



**Science and
Technology
Facilities Council**

COSHH Risk Assessment Procedure

Rev. 1.6, Issued May 2022

COSHH Risk Assessment

The aim of a COSHH risk assessment is to examine activities where substances hazardous to health are used or generated and to specify the control measures required to eliminate exposure or, where that is not possible, to reduce exposure to safe levels.

Consideration should also be given to the possible environmental impact of the use, accidental spillage and disposal of any chemical.

The procedure follows a five step process similar to general risk assessment:

- 1. List the hazardous substances**
- 2. Assess hazard to health from the substance(s) and who might be exposed**
- 3. Determine suitable control measures**
- 4. Implement control measures (eliminate, reduce, isolate, etc.)**
- 5. Review**

Record your assessment.

The COSHH Assessment form in [Appendix 1](#) is the recommended format to ensure all the essential information is considered and recorded.

The accompanying guidance document [Appendix 2](#) clarifies what information is required for each of the sections in the form.

Other COSHH assessment forms may be used so long as they record the essential information.

[Appendix 3](#) gives details of a method which can be used to help determine the level of risk from a hazardous substance and the relevant general control methods which should be used. This information can then be used in the COSHH assessment.


[Appendix 4](#) shows how to add your completed COSHH Assessment form into Evotix Assure

Appendix 1 - STFC COSHH Assessment template

STFC COSHH Assessment

Site	Department	Assessor	Date	Reference

1 Describe the activity or work process.		Duration	Frequency
Location of the activity or work process.	Types of people at risk (tick <input checked="" type="checkbox"/>)		
	Local staff	Maintenance	Cleaners Visitors

2 Summary of Substances		Quantity used (stock and working volumes /amounts)	Hazard Symbols
Substance name	CAS number		

3 Substance involved (repeat this whole section for each substance named in section 2)				
Substance name	OEL (8 hour)	OEL (15 mins)	Physical state	Exposure route
Manufacturer / supplier	SDS ref no.	SDS date	Tel No.	
List the hazards to health from exposure to the substance (H phrases from MSDS)				
List the precautionary statements associated with the substance (P phrases from MSDS)				
Storage Requirements				
Is it possible to eliminate the need to use this substance?		Yes / No	Justification if "No"	
Is it possible to substitute this with a less harmful substance?		Yes / No		
First Aid Measures				
Inhalation				
Skin Contact				
Eye Contact				
Ingestion				
Fire Fighting Measures				
Action to take in case of minor spillage or release (include any additional PPE that might be required)				
Action to take in case of major spillage or release (include any additional PPE that might be required)				
Waste Disposal Arrangements (process waste, used containers, contaminated equipment & PPE)				

4 Control Measures for the activity or work process






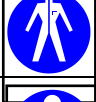


Risk Level without controls				
Route of entry	Inhalation	Skin / Eye	Ingestion	Injection
Risk Level				

Identify the control measures to be used

General Ventilation	Local Exhaust Ventilation (Extract)	Local Exhaust Ventilation (Fume Cupboard)	Containment (eg. Glove Boxes)	Precautions for substances harmful via skin or eye contact	Personal protective equipment PPE (specify below)	Specialist Control Approaches
Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No

Explain the control measures to be used

Personal Protective Equipment (identify the type and specification of PPE)

	Dust mask (face fit test req'd)	Yes No			Visor	Yes No	
	Respirator (face fit test req'd)	Yes No			Goggles Glasses	Yes No	
	Gloves	Yes No			Overalls	Yes No	
	Footwear	Yes No			Other	Yes No	

Have chemical incompatibilities been considered and addressed? (see COSHH guidance document) Yes / No

Have by products / intermediates been considered? (see COSHH guidance document) Yes / No

Is Workplace Exposure Monitoring required? (air / biological*) Yes / No Details
*refer to HSE publication EH40

Is Health Surveillance required? Yes / No
(remember health surveillance may be required for vulnerable persons eg pregnant/young workers those with asthma, dermatitis etc)

Is CMR and/or Sensitiser Recording required? Yes / No
CMRs: Carcinogen – H350, H351; Mutagen – H340, H341; Reproductive Toxin – H360, H361
 Sensitiser – H334, H317

