDENTS & EMERGENCIES			

FACT SHEET 4

Summary of the COSHH Regulations 2002 (as amended in 2004)

Coverage and Scope of the Regulations

WHAT IS A SUBSTANCE "HAZARDOUS TO HEALTH"?

[Regulation 2]

Substance hazardous to health means a substance (including a preparation) which:

- is listed as very toxic, toxic, harmful, irritant or corrosive in Part 1 of the approved supply list of the *Chemicals (Hazard Information and Packaging for Supply) Regulations* (known as CHIP)
- the HSC has approved a *workplace exposure limit (WEL)*
- is a biological agent
- is a dust of any kind, when present at a concentration in air equal to or greater than 10 mg/m³ as a time-weighted average over an 8 hour period of inhalable dust; or 4 mg/m³ as a time-weighted average over an 8 hour period of respirable dust
- is because of its chemical or toxicological properties and the way it is used or present at the workplace, a risk to health

ARE ANY SUBSTANCES NOT COVERED BY THE REGULATIONS?

[Regulations 4 & 5, Schedule 2]

- Lead, asbestos, ionising radiation and work below ground in a mine all have their own regulations.
- Some substances are totally banned.

WHO HAS DUTIES UNDER THE COSHH REGS?

[Regulations 3, 8(2) & 13(5)]

- Employers, contractors, sub-contractors and the self-employed all have the duties of employers under the Regulations.
- The duties cover protection of employees and (with some exceptions, for example, health surveillance) to other persons who may be affected by the work.
- Employees should co-operate; make full and proper use of control measures and PPE; report any accident or incident.

Risk assessment

HOW SHOULD HEALTH RISKS BE ASSESSED?

[Regulation 6]

An employer should not carry out work which is liable to expose any employees to any substance hazardous to health unless s/he has:

- made a suitable and sufficient assessment of the risk created by that work to the health of those employees and of the steps that need to be taken to meet the requirements of the COSHH Regulations and
- implemented the necessary steps

The risk assessment must include a consideration of:

- the hazardous properties of the substance
- information on health effects provided by the supplier, including information contained in any relevant safety data sheet
- the level, type and duration of exposure
- the circumstances of the work, including the amount of the substance involved
- activities, such as maintenance, when there is potential for a high level of exposure
- relevant workplace exposure limit
- the effect of preventive and control measures
- the results of health surveillance
- the results of monitoring of exposure
- the risks presented by combined exposure to substances
- the approved classification of any biological agent
- other additional information

The assessment should be reviewed regularly and straight away if:

- there is reason to suspect that it is no longer valid
- there has been a significant change in the work
- the results of monitoring show it to be necessary

Changes that are necessary as a result of the review should be implemented.

Where the employer employs 5 or more people, s/he shall record:

- the significant findings of the risk assessment as soon as is practicable after the risk assessment is made and
- the steps taken to meet the requirements of Regulation 7 (see below)

HOW SHOULD SAFETY REPS AND EMPLOYEES BE CONSULTED?

[ACOP Paragraph 84]

Employers should involve employees, and/or their safety representatives in the process of carrying out and reviewing risk assessments. They are in a good position to know what happens in practice and they will use the controls that the employer introduces. Employers should also:

- tell employees and/or safety reps the results of the assessment;
- explain how control measures are designed to protect their health;
- explain how changes will affect the way the work is done.

Control measures

HOW CAN WE PREVENT OR CONTROL EXPOSURE?

[Regulation 7]

Prevention of exposure

Every employer has to ensure that the exposure of employees to hazardous substances is either prevented, or where this is not reasonably practicable, adequately controlled.

In complying with this duty of prevention, substitution should be undertaken, where the employer avoids the use of a hazardous substance by replacing it with a substance or process which eliminates or reduces the risk to employees' health.

Control measures

Where it is not reasonably practicable to prevent exposure, control measures should be adopted according to the following order of priority:

- the design and use of appropriate work processes, systems and engineering controls and the provision and use of suitable work equipment and materials
- the control of exposure at source, including adequate ventilation systems and appropriate organisational measures
- where adequate control of exposure cannot be achieved by other means, the provision of personal protective equipment in addition

The control measures should include:

- arrangements for safe handling, storage and transport of hazardous substances and of waste
- the adoption of suitable maintenance procedures
- reducing to a minimum required, the number of employees subject to exposure; the level and duration of exposure; and the quantity of hazardous substances
- control of the working environment, including appropriate general ventilation
- appropriate hygiene measures
- additional control measures for carcinogens and biological agents

Control of exposure will only be treated as adequate where:

1. New principles of good practice are applied

[Regulation 7(7)(a) and Schedule 2A]

(a) Design and operate processes and activities to minimise emission, release and spread of substances hazardous to health.

(b) Take into account all relevant routes of exposure- inhalation, skin absorption and ingestion- when developing control measures.

(c) Control exposure by measures that are proportionate to the health risk.

(d) Choose the most effective and reliable control options which minimise the escape and spread of substances hazardous to health.

(e) Where adequate control of exposure cannot be achieved by other means, provide, in combination with other control measures, suitable personal protective equipment.

(f) Check and review regularly all elements of control measures for their continuing effectiveness.

(g) Inform and train all employees on the hazards and risks from the substances with which they work and the use of control measures developed to minimise the risks.

(h) Ensure that the introduction of control measures does not increase the overall risk to health and safety.

2. Any workplace exposure limit (WEL) is not exceeded

[Regulation 7(7)(b)]

See Fact Sheet 8 for full details on the new system of WELs and go to www.hse.gov.uk/coshh/table1.pdf for the current list of approved workplace exposure limits.

3. Exposure is reduced as low as is reasonably practicable

[Regulation 7(7)(c)]

For substances which carry certain risk phrases; or are listed in Schedule 1 of COSHH; or are known or potential asthmagens.

COSHH Essentials

Fact Sheet 8 and www.coshh-essentials.org.uk provide further details of the HSE's COSHH Essentials approach to control

HOW SHOULD CONTROL MEASURES BE USED, TESTED AND MAINTAINED?

Use of control measures

[Regulation 8]

Employers must take reasonable steps to ensure that control measures are properly used or applied. Employees must make full and proper use of control measures, return them after use (where applicable) and report any defects.

Maintenance, examination and testing of control measures

[Regulation 9]

Every employer who provides any control measure to meet the requirements of Regulation 7 shall ensure that -

(a) in the case of plant and equipment, including engineering controls and personal protective equipment, it is maintained in an efficient state, in efficient working order, in good repair and in a clean condition; and

(b) in the case of the provision of systems of work and supervision and of any other measure, it is reviewed at suitable intervals and revised if necessary

Where engineering controls are provided, the employer has to ensure that thorough examination and testing of those controls is carried out:

- at least once every fourteen months in the case of local exhaust ventilation plant (more often for processes specified in Schedule 4 of COSHH)
- in any other case (including respiratory protective equipment), at suitable intervals

Employers have to keep a record for five years of the examinations, tests and repairs. In the case of personal protective clothing and equipment, employers should ensure it is:

- properly stored in a well defined space
- checked at suitable intervals
- repaired or replaced when discovered to be defective
- removed if contaminated and kept apart from uncontaminated clothing and equipment. It must be subsequently be decontaminated and cleaned or, destroyed if necessary

Monitoring

HOW SHOULD EXPOSURE BE MONITORED?

