Health and Safety
Performance Standard HSPS 014

Control of Substances Hazardous to Health
[COSHH]
Safety, Health and Environment Unit

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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purpose of Performance Standard</td>
<td>4</td>
</tr>
<tr>
<td>2. Related procedures and other documents</td>
<td>4</td>
</tr>
<tr>
<td>3. Introduction</td>
<td>4</td>
</tr>
<tr>
<td>4. Substances Hazardous to Health</td>
<td>4</td>
</tr>
<tr>
<td>5. COSHH in practice</td>
<td>5</td>
</tr>
<tr>
<td>5.1 Responsibilities</td>
<td>5</td>
</tr>
<tr>
<td>5.2 The risk assessment</td>
<td>5</td>
</tr>
<tr>
<td>5.3 Research Laboratories</td>
<td>7</td>
</tr>
<tr>
<td>5.4 Assessment of risk from biological agents</td>
<td>7</td>
</tr>
<tr>
<td>5.5 Reviewing the assessment</td>
<td>8</td>
</tr>
<tr>
<td>5.6 Health Surveillance</td>
<td>8</td>
</tr>
<tr>
<td>5.7 Information and training</td>
<td>8</td>
</tr>
</tbody>
</table>
1. Purpose of Performance Standard

This Performance Standard aims to ensure that the University is fulfilling its obligations under the Control of Substances Hazardous to Health (COSHH) Regulations 2002 and that all work involving hazardous substances that takes place throughout the University is safe, with no detrimental effect on the health of any employee, student or visitor.

2. Related procedures and other documents

- Health and Safety at Work etc. Act 1974 (Sections 2 and 3)
- Management of Health and Safety at Work Regulations 1999
- Control of Substances Hazardous to Health (COSHH) Regulations 2002

3. Introduction

The COSHH Regulations provide the legal framework for control of exposure to hazardous substances used in the workplace. Their aim is to safeguard the health of employees who work with hazardous substances by reducing exposure as far as is reasonably practicable. They require a balance between risk and the cost, time and trouble involved in reducing that risk.

4. Substances hazardous to health

COSHH covers a very wide range of substances with the potential to cause harm through inhalation, ingestion, contact with or absorption through the skin. COSHH defines five categories of harmful substances:

- Chemicals or chemical preparations such as paints, cleaning materials and insecticides, etc. Chemicals and preparations covered by COSHH generally carry a hazard-warning label indicating that they are toxic, corrosive, are a health hazard or are generally harmful in some way.
- Biological agents, including any bacterium, virus, fungus, parasite or other agent capable of causing any infection, allergy, toxicity or other hazard to human health
- Potentially asphyxiant gases
- Dust of any kind if present at significant concentration
- Any other hazardous substance

Some chemicals and specified dusts are, in addition, subject to specific Workplace Exposure Limits (WELs). The HSE document ‘EH40/2005 Workplace exposure limits’ lists these.

COSHH does not apply to lead, asbestos or to substances hazardous solely due to their radioactive, explosive or flammable properties. There are specific regulations that cover these substances and hazards.
5. COSHH in practice

5.1 Responsibilities

As with all Health and Safety matters, Heads of School/Department are responsible for compliance with COSHH. In practice, they delegate this duty to managers, supervisors and, in academic Schools, heads of research groups. It is these individuals who must comply with the central requirements of COSHH; ensuring that there are appropriate risk assessments for work with hazardous substances and implementing all measures to reduce exposure identified by the risk assessment. Heads of School/Department have a duty to ensure that these activities are taking place. Finally, it is the duty of employees to comply with the findings of the risk assessments and apply preventative and control measures properly.

5.2 The Risk Assessment

The key tool in COSHH is the risk assessment. All work that may expose employees to any substance hazardous to health should be risk assessed and work should not start until all identified prevention and/or control measures are in place.

COSHH requires risk assessments to be carried out by a competent person. A competent person is any experienced individual who has an understanding of the work, of the potential hazards and risks posed by the work and substances involved, and who has the authority to ensure that the findings of the risk assessment are applied. They do not need to be an expert in the COSHH regulations. In practice, this means members of staff with supervisory roles. However, in research laboratories within academic Schools this could also include postdoctoral researchers and experienced technical staff. Undertaking COSHH risk assessments is also an important training / learning outcome for students, both graduate and undergraduate. In such cases, the supervising member of academic staff should always sign off risk assessments as being suitable.


That said a COSHH risk assessment requires the following additional considerations:

**Risk**

In addition to the usual risk questions of what and where the hazards are, the risk assessment should consider these additional factors:

- What are the hazardous physical, chemical or biological properties of the substance?
- What are the hazardous properties of any by-product or waste material produced?
- If more than one hazardous substance is involved, is any additional risk caused by the combination of substances?
- What are the potential effects of the substance on the body? (Note that the Safety Data Sheet (SDS) provided by the supplier contains information on health effects, but possession of an SDS is not in itself a valid risk assessment).
- What form does the substance take? Is it a solid, liquid, dust or vapour? (This can have a significant impact on likelihood of exposure and potential for the substance to cause harm).
• What amounts of hazardous substance are present? (Again, this can have a significant impact on likelihood of exposure and potential for the substance to cause harm).

• Who might be at risk, including visitors such as maintenance workers? Does this include anyone one considered more vulnerable under COSHH, e.g. pregnant women or nursing mothers, disabled individuals, those susceptible to illnesses/diseases caused or aggravated by exposure to hazardous substances, inexperienced individuals, and young people under 18 years of age?