Information, instruction, training and supervision Details:

Equipment testing and maintenance requirements Details:

Additional actions Details:

Declaration

I can confirm that I have considered and understand the substances to be used and the associated hazards. I am satisfied that all of the hazards have been identified and that the control measures to be followed will reduce the risks to as low a level as reasonably practicable

COSHH Assessor

Date	print name	Signature

6 Assessment Review Record

Date Reviewed	Reviewed by	Details of any changes

7 Assessment Communication Record

Assessment read, risks and control measures understood.		
Name (print)	Signature	Date

Appendix 2 – COSHH Assessment template guidance

GENERAL ADVICE

A COSHH assessment must be made *before the start* of any work involving a hazardous substance. The assessment will often need to be in writing and use of a form will facilitate this. Complete all sections if applicable; cross through those that do not apply, to indicate clearly that the section has been properly considered and not simply omitted. Occasionally there may be insufficient room on the form to give all the information needed. In this case, use a separate piece of paper for additional details and attach to the assessment form.

Note that COSHH assessments are not only required for laboratory or workshop operations. Maintenance tasks, in particular, often use large quantities of hazardous substances and will require written assessments.

Generally, the assessment should cover the whole activity, process or procedure, and separate assessment forms need not be completed for each individual substance used.

A written assessment will always be required in the following cases:

- a. where substances may cause serious damage to eyes or serious damage to health by:
 - prolonged exposure, sensitisation via the inhalation or dermal routes,
 - heritable genetic damage,
 - which may cause cancer or are cancer-causing by inhalation,
 - which may impair fertility or cause harm to the unborn child or breast fed babies;
- b. where extreme toxicity is indicated (e.g. LD₅₀ oral, rat, <1 mg kg⁻¹);
- c. where special first aid provision is required (e.g. for cyanide, hydrofluoric acid, phenol);
- d. where substances with a Workplace Exposure Limit (WEL) are used and likely to give rise to significant exposure (e.g. where volatile or dusty chemicals are used on the open bench with no fume cupboard or other local exhaust ventilation (LEV); where adhesives and other volatile preparations, or corrosive materials, are used in maintenance operations);
- e. where procedures involve the risk of asphyxiation (e.g. by nitrogen or helium);
- f. where procedures involve explosive or pyrophoric substances. (Although not strictly subject to the COSHH Regulations, the form provides a convenient format for making the risk assessment required under other relevant legislation, i.e. DSEAR where small volumes are in use. Large volumes or bulk supplies of these substances will require a more detailed DSEAR assessment and advice should be sought from SHE Group);
- g. work with biological agents, which must be assessed according to STFC's Biological Safety Code (SC16)

This is not an exhaustive list and other written assessments may be required. Take advice from your Departmental Safety Contact, COSHH Assessor or SHE Group if in doubt.

1. DESCRIPTION OF ACTIVITY, PROCEDURE OR PROCESS

Describe briefly what the activity entails. Sufficient detail should be included to highlight particular parts of the activity where specific control measures might have to be considered, for example use of concentrated stocks, large volumes, specific equipment etc.

Location of activity - Describe the location of the work (e.g. building and room number) and indicate whether a laboratory, workshop, plant room or some other workplace is involved.

Persons involved - Indicate the groups of people who might be affected by the activity.

You must consider individuals or groups who may be particularly at risk (e.g. pregnant or nursing mothers, or who are vulnerable because of certain medical conditions, or inexperienced workers). Consider also how the activity may affect people who are not directly involved (e.g. ancillary staff such as cleaners, contractors, security staff, service engineers, visitors, or members of the public) and ensure that control measures and management arrangements will protect them too.

2. SUMMARY OF SUBSTANCES

List the hazardous substances used, avoiding use of abbreviations or trade names wherever possible and identifying the chemical content, if known.

CAS numbers - These are unique identifiers assigned by the Chemical Abstracts Service (CAS). They are the most widely recognised identification system and a CAS number is assigned to **all chemical compounds, materials, alloys, minerals, proteins** etc referred to in printed media.

Quantities used - This is vital if potential exposures and hence the potential risks are to be accurately assessed *under the conditions in which hazardous substances are being used*. For example, laboratory work involving microgram quantities of highly toxic substance may present little or no risk to the user, if appropriate precautions are taken.