[Regulation 10]

The employer must monitor the exposure of employees to hazardous substances where the risk assessment indicates that:

- it is necessary for the maintenance of adequate control or
- it is otherwise necessary to protect employees' health

Monitoring needs to take place on a regular basis and when any change occurs that may affect exposure. Suitable records of the monitoring should be made and kept:

- for forty years if the record represents employees' personal exposures or
- in other cases for 5 years

Employees should be allowed access to their personal monitoring records after giving reasonable notice.

Health surveillance

HOW SHOULD HEALTH BE SURVEYED?

[Regulation 11]

Health surveillance is required:

- for specific substances and processes listed in of Schedule 6 of COSHH or
- the exposure of an employee is such that an identifiable disease or adverse health effect may be related to the exposure; there is a reasonable likelihood that the disease or effect may occur under the particular conditions of her/his work; and there are valid techniques for detecting indications of the disease or effect

In both of the above cases, the technique of investigation must be of low risk to the employee. Suitable records of the monitoring should be made and kept for forty years from the date of the last entry. Employees should be allowed access to their personal health records after giving reasonable notice.

Where an employee, as a result of health surveillance, is found to have an identifiable disease or adverse health effect, the employer must:

- ensure the doctor or health professional notifies the employee and provides her/him with advice and information
- review the risk assessment

- review prevention and control measures
- consider alternative work for the employee
- provide for health reviews of other employees similarly exposed

Employees should:

- be available during working hours for health surveillance and
- furnish necessary information
- apply to the HSE for a review of decisions with which they are aggrieved

Information and training

INFORMATION, INSTRUCTION AND TRAINING FOR EMPLOYEES

[Regulation 12]

Employers have an obligation to provide employees with suitable and sufficient information, instruction and training, to include:

- details of hazardous substances to which they are exposed including the names; workplace exposure limits; access to safety data sheets; legislative provisions
- significant findings of risk assessments
- precautions and action to be taken by the employee
- results of monitoring; and if the workplace exposure limit (WEL) has been exceeded, the employee or their safety rep shall be informed forthwith;
- collective results of health surveillance
- written instructions and notices for a Group 4 biological agent

Information, instruction and training needs to be:

- adapted to take account of significant changes in the type of work carried out or methods of work used by the employer
- appropriate to the level, type and duration of exposure
- provided for anyone carrying out work in connection with the employer's duties.

Accidents, incidents and emergencies

ARRANGEMENTS FOR ACCIDENTS, INCIDENTS & EMERGENCIES

[Regulation 13]

The provisions below are in addition to those required in Regulation 8 of the Management of Health and Safety at work Regulations 1999, but do not apply where there is only slight risks to health, and measures already taken are sufficient to control the risk.

The employer should ensure that:

- procedures, including the provision of appropriate first aid facilities and relevant safety drills, have been prepared and can be put into effect
- information on emergency arrangements is available
- warning and communication systems are established
- information is made available to the emergency services

In the event of an accident, incident or emergency related to a hazardous substance, the employer should ensure that:

- immediate steps are taken to mitigate the effects of the event; restore the situation to normal; and inform those employees affected
- only those connected with repair or other necessary work are permitted in the area, and they are provided with personal protective equipment; and specialised safety equipment and plant
- in the case of the release of a biological agent, inform employees or safety reps of the causes and the steps taken to rectify the situation

Employees should report accidents or incidents resulting in the release of a biological agent.

FACT SHEET 5: Hazardous Substances – the TUC ESCAPE Route

The TUC produced a series of slides for European Week for Safety and Health at Work in 2003, summarising the TUC approach to hazardous substances. The six slides below give a visual approach to prevention and control measures. For the full presentation, go to www.tuc.org.uk/extras/euroweek.ppt

European Week for Safety and Health at Work 2003

DANGEROUS SUBSTANCES
HANDLE WITH CARE



The TUC ESCAPE Route from Dangerous Substances

Eliminate
Substitute
Control
And
Prevent
Exposure

European Agency for Safety and Health at Work

European Week for Safety and Health at Work 2003

DANGEROUS SUBSTANCES
HANDLE WITH CARE



TUC ESCAPE Route

```

    graph TD
      A[DANGEROUS SUBSTANCE] --> B[ELIMINATE]
      B -- NO --> C[NEXT STEP SUBSTITUTE]
      B -- YES --> D[PREVENT EXPOSURE]
  
```

ELIMINATE

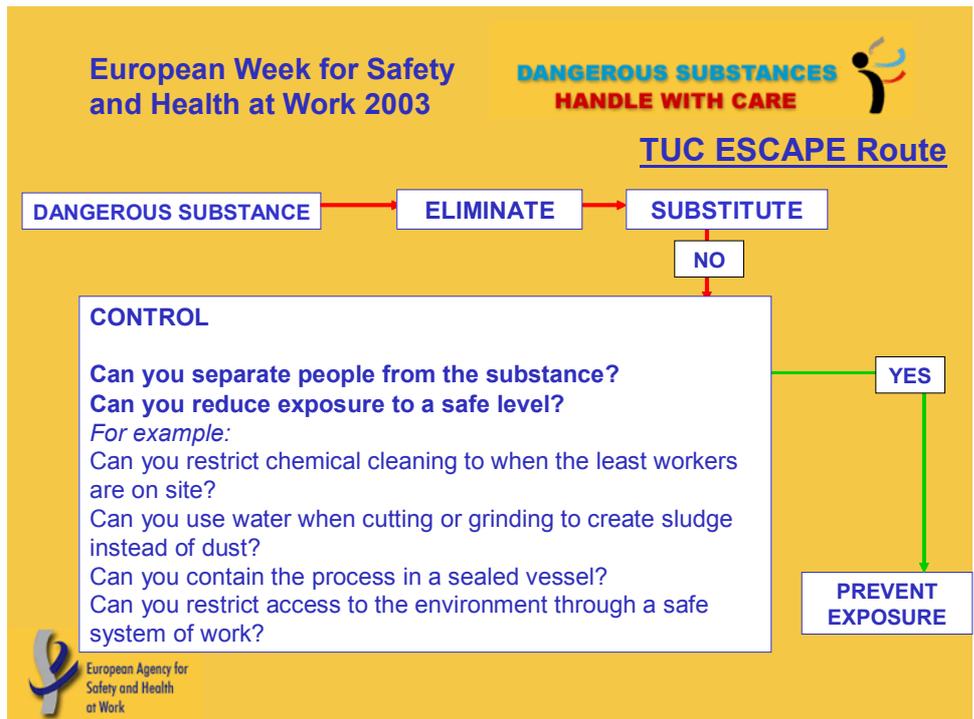
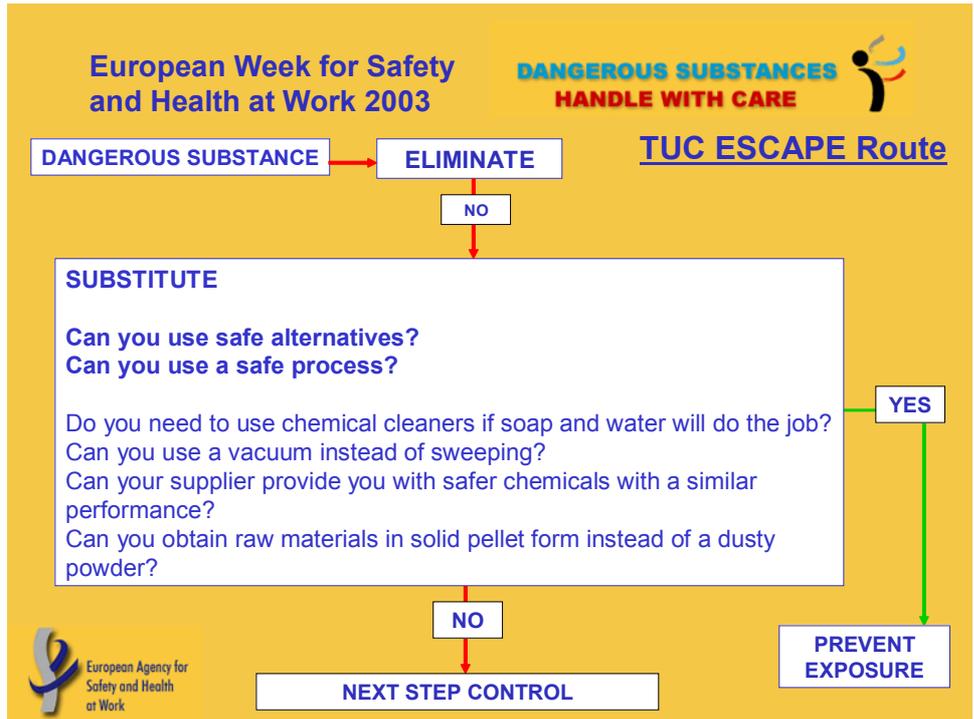
Can you stop using or producing the substance?
Can you stop the process or use a different method?

