Control of Substances Hazardous to Health (CoSHH)

Introduction

This guidance note has been developed to assist Heads of College, Schools or Units collectively known as Heads of Management Units (HoMU) in implementing good practice in the areas under their control in relation to the purchase, handling, use, storage and disposal of chemicals recognised as being potentially hazardous to health. This guidance is a summary of the COSHH Regulations 2002 which are a legal framework for controlling exposure to hazardous chemicals.

Note: Compliance with the COSHH regulations should not be seen simply as a form filling exercise. The assessment should be viewed as an essential decision-making process on the control measures required to be implemented to ensure minimum exposure to hazardous chemicals is achieved. The decisions made should be based on the chemical information supplied and obtained and the reaction conditions to be applied to the hazardous chemical.

Definition of a Hazardous Substance

There are many different definitions of hazardous substances but the following criteria are commonly accepted as some of the most useful descriptions:

- Substances hazardous to health are defined under COSHH as those that have the properties of being Very Toxic; Toxic; Corrosive; Harmful or Irritant.
- Chemicals that have been assigned a Workplace Exposure Limit (WEL) by the Health and Safety Executive (for further information see HSE Publication EH40, Workplace Exposure Limits)
- Any dust with an average concentration in air that exceeds the levels specified in the COSHH regulations (currently a concentration of greater than 10mg m\(^{-3}\) of inhalable dust or 4mg m\(^{-3}\) of respirable dust as a time weighted average over an 8-hour reference period)
- Biological agents that are directly connected with a work activity (e.g. Legionella bacteria arising from water cooling towers present in the workplace)
- Other substances that are hazardous to health that don’t fall into the above categories. (e.g. asphyxiant gases, sensitisers, carcinogenic substances etc.)

Requirements of the CoSHH Regulations

The CoSHH regulations impose duties on both employers and employees. To ensure compliance with the regulations Heads of management Units should ensure that measures are in place to comply with the following requirements in respect of work under their control.

- Assess the risk to all staff, students and visitors from all hazardous substances that are present or produced in the workplace.
- Prevent or control the exposure to hazardous substances of personnel and others who may be affected by them (including students, visitors, contractors and members of the public)
- Ensure that control measures both engineering and personal protective equipment (PPE) are properly used and maintained. This should include Standard Operating Procedures (SOPs) identified as part of the control criteria.
• Where necessary arrange for monitoring of workplaces using appropriate detection methods (short and long term) to ensure Workplace Exposure Limits are not being exceeded.

• Where appropriate arrange for health surveillance of staff routinely handling/using chemicals which can cause severe damage to health. Particular care should always be taken where substances known to be respiratory or skin sensitisers are in use. For further information on health surveillance requirements please contact the Occupational Health Unit.

• Provide personnel and others with suitable and sufficient information, instruction and training so they can undertake activities using hazardous substances safely with minimum exposure.

To ensure the safety of everyone working in areas where hazardous substances are in use, all employees, visitors and students must:

• Follow Standard Operating procedures and safe working practices at all times when working with hazardous substances.

• Use the required control measures (including PPE) properly and report defects and missing equipment to the appropriate person (line manager, supervisor, safety coordinator) as soon as possible.

• Attend health surveillance appointments as requested and cooperate with the occupational health team as required to ensure any possible issues are identified as quickly as possible.

**COSHH Assessment Principles of Good Practice**

When carrying out a CoSHH risk assessment the following hierarchy regarding the safe use of hazardous chemicals should be applied to reduce the risk of exposure to a dangerous chemical as low as reasonably practicable:

1. **Prevent exposure to the substance where reasonably practical**
   a. Eliminate the hazardous substance from the process entirely if possible e.g. use steam cleaning as an alternative to the use of harmful cleaning solvents / chemicals
   b. Use a safer chemical alternative to one or more of the substances (e.g. change a solvent-based paint for a water-based paint to reduce the risk form fumes).
   c. Use the hazardous substance(s) in a more controllable form (e.g. pellets rather than powders)
   d. Develop a standard operating procedure to help minimise potential exposure. By following a standard procedure that has been risk assessed, the likelihood of mistakes is reduced