Conversely, maintenance tasks using substances that are simply irritant or harmful may present a higher risk because of the very large quantities in use.

Where larger quantities of substances are used in laboratories, for example decanting from larger volumes of concentrated stock to make working solutions, it may be appropriate to consider the COSHH assessment in two parts (or on two separate forms), since additional emphasis may be required on control measures and emergency procedures in the case of larger quantities.

Hazard Symbols - Add the appropriate hazard symbols to the list for quick reference.

3. SUBSTANCES INVOLVED

For each substance involved in the activity identify the specific hazards (H numbers & phrases) and the precautionary statements (P numbers & phrases). These may be found

- on container labels, or
- in manufacturers' safety data sheets (MSDS), or
- in standard safety texts, e.g. Hazards in the Chemical Laboratory (Royal Society of Chemistry), Dangerous Properties of Industrial Materials (SAX), Handbook of Reactive Chemical Hazards (Bretherick).

Workplace exposure limits - (WELs) are British occupational exposure limits which are set to help protect the health of workers. WELs are limits to the concentration of hazardous substances in the air, averaged over a specified period of time, referred to as a time-weighted average (TWA). Two time periods are generally used, and 8-hour average or a 15 minute average.

The Health and Safety Executive publication EH40 establishes Workplace Exposure Limits (WELs), and these should be stated in the COSHH assessment, where listed for a particular substance

Identify the physical state of the substance – Gas, liquid or solid. If the substance being used is a solid indicate if it is a fine powder, a coarse powder or granules.

Identify the potential exposure route - There are four principal routes of entry:

- Inhalation – usually the most significant route of entry
- Skin contact/absorption
- Instillation (via eye contact) – may be an issue if the activity has high splash potential or generates fumes and vapours
- Ingestion – least likely route of entry if good hygiene practices are followed in the work area.

Note that most safety information relates to single substances. You will need to make your own judgements, based on experience and extrapolation of known hazards, if the risks from reactions or mixtures are to be correctly assessed.

Storage Requirements – consider whether there are any special storage requirements for the substance, for example, over and above those which are good practice:

- Store away from light
- Store below 5°C
- Oxidiser – store away from flammables.

Could a less hazardous substance, or form of the substance, be used instead? If the answer is yes, then you **must** justify why you are not using it. COSHH requires you to substitute less hazardous materials wherever possible, but there may be valid reasons for not using them. You must state those reasons. (Note: simply having bulk stocks which need to be used up would NOT be a valid reason).

First Aid and Fire Fighting measures - This information should be excerpted from the relevant MSDS and recorded concisely in the assessment itself. It is not sufficient to simply refer to the MSDS. This is to ensure the information is readily available in the event of an incident, as a prompt response is required.

Spillage Procedures -The MSDS provides a guide to help specify appropriate spillage procedures but is generic information and your assessment must be more specific about the action to take in the locations where the activity is carried out and where the substances are stored.

In case of accidental exposure or small scale spillage, general principles apply for most substances (e.g. remove people from the contaminated area; wash substance splashes off skin or rinse eyes with copious amounts of water; use proprietary spill kits according to their instructions). However, if the activity could result in a larger scale spill the assessment

should detail the response and include, for example, any requirement for additional PPE/RPE during clean up.

The COSHH assessment must also detail if there is a hazard that requires special procedures in an emergency (either a spillage, an injury or a fire). For example:

- for work with hydrofluoric acid then calcium gluconate gel must always be available, not only in the work area but for workers to take home;
- in the case of phenol, polyethylene glycol (PEG) 300 should be readily available for users to apply in first aid treatment.

Where these substances are used personnel in the immediate area should know what specific first aid measures apply, as well as those local first aiders who may attend an incident.

Waste Disposal Arrangements - You can use the MSDS as a guide to help specify waste disposal arrangements but, again, this is generic information, and you must provide specific detail to align with your department and site procedures.

Consider how any waste will be disposed of *before* you start work: waste disposal is expensive and the disposal of some wastes may be extremely difficult. Detail the type and volume of all waste that will be generated, for example solids, or liquids, and remember to consider the disposal of associated items such as potentially contaminated equipment and PPE /RPE.