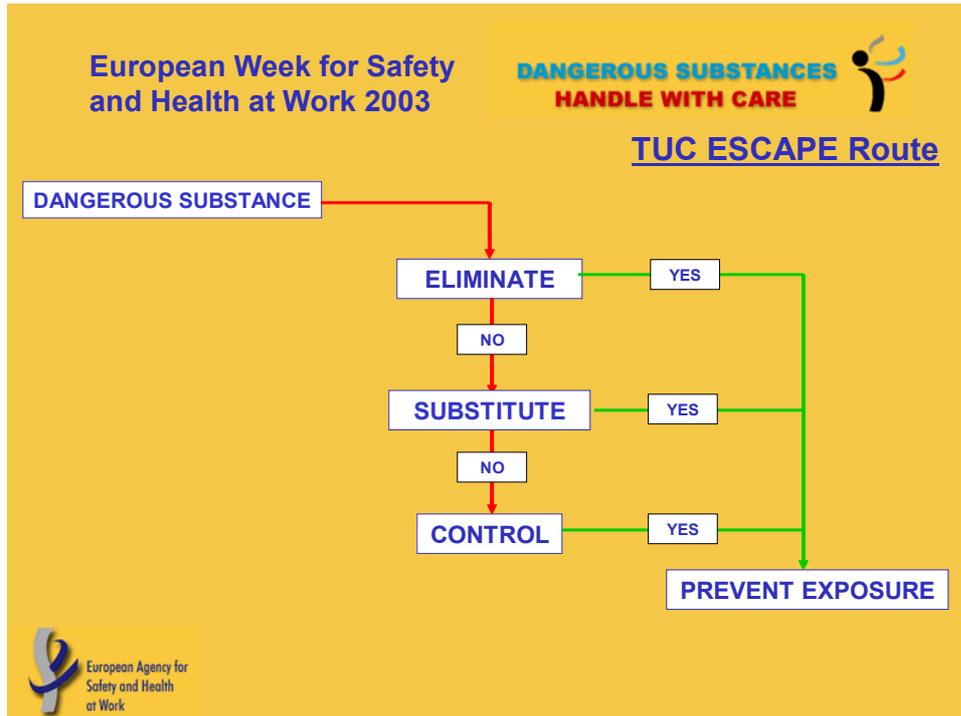
Do you need to use caustic soda if elbow grease will do the job?
Would you need to grind down components if the first cut was accurate?
Do you need to keep motor vehicle engines running while stationary at the depot?
Can you replace a diesel vehicle with an electric one?

NO → NEXT STEP SUBSTITUTE

YES → PREVENT EXPOSURE

European Agency for Safety and Health at Work





European Week for Safety and Health at Work 2003

DANGEROUS SUBSTANCES
HANDLE WITH CARE

Summary

Exposure to dangerous substances:

- Kills thousands of workers
- Causes disease in millions of others
- Is illegal
- Is preventable

Follow the TUC ESCAPE Route to Eliminate Substitute Control and Prevent Exposure to Dangerous Substances

European Agency for Safety and Health at Work

Activity USING COSHH ESSENTIALS

AIMS

To help us to:

- understand the process of COSHH assessment
- use COSHH Essentials

TASK

While it is not the job of the safety rep to do COSHH assessments, an understanding of the process gives safety reps a better grasp of the quality of the risk assessments in the workplace. In this way you have a better chance of convincing employers to comply with the law.

1. In your group, pick a problem that a member of the group has identified earlier in the course, and for which she/he has a chemical safety data sheet available
2. Go to the HSE's COSHH Essentials web site www.coshh-essentials.org.uk and click on the 'Worked Example' tab. This will show you how COSHH Essentials works
3. Then return to the COSHH Essentials home page and click on the 'Click here to get started' tab. Follow the online instructions to complete the online assessment for the substance that you have chosen
4. The online assessment will provide you with an assessment code and advice on how to protect yourself and others. Print off the advice that you have been given.

REPORT BACK

Elect one of your group to report back on your COSHH Essentials assessment and recommended control approach

RESOURCES

- A Data Sheet from your workplace
- Fact Sheet 6: Providing hazard information
- Fact Sheet 7: COSHH Essentials
- HSE COSHH Essentials web site
www.coshh-essentials.org.uk/

<p><i>Assessment criteria</i> COSHH: 2.2; 3.1</p>

FACT SHEET 6: Providing hazard information

Introduction

In almost all cases, assessments will start from suppliers' health and safety data sheets, and this may present a problem. Many safety representatives will be aware of the failings of data sheets but even getting hold of data sheets can still be difficult.

Some employers may want the assessment to show that current arrangements are adequate. They may be quite happy to go along with a data sheet which underestimates the potential hazards of a product. Safety representatives should try to ensure that assessments are made in the light of the fullest possible information. The starting point for that is the data sheet:

- Does the data sheet come up to basic standards?
- Does it tell you the chemical contents of the product?
- Does it describe the health hazards - short term and long term?
- Does it give advice about appropriate control measures?