2. **Where exposure prevention is not practical it must be controlled by:**
   a. Providing engineering equipment and facilities to ensure minimum exposure, any such equipment must be carefully selected and adequately maintained. Users should routinely check that engineering control measures are functioning properly. Suitable equipment may include the following:
      • A fully enclosed system (e.g. glovebox)
      • Local exhaust ventilation (e.g. fume cupboards, safety cabinets)
      • Provision of room extraction / ventilation systems
   b. Provision of suitable personal protective equipment (PPE) which is fit for purpose, reduces the risk of exposure to the substance and does not in itself introduce a more severe hazard.
   c. Avoiding exceeding the workplace exposure limit for any chemicals involved in the process, this may require testing or monitoring to be performed in the working area.
   d. Other control measures such as provision of suitable chemical storage, handling and transport equipment and hygiene facilities and a safe mechanism of disposal may all reduce the risk of a serious exposure.
e. Changes to systems of work to minimise the number of personnel potentially at risk of exposure can be effective e.g. carrying out certain procedures such as painting out of hours would reduce the number of people exposed to paint fumes.

The CoSHH Assessment Process

The cornerstone of the COSHH Regulations is that an ‘assessment’ must be undertaken prior to work commencing. HoMU are free to develop COSHH Assessment Forms which they feel best suit their needs. Examples of COSHH forms are available on the SEPS website.

It is recommended that an activity based approach is used to complete the COSHH assessment and that the process is undertaken by personnel who have knowledge, experience and information regarding the risks associated with the activity. Where possible all COSHH assessments should be formally recorded even those where the activity is considered trivial and only involves a single chemical substance even if this substance’s only hazard property is noted as flammable. Processes such as solvent distillation and the generation of a flammable gas atmosphere such as hydrogen are covered by the Dangerous Substances and Explosive Atmospheres (DSEAR) regulations and a DSEAR Assessment should be completed for this type of work. To be effective, the COSHH assessment should:

- Consider the chemicals present, used or likely to be produced including by-products and intermediates if exposure is possible
- Identify the properties of these substances
- Identify the hazards associated with these substances
- Identify possible exposure routes by which personnel and others may come into contact with the substance
- Identify all personnel (and others) who may be at risk to exposure as a result of this chemical activity.
- Take into account personnel who may be particularly at risk due to their physical condition (e.g. young persons, pregnant females and staff with known medical conditions).

Note: A substantial amount of information will be provided by Safety Data Sheets (SDS) to assist with chemical identification requirements but these sheets by themselves do not constitute as a COSHH assessment meaning that a separate assessment will be required before starting a process.

If during the evaluation of the process, a risk of exposure is identified the assessment should be expanded to include precautions and control measures designed to minimise that exposure.

- Specified control measures put in place to minimise exposure e.g. Fume Cupboards, Safety Cabinets, Local Exhaust Ventilation (LEV) and the type of PPE to be worn.
- Where necessary instructions on how to use the specified control measures and training to personnel who will be involved in the procedure.
- The Standard Operating Procedure (SOP) to be followed to ensure exposure is kept to a minimum which should be understood and agreed by the user prior to beginning work.
- Some systems (e.g. LEV) must be maintained in accordance with the manufacturer’s instructions and should be inspected annually by a qualified person.

Note: The examination of ducted fume cupboards and other room LEV systems is presently arranged by the University’s Estates & Buildings Service. The HoMu is responsible for ensuring arrangements are in place for the examination and maintenance of safety cabinets.

It is always possible that an accident spillage or other unforeseen event could cause a hazardous substance to be released the risk assessment should include a summary of emergency procedure that will be adopted including:

- Instructions on how to render the activity safe in the event of an accident e.g. switching off equipment.
- Contact details of responsible person(s) who will be associated with the activity. These should include out of hours contact details where required.
• Actions to be taken in event of spills or accidental vapour/gas release to control the release and reduce the risk to people in the area (e.g. additional ventilation, local evacuation, use of spill control media).
• An emergency plan which can be put into operation in the event of a more serious accident or in the event that the specified control measures cannot safely / effectively be put into action.