You must describe how the waste will be collected, labelled, stored and secured prior to disposal.

4. WHAT MEASURES HAVE YOU TAKEN TO CONTROL THE RISK?

You have identified the hazards present in the activity or process and made some estimate of potential exposure to those hazards, and the route of entry. Record your estimates as low, medium or high risk, this will then help to inform which control measures are appropriate.

Your control measures should now be chosen to prevent or minimise those exposures to prevent or minimise any resulting harm, i.e. to ensure that the risks are adequately controlled.

Engineering control measures - Inhalation hazards often present the greatest risk if they are not controlled, and some form of engineering control would be appropriate to avoid potential exposure by the airborne route. Specify what equipment you will use (e.g. a fume cupboard, dust extraction unit or other form of LEV, or total enclosure such as a glove box).

Personal protective equipment (PPE) - Your COSHH assessment must specify the PPE required.

If respiratory protection is specified (in addition to other engineering and management measures) then identify the standard of RPE required (e.g. EN149: 2001 FFP2¹, or protection factor 10). Note that a fit test is required for individuals who must wear tight-fitting Respiratory Protective Equipment (RPE).

¹ This is a system of classifying respirators into three levels of protection: FFP1, FFP2 and FFP3. Each Filtering Facepiece (FFP) will be categorised and marked according to the level of protection it provides, FFP1 being the 'least' protective and FFP3 being the 'most'.

If gloves are needed you must also identify the correct type for the substance in use (e.g. nitrile, butyl rubber, vinyl; disposable or reusable). Manufacturers and suppliers can provide information on chemical compatibility and chemical resistance / breakthrough times – not all gloves are equal for all tasks, but they must be fit for purpose.

If eye protection is needed, decide whether safety spectacles, goggles or face shields are appropriate.

You may need to specify protective clothing, e.g. lab coats, coveralls or aprons. Further advice can be obtained from SHE Group.

Management measures - Consider whether you need other controls on the work, e.g. restricting the quantity of substances that may be used, restricting access to a process, demarcating a specific workspace or area, prohibiting lone working, or specifying the level of direct supervision required (especially where inexperienced workers are involved).

Chemical incompatibilities - Incompatible chemicals produce a reaction when they come into contact with each other. In an uncontrolled environment, a reaction can cause serious damage, injury or even be fatal.

Chemicals that react to produce heat, pressure, fire, explosion or another violent reaction are deemed to be incompatible and must be stored carefully to prevent uncontrolled mixing. While it is usually enough to divide chemicals based on generic hazard groups, you must err on the side of caution and check any chemicals you are unsure of. The MSDS for each chemical for each chemical will tell you which family it belongs to and list relevant incompatible substances.

Segregating chemicals may require little more than physically dividing incompatible chemicals in separate storage cupboards. These cupboards may need specific properties, such as being fireproof, or may just provide separation by means of distance. Separation may also be achieved simply by over-packing in SafePaks, or similar.

Some chemicals may need special conditions, such as being stored under nitrogen to exclude air and moisture or being stored at a controlled temperature. You will need to record special storage conditions in the assessment.

	Acids, Organic	Acids, Oxidising	Acids, Inorganic	Alkalis (bases)	Oxidisers	Poisons/ toxins, inorganic	Poisons, organic	Water reactives	Organic solvents
Acids, Organic			X	X		X	X	X	X
Acids, Oxidising			X	X		X	X	X	X
Acids, Inorganic	X	X		X	X	X	X	X	
Alkalis (bases)	X	X	X				X	X	X
Oxidisers			X				X	X	X
Poisons/ toxins, inorganic	X	X	X				X	X	X
Poisons, organic	X	X	X	X	X	X			
Water reactives	X	X	X	X	X	X			

Organic solvents	X	X		X	X	X			
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X = incompatible materials (must segregate during storage and during use)

Have by products / intermediates been considered? COSHH Regulations require all aspects of the activity to be considered in terms of exposure potential.

Not only do starting materials have to be assessed, but also the possibility of intermediate materials or by-products (for example in a chemical reaction) being generated which could present an exposure risk. Your control measures must take account of these materials. Unwanted by-products (i.e. waste) must be collected, labelled, stored and secured safely until final disposal.