Safety data sheets

Section 6 of *The Health and Safety at Work etc Act 1974* requires manufacturers, importers or suppliers to make available safety data sheets on the substances they supply to your workplace. In addition, the Chemicals (Hazard Information and Packaging) Regulations 2002, also known as the CHIP3 Regulations, requires suppliers to:

- identify the hazards of the chemicals they supply
- give information about the chemicals' hazards to their customers and
- package the chemicals safely

Safety data sheets should contain the following information:

- identification of the substance or preparation and company or undertaking
- composition of and information on the ingredients
- identification of hazards
- first aid measures
- fire fighting measures
- accidental release measures
- handling and storage
- exposure controls and personal protection
- physical and chemical properties
- stability and reactivity
- toxicological information
- ecological information
- disposal considerations
- transport information
- regulatory and
- other information

Indications of danger and symbols

Under Regulations 2(1) and 10(6) of CHIP3, chemicals must be classified under the different categories set out on the page below.

Column 1	Column 2	Column 3
Indication of danger	Symbol-letter	Symbol
Explosive	E	 <>
Oxidising	O	 <>
Extremely flammable	F+	 <>
Highly flammable	F	 <>
Very toxic	T+	 <>
Toxic	T	 <>
Harmful	Xn	 <>
Corrosive	C	 <>
Irritant	Xi	 <>
Dangerous for the environment	N	 <>

Labels

Substances dangerous for supply are also required to carry some information on their labels. This includes:

- the name, full address and telephone number of a person in an EEA State who is responsible for supplying the substance, whether she/he be its manufacturer, importer or distributor
- the name of the substance, being -
 - where the substance appears in the approved supply list, the name or one of the names listed therein for that substance, or
 - where the substance does not appear in the approved supply list, an internationally recognised name
- the following particulars, namely -
 - any indications of danger together with corresponding symbols
 - the risk phrases, set out in full
 - the safety phrases, set out in full, and
 - any EC number and, in the case of a substance which is listed in Part I of the approved supply list, the words "EC label"; and
 - where required the specified labelling phrase

New developments

The Chemicals (Hazard Information and Packaging for Supply) (Amendment) Regulations 2005, came into force on 31 October 2005. The regulations are known as CHIP 3.1. The regulations bring into legal effect all the new entries, revisions, deletions and amendments to the classification and labelling requirements of hazardous substances required by European legislation.

The Dangerous Substances Directive (67/548/EEC) sets out requirements to classify dangerous substances and, where they are supplied, to package and label them according to their hazards. Annex 1 of the Directive sets out the agreed classifications and labelling requirements for approximately 7000 substances. Amending regulations (CHIP 3.1) are required to implement Annex 1 changes. Chemical suppliers must comply with Annex 1 entries. CHIP 3.1 also makes a number of minor editorial changes to the existing CHIP 3 regulations to clarify or correct minor aspects.

REACH is an acronym used to describe the new EU chemical policy which is currently under negotiation. This new policy has been developed to deal with growing concern about chemicals in the environment.

Web pages

- HSE: CHIP resources page
www.hse.gov.uk/chip/index.htm
- HSE: CHIP – the law
www.hse.gov.uk/chip/law.htm
- HSE: latest developments including REACH
www.hse.gov.uk/chip/issues.htm
- HSE: Idiot's guide to CHIP
www.coshh-essentials.org.uk/assets/live/indg350.pdf

FACT SHEET 7: COSHH Essentials

In order to help employers to prevent or control exposure to hazardous chemicals, the HSE (in collaboration with the TUC and CBI) introduced Guidance in booklet form called COSHH Essentials. The Guidance is designed to help employers to meet their duties under the Control of Substances to Health Regulations. The Guidance was updated in 2003 and is available from HSE Books (www.hsebooks.com/Books or telephone 01787 881165).

Online COSHH Essentials

COSHH Essentials is also available on the HSE website at

www.coshh-essentials.org.uk

- COSHH Essentials provides advice on controlling the use of chemicals for a range of common tasks, eg mixing, or drying.
- For most tasks the website will take you through a number of steps and ask for information about your tasks and chemicals. This assessment will take several minutes to complete.
- For some processes, tasks or services you can now get direct advice.

COSHH Essentials does not deal with certain substances such as process generated fumes and dusts. The most pressing need was to deal with the very large proportion of hazardous substances under COSHH ie chemicals. It gives clear, practical advice on risk assessment and achieving adequate control.

COSHH Essentials covers:

Liquid and solid chemicals
Mixtures of chemicals
Some process dust and fumes
- wood dust and flour
- foundry, rubber and some soldering fumes

COSHH Essentials does not cover:

Other process fume - eg. welding
Other process dust - eg. quarry dust
Pesticides and veterinary medicines
Lead, asbestos or gases

Data sheet

First, you really need an up-to-date safety data sheet. The supplier must send data sheets with a first consignment for single chemicals and for mixtures if these are "dangerous for supply" as classified under Chemicals (Hazard Information and Packing for Supply) Regulations. Section 9 of the data sheet is required to show:

- the boiling point, or
- the vapour pressure with the temperature (°C) at which this was measured

Section 15 of the data sheet is required to show the risk phrases.

The basic approach

The COSHH Essentials approach consists of:

- the four control approaches to reducing exposure
- the easy steps to doing the risk assessment (see www.coshh-essentials.org.uk)
- the control guidance sheets:
 - general sheets to tell you how to use each control approach
 - more detailed sheets that give examples of good practice controls for common tasks
 - additional advice on avoiding skin and eye contact with chemicals

Control Approaches

The four control approaches are:

1	GENERAL VENTILATION A good standard of general ventilation and good working practice	Least reduction in exposure  Greatest reduction in exposure
2	ENGINEERING CONTROL Typically local exhaust ventilation ranging from a single point extract close to the source of hazards, to a ventilated partial enclosure. It includes other engineering methods of control, e.g. cooling coils for vapours, but not complete containment.	
3	CONTAINMENT The hazard is contained, or enclosed, but small-scale breaches of containment may be acceptable. Often used where a substance is very hazardous or a lot of it is likely to get in the air.	
4	SPECIAL Expert advice is needed in selecting control measures and you should seek further help.	

If you are using the more hazardous chemicals you are prompted to think about substituting them or using them in a safer form (eg pellets rather than powder).

Easy steps to assessment and control approach

By following the simple, interactive system you will get:

- a printout of the information you have entered and the control approach recommended by COSHH Essentials
- the option to print out control guidance sheets which set out the right controls for your chemical/task

Go to www.coshh-essentials.org.uk and click on “*Worked Example*” tab to see how online COSHH Essentials works. Then return to the COSHH Essentials home page www.coshh-essentials.org.uk and click on the ‘*Click here to get started*’ tab. Follow the online instructions to complete the online assessment for the substance that you have chosen.

HSE Easy Steps COSHH assessment

Process → How Many → Chemical Name → Hazard → Form → How Much → Summary → Advice

Workplace Activity **RISK ASSESSMENTS**

AIMS

To help us to:

- find out about how management conduct risk assessments in our workplaces
- find out whether other safety reps are satisfied
- gather examples of completed risk assessments on priority hazardous substances

TASK

Try to obtain the information listed below.

1. Speak to other safety representatives at your workplace. Ask them:
 - do they feel that the employer's risk assessments relating to hazardous substances are satisfactory?
2. Speak to your employer's safety manager (or other responsible person). Ask her/him:
 - what has been done about the legal requirements to assess risks under COSHH?
 - did a review of COSHH assessments take place following the legal changes that were introduced in April 2005?
 - who was involved in the risk assessment process?
 - what prevention or control measures were introduced as a result of the risk assessment process?
 - for examples of completed risk assessments (names could be deleted to preserve anonymity), that deal with substances that you consider are a priority.