• What measures are required to deal with any accidental spillage or release?

**Control**

Where the assessment identifies a risk, the COSHH regulations define a clear hierarchy of measures to use to control exposure to hazardous substances. This starts with prevention. It is a duty under COSHH to consider whether exposure to the hazardous substance can be prevented by substituting, where practicable, a less or non-hazardous alternative. The aim is to use the substance that poses the least risk. This is essential for substances known or suspected to be carcinogenic or mutagenic.

There is some flexibility here, for example, there may be situations in academic research laboratories where safer substitutes may be less effective than the original substance. In such cases, the risk assessment must fully justify the continued use of the more hazardous substance, the quantities used must be as minimal as possible, and other control measures should be applied.

If replacement is not feasible then consider engineering control measures that remove access to the substance. Next, the potential for exposure should be minimised. Ways to achieve this include reducing the amount of substance used and using it in a form that reduces the exposure risk, i.e. solid rather than powder. Finally, consider the use of Personal Protective Equipment (PPE) such as lab coats, overalls, gloves, masks, etc.

**Recording**

COSHH requires the significant findings of the risk assessment to be recorded. This should be proportionate to the potential risks. For example, for small quantities of household chemicals that pose little risk, the record can simply detail the name and form of the substance, the basic measures taken to control exposure such as using the substance in accordance with the manufacturers’ instructions, accompanied by a statement that the substance poses little risk and no detailed risk assessment is necessary.

In addition, where exposure to a number of different hazardous substances poses little risk, the risk assessment findings can be listed together on a single record. Equally, the findings for similar substances of low risk, e.g. lubricants or detergents, may also be grouped together.

Where a more significant risk is identified, the record of the assessment should include details of the control measures implemented.

The significant findings of risk assessments should be available at the point of use, i.e. within individual work areas or laboratories.
5.3 Research Laboratories

Much of the work with hazardous substances carried out in research laboratories will be of relatively low risk due to the small amounts of substance that are generally used. In most cases, exposure prevention is by applying standard laboratory practice, i.e. the use of lab coats and gloves, using fume cupboards when dusty or volatile material is used. In these circumstances, a relatively simple risk assessment will again suffice, although it is good practice to include additional information, such as the specific processes involved and the maximum quantity of material allowed.

Work in the following categories requires a more rigorous risk assessment and more detailed record of that assessment: all work involving known and suspected carcinogens, teratogens, mutagens or sensitizers; work where exposure to hazardous substances is likely to occur; work where a hazardous substance is preferred over a less hazardous substitute, and work with any substances with WEL. The record of these assessments should consider all pertinent factors, including details of preventative measures and where prevention is not reasonably practicable, the steps to take to achieve and maintain adequate control of exposure. Additional factors to consider include:

- Validation of the effectiveness of the control measures
- The ways in and the extent to which groups of people could be exposed both during normal work and after any reasonably foreseeable deterioration in, or failure of, control measures
- The hazards and risks the substances pose in circumstances of an unforeseen incident, accident or emergency which could result in an uncontrolled release of the substance
- Relevant Workplace Exposure Limits, the likelihood of these limits being exceeded and, where appropriate, the results of exposure monitoring
- If appropriate, the results of relevant health surveillance
- The conclusions on the risk to the health of workers and to any others who may be affected
- The date of the next risk assessment review or the period between successive reviews.

5.4 Assessment of risks from biological agents

Risk assessments for biological agents have additional specialised requirements. They should include

- The hazard group of the biological agent from the Approved List of Biological Agents
- The form of the biological agent, e.g. infectious stages or hardy spores
- How and where they are present
- How they are transmitted and the diseases they cause
- The ability they may have to replicate and infect, noting that, in general, there will not be a dose-response relationship of the kind that exists for many other substances, and risk may be high at small exposures
- The likelihood of exposure and consequent disease
- Intent, i.e. are you deliberately working with the agent or is it simply present in the biological material with which you are working
• The assessment should also take into account the uncertainties surrounding the potential presence of biological agents in human and animal tissues or samples.

5.5 Reviewing the assessment

As a minimum, risk assessments should be reviewed annually. Reviews also should take place immediately there is a significant change in the work (e.g. different hazardous substances are used or the quantity in use increases significantly) or if control measures have failed. Details of any changes must be added to the written record. During any review, the assessor should take the opportunity to look at whether improvements in prevention and control measures can be made.

5.6 Health Surveillance

COSHH imposes a duty on the University to provide health surveillance where appropriate. It does so through Occupational Health (OH). (http://www.kent.ac.uk/safety/oh/index.html)

Health surveillance will be required when the following criteria are met:

• Where there is exposure to a hazardous substance linked to an identifiable disease or adverse health effect
• Where that disease or health effect is reasonably likely to occur under the particular conditions of work
• Where there are valid techniques for detecting the disease or adverse health effect.

In these circumstances, individuals identified by Schools, Departments, Supervisors, or through self-determination should contact OH.

In addition, OH keeps a COSHH record for those working with the following classes of hazardous substances:

• Substances of recognised systemic toxicity
• Substances known to cause occupational asthma
• Substances known to cause dermatitis or severe irritation of the mucous membranes
• Biological agents of hazard Group 3 or 4

5.7 Information and training

Schools and Departments must provide those working with hazardous substances with the information contained in the COSHH assessments and any Standard Operating Procedures relating to their work.

They must also provide appropriate instruction and training so that workers know when and how to use identified control measures, how to use PPE correctly, how to clean and store reusable PPE and how to act in an emergency involving hazardous substances.