Health and Safety
Performance Standard HSPS 014

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

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1. Purpose of Performance Standard

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

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
Chemicals (Hazard Information and Packaging for Supply) Regulations 2008

3. Introduction

The COSHH Regulations provide the legal framework to control 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.

This phrase, ‘as far as is reasonably practicable’, is significant. It means that the cost, time and trouble involved in reducing risk should be weighed against the risk itself. If the risk is great, it is reasonable and expected that greater efforts, including financial, will be made to reduce it. If the risk, or the achievable reduction in risk, is small, then it is reasonable to spend much less money, time and effort on reducing it.

4. Substances hazardous to health

COSHH covers a very wide range of substances with the potential to cause harm if they are inhaled, ingested, come into contact with, or absorbed through the skin. There are five categories:

- Chemicals or chemical preparations such as paints, cleaning materials and insecticides, etc. Chemicals and preparations that are covered by COSHH generally carry a hazard warning label indicating that they are classified as either very toxic, toxic, harmful, corrosive, an irritant, sensitising, carcinogenic, mutagenic or toxic to reproduction.
- 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). A list of these can be found at http://www.hse.gov.uk/coshh/table1.pdf.

COSHH does not apply to lead, asbestos or to substances hazardous solely due to their radioactive, explosive or flammable properties. These substances and hazards are covered by their own specific regulations.
5. COSHH in practice

5.1 Responsibilities

As with all Health and Safety matters, the responsibility for compliance with COSHH is delegated to Heads of School/Department, who, in practice, further delegate this duty to managers, supervisors and, in the Science Schools, heads of research groups. These individuals must ensure that appropriate risk assessments for work with hazardous substances are carried out and that the measures identified to reduce exposure are implemented. 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 any identified prevention and/or control measures are put in place.

Risk assessments should be carried out by a competent person, in other words an 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 the Science Schools this could also include postdoctoral researchers, experienced technical staff and experienced graduate students. Students in their first year of graduate studies should not be given the task of carrying out COSHH risk assessments.

In principle, a COSHH risk assessment is no different from a risk assessment of any other activity and the process described in Performance Standard HSPS 010 can be applied (http://www.kent.ac.uk/safety/hs/pages/Riskassessment/RiskAssessmentPerformanceStandard_UoK_IssuedAug09.doc). That said there are some additional considerations that should be applied:

Risk

In addition to the usual risk assessment questions (what and where the hazards are) additional factors should also be considered:

- 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? (Information on health effects should be provided by the supplier in the relevant Material Safety Data Sheet, but note that possession of a safety data sheet does not in itself constitute a valid risk assessment).
- What form are they in, solid, liquid, dust, 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? Moreover, special attention should be paid to those considered more vulnerable, e.g. pregnant women or nursing mothers, people with certain medical conditions, the inexperienced and young people.

Control
Where a risk is identified the COSHH regulations define a clear hierarchy of measures to be used 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 with the aim of using the substance that poses the least overall risk. This is particularly true for substances known or suspected to be carcinogenic or mutagenic.

The term, ‘where practicable’, is again significant. This allows for the continued use of a hazardous substance where, for the circumstances of the work, it is more effective than the safer substitute. However, in such cases the continued use of the hazardous substance must be fully justified in the risk assessment and the quantities used must be as minimal as possible.

If replacement is not feasible then engineering control measures that remove access to the substance must be considered. Next, the potential for exposure should be minimised by reducing the amount of substance used or by using a form which reduces the exposure risk, i.e. solid rather than powder. Finally, the use of Personal Protective Equipment [PPE] (lab coats, overalls, gloves, masks, etc.) should be considered. In addition, the measures that are required to deal with any accidental spillage or release must be clearly identified.

Recording
By law the ‘significant findings’ of the risk assessment must be recorded. What is recorded should be proportionate to the potential risks. In simple cases involving substances often found in small quantities in offices or homes that pose little or no risk, all that need be recorded is the name and form of the substance, the measures taken to control exposure, i.e. using the substance in accordance with the accompanying supplier’s instructions, and a statement that because the substance poses little or no risk, no detailed risk assessment is necessary.

In addition, where exposure to a number of different hazardous substances poses little or no risk, the risk assessment findings may be grouped together on a single record list. 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.

It is important to note that records should be kept at the point of use, i.e. within individual work areas or laboratories.

5.3 Research Laboratories
Much work with hazardous substances carried out in research laboratories will also be of relatively low risk due to the small amounts of substance that are generally used. In most cases exposure will be prevented by standard laboratory practice, i.e. the use of lab coats and gloves, using fume cupboards when dusty or volatile material is used. In such cases a
relatively simple risk assessment will again suffice. However, it would be good practice to include additional information such as the specific process and the maximum quantity of material to which the assessment applies.

Some work, including all work involving substances with the risk phrases R42, R42/43, R45, R46 and R49, work where exposure to hazardous substances is likely to occur, work where a hazardous substance is preferred over a less hazardous substitute, and substances with WELs require a more rigorous risk assessment to be undertaken. In these cases a more detailed record of the risk assessment is also required. The record of the assessment should clearly show that all pertinent factors have been considered, including consideration of preventative measures and where prevention is not reasonably practicable, the steps to be taken to achieve and maintain adequate control of exposure. Additional factors to be considered 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
- When the assessment will be reviewed 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 classification level 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

Risk assessments should be reviewed annually or if there is reason to suspect that it is no longer valid, for example if there has been a significant change in the work or if control measures are known to have failed. Changes to the risk assessment and, in particular, to the control measures used should be recorded. When reviewing the assessment, the opportunity should be taken to look again at prevention and control measures.

5.6 Health Surveillance

COSHH imposes a duty on the University to provide health surveillance where appropriate. This is performed by the Occupational Health (OH) section of the Safety, Health and Environment (SHE) Unit. (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, those working with the following classes of hazardous substances should also contact OH:

- 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 Class 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.