Prepare a short report for the next session of the course

<p><i>Assessment criteria</i> COSHH: 2.3; 3.1</p>

Activity EVALUATING COSHH ASSESSMENTS

AIMS

To help us to:

- Compare COSHH assessments
- Identify strengths and weaknesses
- Suggest improvements

TASK

In your pair:

Look at examples of COSHH assessments gathered from your workplace activity (or provided by your tutor).

- Evaluate and compare two assessments
- Make proposals for improvements

REPORT BACK

Elect a spokesperson to report back with the results of your evaluation and suggestions for improvement

RESOURCES

- Fact Sheet 7: COSHH Essentials
- COSHH assessments from your workplaces (or provided by your tutor)
- A sample COSHH risk assessment form below

<p><i>Assessment criteria</i> COSHH: 2.3; 3.1</p>

SAMPLE COSHH RISK ASSESSMENT SHEET (Part1)

<i>COMPANY NAME</i>				
<i>AREA/PROCESS IDENTIFICATION</i>			<i>ASSESSMENT AREA NUMBER</i>	
<i>PROCESSES AND EXPOSURES</i>				
<i>PERSONS AT RISK</i>				
<i>SUBSTANCES USED</i>	<i>RECORD No.</i>	<i>QUANTITY</i>	<i>DURATION</i>	<i>ROUTE OF EXPOSURE</i>
1.				
2.				
3.				
4.				
5.				
<i>CONTROLS USED</i>				
1.				
2.				
3.				
4.				
5.				

This form should be used in workplaces or situations where there are chemicals or other potentially dangerous substances. Part 2 of the form is overleaf.

SAMPLE COSHH RISK ASSESSMENT SHEET (Part 2)

<i>MAINTENANCE, EXAMINATION AND TESTING OF CONTROLS</i>		
<i>WORKPLACE AIR MONITORING</i>		
<i>HEALTH SURVEILLANCE</i>		
<i>INFORMATION, INSTRUCTION AND TRAINING</i>		
<i>ARRANGEMENTS TO DEAL WITH ACCIDENTS, INCIDENTS AND EMERGENCIES</i>		
<i>ACTION REQUIRED</i>	<i>RESPONSIBILITY</i>	<i>DATE</i>
1.		
2.		
3.		
4.		
5.		
<i>SIGNATURE</i>	<i>DATE</i>	<i>DATE FOR REVIEW</i>

Activity UNDERSTANDING WELs

AIMS

To help us to:

- Develop an awareness about WELs
- Apply EH 40 to the workplace

TASK 1

In your small group, use the document EH40 or Fact Sheet 8 to describe:

- what is meant by a workplace exposure limit (WEL)
- an 8-hour reference period and a short term reference period

TASK 2

Consider the following test results using **either** the book form of EH 40 **or** the online version of Workplace Exposure Limits (WELs) at www.hse.gov.uk/coshh/table1.pdf and Calculation Methods at www.hse.gov.uk/coshh/calcmethods.pdf

- Laboratory workers are exposed to carbon disulphide. Monitoring results show an 8 hour average of 10ppm
- Two large photocopiers are situated in an open plan office. During busy periods the ozone levels have been recorded at 0.3ppm
- Continuous monitoring over an 8 hour period shows that hospital workers are being exposed to glutaraldehyde levels of 0.23 mg/m³
- An operator works for 7 hours 20 minutes on a process involving picric acid. The average exposure during that period is measured at 0.12 mg/m³
- An operator works a 12 hour shift each day for five days and then has seven days rest. The process involves aniline. While at work, the operator is exposed to 4mg/m³

- Do the test results exceed the workplace exposure limit for each substance?
- What points would you make to your employer about each of the results?

REPORT BACK

Elect a different spokesperson to report back for each task

RESOURCES

- Fact Sheet 8
- EH40 Workplace Exposure Limits 2005 (as updated from time to time) **or** the online version of Workplace Exposure Limits (WELs) at www.hse.gov.uk/coshh/table1.pdf and Calculation Methods at www.hse.gov.uk/coshh/calcmethods.pdf

<p><i>Assessment criteria</i> COSHH: 2.1; 2.3; 3.1</p>
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Fact Sheet 8:

Monitoring chemicals in the air & WELs

Workplace Exposure Limits

One of the ways of checking whether controls are working is by monitoring workers' exposure and comparing the results with official limits. From April 2005, Workplace Exposure Limits (WELs) have replaced maximum exposure limits and occupational exposure standards.

HSE has established WELs for a number of substances hazardous to health. These are intended to prevent excessive exposure to specified hazardous substances by containing exposure below a set limit. A Workplace Exposure Limit is the maximum concentration of an airborne substance, averaged over a reference period, to which employees may be exposed by inhalation. Workplace Exposure Limits (WELs) are listed in the HSE publication EH40/2005 (which gets updated from time to time) and are reproduced online at www.hse.gov.uk/coshh/table1.pdf The list of WELs is legally binding.

Correctly applying the principles of good practice from COSHH referred to in Fact Sheet 4 above should mean that exposures are controlled below the WEL. As we have seen earlier during the course, following amendments to the COSHH Regulations, control of exposure under COSHH will only be treated as adequate where any workplace exposure limit (WEL) is not exceeded.

PPM & mg/m³

There are two different ways of measuring airborne chemicals, as *parts per million* (PPM) and *milligrams per cubic metre* (mg/m³). The workplace exposure limits (WELs) under COSHH use both:

- the ppm method measures the particles by volume, counting the number of particles of the hazardous substance for every million particles of air
- the mg/m³ method measures the weight of the amount of hazardous substance in milligrams for every cubic metre of air

Workplace exposure limits and 'Comments'

One of the columns in the list of WELs in EH40 is called '*Comments*'. It is not part of the approved list of WELs but contains a number of abbreviations. For example:

- Sk means that the substance can be absorbed straight through the skin into the bloodstream
- Sen means capable of causing respiratory sensitisation
- HSC/E plans to review the limit values for this substance

The 8-hour reference period

According to HSE in EH40, the term 8-hour reference period relates to the procedure whereby the occupational exposures in any 24-hour period are treated as equivalent to a single uniform exposure for 8 hours (the 8-hour time-weighted average (TWA) exposure).

- **Example 1**

The operator works for 7 hours 20 minutes on a process in which s/he is exposed to a substance hazardous to health. The average exposure during that period is measured as 0.12 mg/m³

The 8-hour TWA =
7 hours 20 minutes (7.33hours) at 0.12 mg/m³
0 hours 40 minutes (0.67 hours) at 0 mg/m³

$$\text{That is } \frac{(0.12 \times 7.33) + (0 \times 0.67)}{8}$$

$$= 0.11 \text{ mg/m}^3$$

- **Example 2**

An operator works for eight hours on a process in which s/he is exposed to a substance hazardous to health. The average exposure during that period is measured as 40 ppm.

The 8-hour TWA =

$$\frac{(40 \times 8)}{8}$$

$$= 40 \text{ ppm.}$$

- **Example 3**

An operator works for a 12-hour shift each day for five days, and then has seven days' rest. The exposure limits are based upon an 8-hour reference period in each 24 hours in which an exposure occurs; the seven days rest makes no difference. While at work, the operator is exposed to 4 mg/m³.

