

ROYAL HOLLOWAY, UNIVERSITY OF LONDON

COMPLETION OF PROCEDURE ASSESSMENT FORM (COSHH – RELATED)

GUIDANCE NOTES (Version 2)

The following guidance notes accompany the College Procedure Assessment form (COSHH-related). Please complete all applicable sections of the assessment form using the following completion notes as guidance.

Note: In order to complete the assessment form, you must first refer to the completed COSHH assessment form for each hazardous substance being used in the procedure/experiment/process.

Section 1

When completing Section 1 consider the following:

- a. Title of the procedure/experiment/process
Departments may find it useful for both form tracking and audit purposes if the title of a procedure/experiment/process is standardised throughout the department. This will also serve to avoid any repetition of assessment where a particular procedure is undertaken in a number of laboratories within a department.
- b. Description of the procedure/experiment/process
Include the aim and an outline of the procedure being undertaken.
- c. Location of procedure/experiment/process
Indicate the location of the procedure (i.e. room/laboratory/store/glasshouse/cold room, etc.) and the location of this facility (i.e. building).
- d. List of substances used (including e. intermediates/by-products/products)
Using the individual COSHH assessment form for each of the hazardous substances being used, consider quantities involved, potential routes of entry, hazard classification, occupational exposure limits, possible delayed, acute, chronic, synergistic and additive effects.

Workplace exposure limits

Maximum exposure levels and Occupational exposure standards have been replaced by Workplace exposure limits.

The Health and Safety Commission has established workplace exposure limits for a number of substances hazardous to health which are intended to prevent excessive exposure to specified hazardous substances. A WEL is the maximum concentration of an airborne substance, averaged over a reference period, to which employees may be exposed by inhalation. WELs should not be considered a hard and fast line between safe and unsafe. The degree to which exposure is reduced below the WEL will be proportionate to the health risk. If the principles of good

practice (see COSHH Policy for list) for the control of substances hazardous to health are applied correctly, exposure should be below any relevant WEL.

WELs refer to concentrations of hazardous substances in the air that people breathe, averaged over a specified period of time referred to as the time-weighted average (TWA). Two time periods are used: long term (8 hours), and short term (15 minutes). Short-term exposure limits (STELs) (15 minute reference period), apply to substances that can cause acute effects and the purpose of the short term limit is to protect against the adverse health effect occurring from brief exposures to the substance.

The Health and Safety Executive's publication EH40/2005 *Workplace exposure limits* contains a list of substances assigned WELs. Details are identified of the limits and other essential information including guidance on the approved methods for averaging over the specified reference periods, as well as an explanation of the terms 'respirable' and 'inhalable'.

Substances Not Assigned a Workplace Exposure Limit

Where a substance is not assigned a WEL it does not indicate that it is safe. In such cases, exposure will be controlled to a level to which nearly all the working population could be exposed, day after day at work, without adverse effects on health.

Information on the action to be taken in the event that personal protective equipment is necessary, including its suitability, fit testing of facepieces and other relevant information is to be found in paragraphs 143 – 153 of the COSHH Approved Code of Practice, together with the Health and Safety Executive's "Personal Protective Equipment, Guidance on the Regulations" and Section 8(a) "Face Fit Testing" of this document.

Section 2

In this section you will need to identify who may be exposed, for how long and how frequently. Your main consideration will be the workers/students who will be conducting the procedure/experiment/process. However, also consider the ways in which and extent to which other groups of people could be exposed, including maintenance workers who may work in circumstances where exposure is foreseeably higher than normal. Also consider office staff, night cleaners, security guards, member of the public, etc. taking into account the type of work and process, and any reasonably foreseeable deterioration in, or failure of control measures provided.

Furthermore, arrangements must be in place to protect particular groups of employees who may be at an increased risk. Examples may include inexperienced trainees, work experience students, young persons aged under 18, pregnant workers, disabled workers, and any employees known to be susceptible to certain illnesses such as dermatitis, asthma and other diseases which may be caused by exposure to hazardous substances.

Note: When identifying those members of staff who may be exposed, it is not necessary to include their names on the assessment form. However, please try to be as

detailed as possible, by indicating, for example, the name of the research group who are conducting the procedure/experiment/process (e.g. members of Dr A Nonymous' research group or laboratory). Furthermore, a top sheet in the front of the COSHH file shall indicate the personnel within the laboratory who may be exposed.

In order to track back any possible later repercussions from a student practical departments shall file record sheets of student attendance at relevant practicals with the Procedure Assessment form.

Section 3

You should now investigate and assess the probability or likelihood of injury or ill health occurring as a result of inadequately managed or uncontrolled risk, based on the worst case likely outcome.

To establish the level of risk (*Low, Medium or High*) associated with each hazard, you assess the frequency (probability) of an occurrence taking place, and the likely severity of the consequences. Take into account in your assessments, the number of people who may be involved. Follow **(i)** and **(ii)** below to arrive at your estimated level of risk.