If the COSHH assessment concludes that there is the potential for significant health damage based on routine exposure to a hazardous chemical then additional steps should be taken. These should include the following:
• A copy of the COSHH assessment should be sent to the SEPS team who may be able to provide additional support in controlling the risk.
• Personnel involved in the activity should be informed of the assessment conclusions and made aware of any special precautions to implemented (including additional PPE where required).
• The HoMU and/or supervisor should contact the occupational health team to discuss the health surveillance programme that should be implemented (Note: Health surveillance is not a substitute for control measures which should be in place to minimise chemical exposure.

The COSHH assessment is a living document and should be subject to regular reviews to highlight any changes in safety precautions, procedures or changes in the legislation. A review of the document must be undertaken immediately when evidence of any change to the original protocol is brought about. Examples include, change of chemical, change to reaction conditions and change in personnel undertaking the activity. Even if no changes have occurred it is good practice to review the assessment and a minimum period of three years is recommended.

Exposure Monitoring and Control
Greater emphasis is increasingly being suggested by enforcing authorities on the importance of measuring the level of hazardous substances in the air both as a confirmation of good practice and to ensure the effectiveness of control measures. Simple suitable techniques are available to monitor chemical airborne contaminants and should be used where:
• Where failure of control measures could result in a serious health effect.
• Where it is necessary to check that a WEL is/has not been exceeded.
• Where it is necessary to confirm the effectiveness of an engineered control measure e.g. LEV system

Note: The Safety and Environmental Protection Service (SEPS) can be contacted for further information regarding monitoring airborne chemical contaminants by telephoning 0141 330 5532

Health Surveillance
This control measure is intended to detect the early signs that individual employees may be affected by chemical factors relating to their work and is overseen by the University’s Occupational Health Service (OHS) www.gla.ac.uk/services/occupationalhealthunit It is recommended that this service should be consulted when:
• Personnel are routinely potentially exposed to hazardous substances that are linked to an identifiable disease or adverse health effect (e.g. exposure to carcinogenic compounds)
• There is a reasonable likelihood that the disease or adverse health effect may occur under the conditions of the work activity.
• Where valid techniques are available for detecting such disease and adverse health effects e.g. lung function tests, blood testing, self-examination of skin for dermatitis

Training, Information and Instruction
Colleges/Schools/Units must provide those staff, student and visitors undertaking activities with hazardous substances all the information contained in the COSHH assessment and SOPs relating to their work. Where appropriate training and instruction must be provided to increase each individual’s safety awareness so that they are familiar with:

University of Glasgow Safety and Environmental Protection Service
E-Mail: safety@glasgow.ac.uk
How and when to use the control measures provided.

How to use the PPE and RPE correctly and more importantly the importance of doing so in accordance with the specified procedure

How to identify faulty or damaged PPE, how to correctly report and replace damaged PPE

How to clean and store re-useable PPE and RPE

How to act in an emergency occurring due to uncontrolled events involving hazardous substances.

Note: It is recommended that individual Schools/Units produce a local Safety Manual which should be given to personnel and visitors detailing the good practice techniques which should be applied to areas activity undertaken by the School/Unit.

Further Guidance and Support

The University of Glasgow does not require the use of a standard CoSHH assessment form and individuals should feel free to create their own CoSHH assessment systems. These should include all of the information covered above in sufficient detail to ensure an adequate assessment has been carried out (tick box only forms are not usually suitable and sufficient for this purpose). However, a blank template and guidance has been created for general use by the Safety and Environmental Protection Service and is hosted on the website for your convenience.

While carrying out a CoSHH assessment should be the responsibility of a competent person within the college / school / unit, further information and guidance can be obtained by contacting Safety and Environmental Protection Service who will be happy to answer any questions and provide support:

General Office: 0141 330 5532

Chemical Safety Adviser: 0141 330 2799

E-mail: safety@glasgow.ac.uk