The 8-hour TWA =

$$\frac{(4 \times 12)}{8}$$

$$= 6 \text{ mg/m}^3$$

The short-term reference period

Exposure should be recorded as the average over the specified short-term reference period, normally 15 minutes, and should be determined by sampling over that period. For short emissions of less than the reference period, which may still have the potential to cause harm, appropriate action should be taken to ensure that a suitable and sufficient risk assessment is carried out to ensure that there is no risk to health from such exposures.

(8 hour and short term reference periods and examples above are extracts from EH 40 Calculation Methods at www.hse.gov.uk/coshh/calcmethods.pdf)

Monitoring Equipment

Dust Lamp: A beam of strong light is shone through cloud and highlights dust particles. The lamp shows up a problem but does not measure quantity of dust.

Personal Sampler - pumps: Worn by the operator. Sucks air at a known rate through a filter or absorbent tube for a known length of time, then the filter or tube is analysed in a laboratory to show the extent of air contamination. They can be inaccurate because of pump speed variation and different sorts of substances or dust require different filters pumps and laboratory techniques.

Personal Sampler - passive: A badge made of material which absorbs a particular contaminant. At the end of the sampling period the badge is sent for analysis in the laboratory. This is not very accurate and only available for some substances.

Detector Tubes - with hand pump: Used to take "snap" samples with the results available immediately. The hand pump is used to pass air through a glass tube containing special chemicals. Pollutant in the air reacts with the chemicals and makes them change colour. The extent of the colour change indicates the extent of the contamination (works like a breathalyser). Can be inaccurate and gives no idea of variation but can be useful for spot checks and preliminary tests and could be useful to safety reps.

Continuous Monitoring Equipment: Various types, for gases and vapours using infra-red beams, photosensitive cells, gas chromatography and for dust monitoring using light, beta rays or vibrating quartz crystals. Sophisticated, expensive (but cuts out laboratory costs) test equipment which gives *accurate*, instant results, can be used to set off an alarm, shut down a process or record variations during the test period.

Biological Monitoring: Various techniques include blood and urine samples. But medical monitoring may detect but does not prevent disease. Could be used to weed out "sensitive" individuals instead of tackling the hazard.

Trade union checklist on exposure limits and monitoring

UK benzene limit leaves workers at risk

Exposure to levels of benzene below that allowable in UK workplaces may pose a health risk, suggests new research. The study has shown that workers who inhaled less than one part per million (1ppm) had fewer white blood cells than those who were not exposed. The UK exposure standard for benzene is currently 1ppm averaged over a working day, suggesting UK workers could be facing potentially health damaging exposures even if workplace safety limits are not exceeded. The research, by US and Chinese scientists, is published in the journal *Science*.

www.tuc.org.uk/h_and_s/tuc-9132-f0.cfm

- ✓ WELs are not "safe levels". Being within the limit does not absolutely ensure safety and health
- ✓ WELs are not sharp dividing lines between safe and unsafe conditions

- ✓ Many limits assume good working conditions, healthy average age, and non-pregnant workers
- ✓ The exposure limits are based on breathing in, not skin contact or swallowing. Some substances, marked Sk in EH40, are known to get into the body through the skin
- ✓ Many harmful or suspect substances have no official limit. Employers still need to set their own limits for these. Safety reps must know what these limits are, how they were set, and make sure exposure is kept as low as possible
- ✓ Limits should be reduced significantly if mixtures or substances are involved. EH40 gives guidance on limits for mixtures. Some chemical mixtures are much more dangerous than their ingredients in isolation
- ✓ Standards in some other countries may be better than those in the UK
- ✓ Safety reps should make sure that members understand that the official WELs do not guarantee their safety
- ✓ When designing control measures, the aim should be to get as near to zero exposure as possible, not to stay just within the WEL
- ✓ Monitoring may be needed at planned intervals, depending on the hazard. Some serious hazards need continuous monitoring
- ✓ People that carry out monitoring must be trained and competent. Safety reps should be involved in their selection. It helps to have someone prepared to cooperate with unions and consult them
- ✓ Tests must be prepared in advance. Safety reps should be involved in planning beforehand to establish:
 - what the tests are for
 - when and where the tests will be carried out
 - that complete work cycles and the worst conditions and abnormal situations are tested
 - that personal sampling (sensors on people) will be used, and not just fixed samples
 - a high level accuracy of the results
- ✓ Details of how and when the results will be reported should be agreed
- ✓ Safety reps should get copies of the results
- ✓ The results should be presented clearly and explained properly
- ✓ Prevention and control measures should be recommended if the monitoring results show that this is necessary

Activity COSHH QUIZ

AIMS

To help us to:

- use some of the terms associated with COSHH
- use a glossary
- have fun

TASK

You will be divided into pairs. In your pair, look at the multiple-choice quiz and the words/terms relating to COSHH. Use the notes that you have made during the course and the Glossary in Fact Sheet 9 below, to help you with any term or word that you are not familiar with. Tick the boxes that you think provide the most suitable definitions.

REPORT BACK

When you have finished, the whole group will discuss their answers together. You can count up your scores for a bit of fun!

RESOURCES

- Fact Sheet 9: Glossary
- Your course notes

<i>Assessment criteria</i> <i>COSHH: 2.1</i>

Multiple choice quiz

Tick one box per question

1. A respiratory sensitiser is
 - A new type of inhaler for asthma
 - A substance that can cause occupational asthma
 - A form of breathing apparatus
2. Mg/m³ is
 - A unit of measurement which indicates by weight the amount of the substance in the air
 - The short name for Metro Goldwn Mayer
 - A chemical formula for maleic anhydride
3. Biological agents are
 - Government inspectors
 - Cleansing materials
 - Bacteria and other micro-organisms
4. R23 is
 - A benefits claim form
 - A Risk Phrase which means toxic by inhalation
 - A form that is used to notify a sick worker that they have to change their job
5. An acute effect means
 - A long term effect
 - An effect that only happens in the workplace
 - A short term or immediate response to exposure
6. A workplace exposure limit (WEL)
 - Is a target that employers should eventually aim for
 - Is a rough guide for employers when doing a COSHH assessment
 - Should not be exceeded by employers
7. Safety data sheets
 - Must be supplied by suppliers of hazardous substances under CHIP
 - Are the same as risk assessments
 - Are confidential documents prepared by suppliers to protect trade secrets
8. CHIP Regulations
 - Are enforced by hygiene inspectors in works canteens using deep fat fryers
 - Will eventually replace the COSHH Regulations
 - Is the short name for the Chemicals (Hazard Information and Packaging for Supply) Regulations
9. A short-term reference period for a WEL is normally calculated over
 - 8 hours
 - 15 minutes
 - A period of exposure that is less than the normal working shift
10. Carcinogen is another word for
 - A cancer causing substance
 - A mixture of a number of toxic substances
 - A doctor who conducts health surveillance at work

Fact Sheet 9: Glossary

(Some of the explanations of the terms below were previously taken from an HSE web page which has now expired)