(i) Probable Frequency

Using the following six headings, assess the probability/likelihood of harm occurring from the hazard under investigation:

1	=	Zero to Very Low
2	=	Very unlikely
3	=	Unlikely
4	=	Likely
5	=	Very likely
6	=	Almost certain

(ii) Severity

Using the following six headings, consider the severity of the consequences of the occurrence:

1	=	No Injury or Illness
2	=	Minor Injury/ies or Illness
3	=	'Lost Time' Injury or Illness
4	=	'Over 3 Day' Injury or Illness
5	=	Major Injury or Illness
6	=	Fatality, Disabling Injury/Illness etc

Now work out the 'hazard rating'/numerical value for each hazard under review. To do this, using TABLE 1 below, multiply your estimated 'Probable Frequency' rating by your estimated 'Severity' rating.

TABLE 1**SEVERITY**

	6	5	4	3	2	1
6	36	30	24	18	12	6
5	30	25	20	15	10	5
4	24	20	16	12	8	4
3	18	15	12	9	6	3
2	12	10	8	6	4	2
1	6	5	4	3	2	1

Using the numerical value (hazard rating) you arrived at from TABLE 1 now refer to TABLE 2. Your Hazard Rating will fall within one of the six bands in column 1. From the appropriate hazard rating band, read across the table to establish: the *Estimated Risk*, the *Risk Rating* and the *Level of Risk* you are dealing with, i.e. *LOW*, *MEDIUM* or *HIGH*.

TABLE 2

HAZARD RATING	ESTIMATED RISK	RISK RATING	LEVEL OF RISK
0 – 5	MINOR RISK	1	LOW
5 – 11	ACCEPTABLE RISK	2	
12 – 17	MODERATE RISK	3	MEDIUM
18 – 23	SIGNIFICANT RISK	4	
24 – 29	HIGH RISK	5	HIGH
30 – 36	EXTREME RISK	6	

Now record your findings in Section 3 of the assessment form.

Section 4

Under Section 4, you now need to establish what control measures are necessary. You are only required to complete Section 4 once, identifying the control measures for all the hazards. Therefore, it is not necessary to complete a Section 4 table for each hazard in Section 1.

The control measures identified in this section are now explained in more detail:

- a. Storage/Location of procedure
Different stages of a procedure may be conducted in different areas of the laboratory (e.g. fume cupboard, biological safety cabinet, lab bench, cold room, etc.).
- b. Labelling and signage
In accordance with the CHIP regulations, ensure that there is appropriate labelling of all containers of hazardous substances, and that all facilities in which the procedure is undertaken are correctly marked with appropriate warning signs.
- c. General ventilation
From the assessment is there a need for general ventilation?
- d. Exhaust ventilation
Is general ventilation sufficient or is there a requirement for exhaust (mechanical) ventilation/extraction during normal use and/or accidental/unintentional release?
- e. Emergency procedures
Arrangements include first aid, spillage control and procedures in the event of failure of any control measure/system.
- f. Fire precautions
In what way may this procedure/experiment/process increase the risk of fire and what control measures are necessary to control this risk, including the extinguishing methods required in the event of fire.
- g. Security arrangements
Consider the risk from unauthorised access and the need to prevent others from coming into contact with the procedure/experiment/process or hazardous substances. Does loss or theft of equipment and/or hazardous substance need to be prevented?
- h. Provision of personal protective equipment (PPE)
Under COSHH, there is a hierarchy of control measures, and PPE should always be regarded as the 'last resort' to protect against risks to safety and health. Engineering controls and safe systems of work should always be considered first. However, in some circumstances PPE will still be needed to control the risks adequately.
- i. Safe systems of work
This will include the requirement for information, instruction and training, the sequence in which tasks may need to be undertaken, the provision of an adequate

level of supervision, the provision of the correct equipment, and such other measures as may be appropriate based on the level of risk involved.

j. Written procedures

Make reference to any established departmental codes of safe working practice, local rules or safe operating procedures.

k. Health surveillance

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

- where an employee is exposed to one of the substances listed in Schedule 6 to COSHH and is working in one of the related processes, and there is a 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.

You should pay particular attention to those substances assigned a Workplace Exposure Limit (WEL).

l. Air monitoring

Under COSHH, you have to measure the concentration of hazardous substances in the air breathed in by workers where your 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.

However, you do not need to do this if you can show by another method of evaluation that you are preventing or adequately controlling employees' exposure to hazardous substances, e.g. a system that automatically sounds an alarm if it detects hazardous substances. Air monitoring must be carried out when employees are exposed to certain substances and processes specified in Schedule 5 to the COSHH regulations.

You should pay particular attention to those substances assigned a Workplace Exposure Limit (WEL).

Where your assessment identifies air monitoring as necessary, contact your departmental Health and Safety Co-ordinator.

m. Welfare facilities

May include washing facilities (e.g. hand basin, shower, etc) and appropriate storage areas for laboratory coats and PPE.

n. Waste disposal

Hazardous waste shall be disposed of in accordance with the requirements of current environmental legislation.

o. Transport

Includes safe transport around campus as well as transport to an off-campus location. The latter shall be conducted in accordance with relevant statutory requirements including national transport legislation.

Section 5, 6, 7, and 8

Finally, complete Sections 5, 6, 7 and 8 of the assessment form.

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