Workplace Exposure Monitoring - Workplace monitoring means using suitable techniques to assess the extent of employees' potential exposure to hazardous substances in the workplace. The information gathered during monitoring helps assess whether the control measures are effective in protecting workers.

Exposure monitoring may be necessary if:

- a failure or deterioration in control measures has been identified (e.g. a lack of containment, or LEV is not performing as intended) which could result in a serious health effect, either because of the toxicity of the substance or because of the extent of potential exposure, or both;
- measurement is required to be sure that a WEL or any self-imposed (in-house) exposure standard is not exceeded;
- the substances and processes are listed in Schedule 5 of the COSHH regulations;
- the risk assessment shows it is needed to monitor for the presence of any biological agents outside the primary physical containment (COSHH assessments for biological agents are covered elsewhere in Safety Code16, Biological Safety).

In STFC environmental monitoring will rarely be required. Take advice from the SHE Group if you think it might be needed.

Is health surveillance required? When deciding on the control measures to prevent an exposure, all routes of entry need to be considered and a combination of controls will likely be required, following a hierarchy.

STFC's Occupational Health provider (OH) will carry out health surveillance where a department has identified it is necessary in the COSHH assessment, in spite of these controls being in place and being effectively implemented.

Health surveillance will be required if there is likely to be significant exposure to substances:

- Where there is evidence of sensitisation or a carcinogenic effect via inhalation or skin;
- Which are likely to cause occupational asthma, e.g. certain wood dusts, colophony (rosin-based solder flux fume);
- Which have recognised systemic toxicity, e.g. heavy metals and their salts.

Consult the SHE Group if you are unsure whether health surveillance is required.

Carcinogens, Mutagens and Reprotoxins: When work involves substances which are known carcinogens, mutagens or reprotoxins a health record should be kept for each person.

Chemical substances, singly or combined in mixtures, may have various harmful effects on human health. Some of these are 'CMRs':

- a) **Carcinogens (C)**: may induce cancer or increase its incidence
- b) **Mutagens (M)**: may induce heritable genetic defects or increase their incidence
- c) **Reprotoxins (R)**: may produce or increase incidence of non-heritable adverse effects in the progeny and/or an impairment of male or female reproductive functions / capacity.

CMRs are divided into categories according to the evidence available of their health effects.

Effects / Hazard Class	Categories	Category definitions
Carcinogens	Category 1A	Substances known to have carcinogenic potential for humans.
	Category 1B	Substances presumed to have carcinogenic potential for humans.
	Category 2	Substances suspected of having carcinogenic potential for humans.
Mutagens	Category 1A	Substances known to induce hereditary mutations in the germ cells of humans.
	Category 1B	Substances presumed to induce hereditary mutations in the germ cells of humans.
	Category 2	Substances of concern because they could induce hereditary mutations in the germ cells of humans.
Reprotoxins	Category 1A	Substances known to be toxic for human reproduction.
	Category 1B	Substances presumed to be toxic for human reproduction.
	Category 2	Substances suspected of being toxic for human reproduction.

In these cases there may be a long latency after exposure and before adverse effects are identified. However, often there are no medical tests available to determine whether or not there has been an exposure. In such cases it would be appropriate to keep a health record. This is not a medical record with confidential information, or a health surveillance record but simply a document which records the date when an individual starts or stops work with a particular CMR and the precautions taken during the work. Further information is provided here [[link to health record guidance](#)]

Working with sensitisers – It is important to highlight in the assessment whether the substance(s) in use is(are) respiratory or dermal sensitisers.

If, prior to starting work, the assessment indicates that the control measures employed may be inadequate to control potential exposure during the activity then a health surveillance programme may be appropriate. This will require a baseline a medical assessment. Follow up examinations will help assess the efficacy of the control measures employed, and monitor the health of the individual. If exposure potential is low then it may be more appropriate to keep a simple health record for the relevant substance.

Further advice should be sought from SHE Group.

Information, instruction, training and supervision – The assessment must be effectively communicated to personnel involved in or affected by the activity (a copy can be used as part of this process).