Brief explanation of some of the technical terms

- **Acute effect:** immediate response to exposure, such as feeling sick, runny eyes.
- **ACoP** **Approved Code of Practice**
ACoPs explain how to comply with specific laws and have a special legal status. If a party is prosecuted for a breach of health and safety law and it is proved they did not follow the relevant provisions of the ACoP, they will need to show that they complied with the law in some other way or a court will find them at fault.
- **BMGVs** **Biological Monitoring Guidance Value**
Biological monitoring guidance values are tools to help employers decide if they are adequately controlling chemicals under COSHH. They are values set for the amount of a substance (or its metabolite) in blood or urine which are either thought to have no observed adverse effect on workers' health or that is achievable by good practice in industry.
- **Biological agents** Biological agents are bacteria and other micro-organisms. They are controlled by COSHH if they are directly connected with the work or if exposure is incidental, such as with farming, sewage treatment or healthcare. But if agents are not directly connected with the work and they are outside the employer's control, such as catching a cold from a workmate COSHH will not apply
- **Carcinogen:** A cancer-causing substance
- **Chemical name:** Not the same as a brand name or a trade name. You will need the chemical name to check the effects in reference books
- **CHIP Regulations** Chemicals (Hazard Information and Packaging for Supply) Regulations
- **Chronic effects:** build up over a period to time. For example, exposure to asbestos can cause cancer of the lining of the chest. This may take many years to show.
- **Competent person:** A person having sufficient skill, knowledge experience and expertise to undertake the tasks defined, assessment, inspections or monitoring
- **COSHH** Control of Substances Hazardous to Health
- **COSHH Essentials** This is simple guidance on how to control hazards from chemicals.
- **EH40** This priced publication lists the workplace exposure limits (WELs) for various substances
- **Exhaust Ventilation:** A system designed to extract the substance away from the breathing zone of the worker
- **Hazard** This is the intrinsic property of a substance to cause harm. For example concentrated hydrochloric acid is corrosive and can

cause burns if your skin comes into contact with the acid

- **Hazardous substances** Hazardous substances are anything that can harm your health when you work with them if they are not properly controlled. For example, by using adequate ventilation
- **Health surveillance** Health surveillance involves checking the health of individual employees exposed to specific health risks at work. This is done by looking for adverse changes to their health which may be caused by hazardous substances. It is most effective when these changes can be detected at an early stage in the disease process. For example, trained supervisors could check employees' skin for dermatitis
- **Inhalation:** Breathing in substances
- **Ingestion:** Substances getting into the body through the mouth, such as contaminated food
- **mgm³ (milligrams per cubic metre):** a unit of measurement which indicates by weight the amount of the substance in the air
- **Mutagenic:** A substance causing changes to cells of the body
- **Occupational hygienist:** a qualified person who is concerned with conditions in the working environment that may lead to ill health
- **PPE** Personal protective equipment involves putting a barrier on the worker, rather than getting rid of the problem. For example, a mask, gloves, overalls
- **Personal sampler:** To check what a working is breathing in. It is worn by the worker and shows the contamination in the breathing zone over a period of time
- **ppm (parts per million):** a unit of measurement which indicates by volume the amount of a substance as a proportion in the air
- **Risk** This is the likelihood that a substance will cause harm. For example: Concentrated hydrochloric acid is corrosive and can damage your skin (hazard). If the acid is stored in a secure, closed container this is not likely to happen and the risk is very low. But if the container is opened and some acid is spilled (for example, on a bench) there is a higher risk that you might get the acid onto your skin.
- **R phrases** These are phrases assigned under CHIP to chemicals. For example, R22 - Harmful if swallowed, R23 - toxic by inhalation. They describe the hazards of a chemical / product and are included in safety data sheets (SDS)
- **RPE** Respiratory protective equipment. For example, masks or an air stream helmet
- **SDS** Safety Data Sheet
These must be supplied by suppliers of hazardous substances under CHIP. These must contain information about the product under a series of headings
- **Sen** This abbreviation is used in EH40 to mean that a substance is capable of causing respiratory sensitisation. Once people have been exposed to these substances, they may become sensitised and even small quantities can cause problems in the future (from a runny nose to

asthma). This will not affect all workers, but it is impossible to tell who will be affected. More information on this is given in EH40

- **Sk or skin notation** The letters Sk (often used in EH40) mean that a substance can be absorbed into the body through unbroken skin, adding to the amount taken in through by breathing
- **Teratogen:** A substance that can cause defects in the child of a person who has been exposed
- **TWA (8-hour)** 8-hour Time Weighted Average
Occupational exposures in any 24-hour period are treated as equivalent to a single uniform exposure for 8 hours
- **Workplace Exposure Limit** This is the maximum concentration of an airborne substance, averaged over a reference period (normally 8 hours or 15 minutes), to which employees may be exposed by inhalation. Control of exposure will only be adequate if the WEL is not exceeded

Activity **YOUR UNION STRATEGY**

AIMS

This activity will help you:

- think about the main points for action
- decide on priorities
- plan your union strategy

TASK

Use the worksheet on the next page to outline your union strategy on the COSHH Regulations, and COSHH Essentials. Concentrate on what you and other union reps should be doing, and on what your management should be doing.

Points to think about include:

- priority hazards
- tackling problems with hazardous substances
- getting management to implement or review their COSHH assessments and arrangements under the amended COSHH Regulations and COSHH Essentials
- obtaining further information
- building union organisation
- involving and informing members

REPORT BACK

You will be asked to report back to the rest of the group with the main points of your strategy

RESOURCES

- Fact Sheets 10 and 11 below
- Your course notes
-

<i>Assessment criteria COSHH: 3.1</i>

Worksheet: Union Strategy

Priority problems and hazards:

Steps the union must take:

Points to put to management:

FACT SHEET 10:

TUC action checklists on COSHH and COSHH essentials

The TUC encourages safety reps to use their rights under the Safety Representatives and Safety Committees Regulations to fully engage in tackling hazardous substances through COSHH and COSHH Essentials. In light of the amendments to the COSHH Regulations that came into effect in 2005, safety reps should be consulted about the review of assessments that should take place.

Obtaining information on substances and processes

- ✓ Are unions consulted and informed prior to new substances being introduced?
- ✓ Is management already passing on information about substances?
- ✓ Is this information kept up-to-date?
- ✓ Are all containers properly labelled?
- ✓ Are there reliable chemical safety data sheets on all hazardous substances used at work?
- ✓ Is there a central register, which safety reps can see, of all substances used at work?
- ✓ Are safety reps checking independently on the hazards of substances?

Negotiation and consultation procedures

- ✓ Has the employer agreed to keep safety reps informed about the COSHH strategy?
- ✓ Is there a procedure for handling disagreements about assessments?
- ✓ Have dates, priorities, and targets been agreed?
- ✓ Is progress on COSHH monitored through a joint safety committee?
- ✓ Are the workforce kept informed of progress?

Has management:

- ✓ involved, and consulted with safety reps, particularly in relation to any review of assessments that has taken place?
- ✓ assessed health risks in relation to actual workplace conditions?
- ✓ used COSHH Essentials in appropriate circumstances?
- ✓ made sure assessments are done by a 'competent person'?
- ✓ provided written copies of assessment?
- ✓ looked for safer alternatives?
- ✓ devised control measures?
- ✓ assessed existing control measures, improving them if necessary?
- ✓ applied the eight principles of good practice that came into effect in April 2005?
- ✓ used personal protective equipment as a temporary or last resort?
- ✓ made sure control measures work?
- ✓ regularly examined and tested control measures?
- ✓ ensured that the new workplace exposure limits (WELs) are not being exceeded?
- ✓ reduced exposure as low as possible?
- ✓ arranged for health monitoring (if appropriate)?
- ✓ made arrangements for:
 - storage, handling, transport?
 - spillage control?

- disposal?
- maintenance work?
- housekeeping?
- first aid?
- made sure workers are fully trained and informed?
- kept records?
- ✓ reviewed control measures regularly?
- ✓ reviewed COSHH assessments in light of the amendments to the COSHH Regulations in 2005?

Have safety reps:

- ✓ made use of TUC COSHH training courses
- ✓ carried out regular inspections?
- ✓ critically examined all work operations involving substances?
- ✓ asked members whether they suffer any symptoms that they think are attributable to hazardous substances?
- ✓ used questionnaires or body mapping with their members?
- ✓ examined the accident book and sickness records?
- ✓ produced written reports and discussed these with members?
- ✓ met with management and agreed priorities for COSHH risk assessments to be carried out?
- ✓ asked management to review COSHH assessments in light of the amendments to the COSHH Regulations in 2005?
- ✓ made sure that safety reps and workers are involved in the assessment process?
- ✓ checked that all operations involving substances have been covered?
- ✓ agreed priorities for action with management, with a timetable for improvements?
- ✓ made sure that assessments are not seen as an end in themselves? The value of an assessment is to identify areas where work can be made healthier and safer
- ✓ ensured that management have taken appropriate steps to prevent ill health to employees, using the COSHH standards that are outlined above?
- ✓ helped any members who have suffered from ill health because of substances, to obtain advice from their union about compensation and rights to benefits?

Fact Sheet 11: Further Information

European Agency for Safety and Health at Work

- Numerous Factsheets on Dangerous Substances
<http://agency.osha.eu.int/publications/factsheets/index2.htm>

European Trade Union Institute for Research, Education and Health and Safety

- Chemicals web page (including latest on REACH)
http://hesa.etui-rehs.org/uk/dossiers/dossier.asp?dos_pk=1

Hazards magazine website

Excellent news and resources on the Hazards web resource page at www.hazards.org

Hazards factsheets

- No. 63 Reproductive health at work: women
- No. 61: Body mapping: body of evidence
- No. 54: Cancer and occupation
- No. 53: Toxics use reduction
- No. 41: Solvents and brain damage
- No. 40: Multiple chemical sensitivity
- No. 39: Asthma and work
- No. 37: Fumes from burning plastic
- No. 33: Cutting fluids/machining fluids
- No. 31: Substitution of hazardous substances
- No. 23: Wood preservatives
- No. 22: Pesticides safety
- No. 16: Chemical exposure standards
- No. 12: Textile chemical hazards
- No. 11: Polychlorinated biphenyls
- No. 7: Diesel exhaust fumes

£1.50 each for union subscribers, £6 for non-subscribers

HSE COSHH website

The HSE have a specific web page which draws together HSE information on controlling hazardous substances in one place at www.hse.gov.uk/coshh/index.htm
This includes details of the latest publication on workplace exposure limits (WELs), *EH40/2005 Workplace exposure limits*

HSE COSHH Essentials website

The HSE have a specific web page giving advice on controlling the use of chemicals for a range of common tasks at www.coshh-essentials.org.uk/

HSE priced and free publications on hazardous substances

- For all the latest documents containing general standards and guidance on hazardous substances, go to the HSE web page www.hse.gov.uk/coshh/index.htm
- Alternatively, obtain a free copy of the latest HSE Books catalogue, CAT 34, by telephoning 01787 881165

International Agency for Research on Cancer

News and resources at www.iarc.fr/

Labour Research Department

- Hazardous substances at work – a safety representative's guide £4.25

London Hazards Centre

- The Chemical Hazards Handbook
www.lhc.org.uk/members/pubs/books/chem/chAAAAAA.htm
- Chemical safety legislation
www.lhc.org.uk/members/pubs/factsht/63fact.htm
- Formaldehyde
www.lhc.org.uk/members/pubs/factsht/82fact.htm

Pesticide Action Network

News and resources at www.pan-uk.org/

TUC

- The TUC hazardous chemicals web page
www.tuc.org.uk/h_and_s/index.cfm?mins=263
- TUC ESCAPE route for dangerous substances
www.tuc.org.uk/extras/euroweek.ppt
www.tuc.org.uk/h_and_s/tuc-7191-f0.cfm
- Chapter 21 of TUC Hazards at Work – Organising for safe and healthy workplaces
- Essential information for safety representatives. Keep up to date on health and safety by reading *Risks*, the TUC's weekly e-bulletin for safety representatives at www.tuc.org.uk/h_and_s/index.cfm

Trade union information

- Many unions provide guidance on chemicals and dusts. The website addresses of all trade unions are on the TUC website at www.tuc.org.uk/tuc/unions_main.cfm. Hazards magazine has listed the health and safety pages of most trade unions at www.hazards.org/links/ukunionlinks.htm
- Contact your union, or visit your union's website to find out if they produce any guidance. For example, BFAWU produces a guide to COSHH at www.bfawu.org/health-control.htm and Chapter 23 of the T&G safety representative's handbook covers hazardous substances

Activity **LEARNING OPPORTUNITIES**

AIMS

To help us to:

- identify future learning needs
- consider ways you will meet those learning needs

TASK

In your pair:

- 1 Identify your other learning needs for health and safety
- 2 What learning opportunities are provided by the TUC or your union to meet your learning needs?
- 3 Identify the steps that you need to take to make use of the learning opportunities

REPORT BACK

Prepare a short report for the rest of the group.

RESOURCES

- Details of TUC core and short courses from your tutor
- Details of your union courses from your union website

Course review and evaluation

We hope that you have enjoyed the course. To help us make future courses more effective we would like your feedback. Please:

- contribute to a collective feedback session that your tutor will organise
- fill in the evaluation form on the next two pages and return it to her/him

End of Course Evaluation

Please take time to complete the following. Considered and constructive feedback will help us to ensure that the course is relevant to your needs as union representatives.

1. What were your aims/expectations for the course?

2. To what extent have these been met?

3. What, if anything, do you feel you have gained/achieved that you did not expect at the outset?

4. How would you rate the support you have had?

Tutor support	<i>Very good</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Weak</i>
Group support	<i>Very good</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Weak</i>
Course materials	<i>Very good</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Weak</i>
Other resources	<i>Very good</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Weak</i>

Comment

5. How did you find the teaching and learning methods used on the course?

Group Work	<i>too much</i>	1	2	3	4	5	<i>too little</i>
Individual	<i>too much</i>	1	2	3	4	5	<i>too little</i>
Exercises	<i>too much</i>	1	2	3	4	5	<i>too little</i>
Written work	<i>too much</i>	1	2	3	4	5	<i>too little</i>
Workplace	<i>too much</i>	1	2	3	4	5	<i>too little</i>
Activities	<i>too much</i>	1	2	3	4	5	<i>too little</i>

Comment

6. How do you think what you have got out of this course will help you in your work/union?

7. Having successfully completed your course, what are your learning priorities now?

8. Any other comments?