Completed assessment forms should (wherever possible) be kept in the area where the work takes place (for reference) and their location must be known to all those involved. Storage in electronic form is acceptable, provided the information is readily accessible. If local copies are retained then they must be current and replaced whenever there are changes to the assessment.

Decide whether any special training is required to carry out the activity safely, this should be documented. In most cases, on the job training will be sufficient. However, this **must** include when and how to use the control measures provided, how to use and clean PPE, and how to act in an emergency.

The importance of good technique should not be underestimated as a means to help prevent certain exposures e.g. splashes to the eyes, and inexperienced personnel should be supervised closely during their training period. A local training record should be kept.

Will supervision be required to ensure safe working procedures are effective and continue to work properly?

Equipment testing and maintenance requirements - You must ensure that control measures, are effective and continue to work properly.

Simple visual inspections of engineering control measures (e.g. fume cupboards or LEV) should be carried out before use to ensure an inward flow of air away from the operator's **breathing zone** ² (e.g. pressure gauges, airflow indicators, or 'tell-tales'). Work areas should also be checked for obvious signs of control failure (e.g. dust deposits, odours).

LEV (including fume cupboards) performance is checked annually (via a statutory inspection programme) and coordinated by the SHE Group at RAL and Estates at DL and ROE. Check that equipment has a current test label and is in date.

5. DECLARATION

The name and signature of the person making the assessment is required.

The manager responsible for the activity may also sign the form to acknowledge that (s)he has read the assessment and that it reflects the activity being assessed, and that any resources in terms of equipment or PPE will be provided.

6. ASSESSMENT REVIEW RECORD

The assessment is intended to be a working document and must be reviewed if there is evidence that it is no longer valid, for example:

- following a change in the substance or the form of a substance used in an activity;
 - a major change in work practices which change the way the substances are used;
 - following defects or a breakdown in control measures (failure during equipment inspection and testing, or adverse results of environmental monitoring);
 - where results of health surveillance have identified possible work-related ill health;
-

- when new information emerges on the health effects of exposure to a substance.

Even if none of the above apply, the assessment should be reviewed after at least every 2 years.

7. ASSESSMENT COMMUNICATION RECORD

The key contents of the COSHH assessment, especially the required control measures, must be communicated to the people carrying out the activity. It is recommended that a record is kept of this communication.

Appendix 3 - Determining the level of risk from a hazardous substance used or generated in a task/activity

This method of determining the level of risk from a hazardous substance has the following steps:-

- Categorise the health hazard by using the H phrase number;
- Categorise the quantity of substance used in the activity;
- Categorise the physical characteristics of the substance;

Combine these 3 categorisations to identify the general control approach (such as general ventilation, LEV or containment).

Step 1: Identify the substances


Identify the substances used or generated and where possible obtain the safety data sheet.

Step 2a: Assess the health hazard

Categorise the health hazard of the substance(s) used in, or generated by, the activity. Use the hazard statements (H phrases) given in the Safety Data Sheet from the supplier.

The level of hazard can be categorised from Hazard group A to E.

Hazard groups A-E (chemicals causing harm when breathed in)

Hazard groups A-E (chemicals causing harm when breathed in)					
A	B	C	D	E	
H304, H315, H319, H336 and all H-numbers not otherwise listed	H302, H312, H332, H371	H301, H311, H314, H317, H318, H331, H335, H370, H373	H300, H310, H330, H351, H360, H361, H362, H372	H334, H340, H341, H350	
Least Hazardous Substances				More Hazardous Substances	Special cases
Notes: All phrases/hazard statements now considered a risk on or via the skin.					

Hazard Group S – skin and eye exposure

Since most substances and products can irritate or penetrate the skin, there is nearly always a skin risk.

Step 2b: Quantity of Material

Activities may range from the use of less than a few grams of a substance to kilogram or more quantities. Using a few grams of a hazardous substance will represent much less of an exposure risk than using one kilogram:

Hazard Rating	Quantity / Volume	
Small	Grammes (up to 1kg)	ml (up to 1 litre)
Medium	Kilogrammes (1kg+)	Litres (1 litre+)
Large	Tonnes	1000 litres of m3+

Step 2c: Physical Characteristics

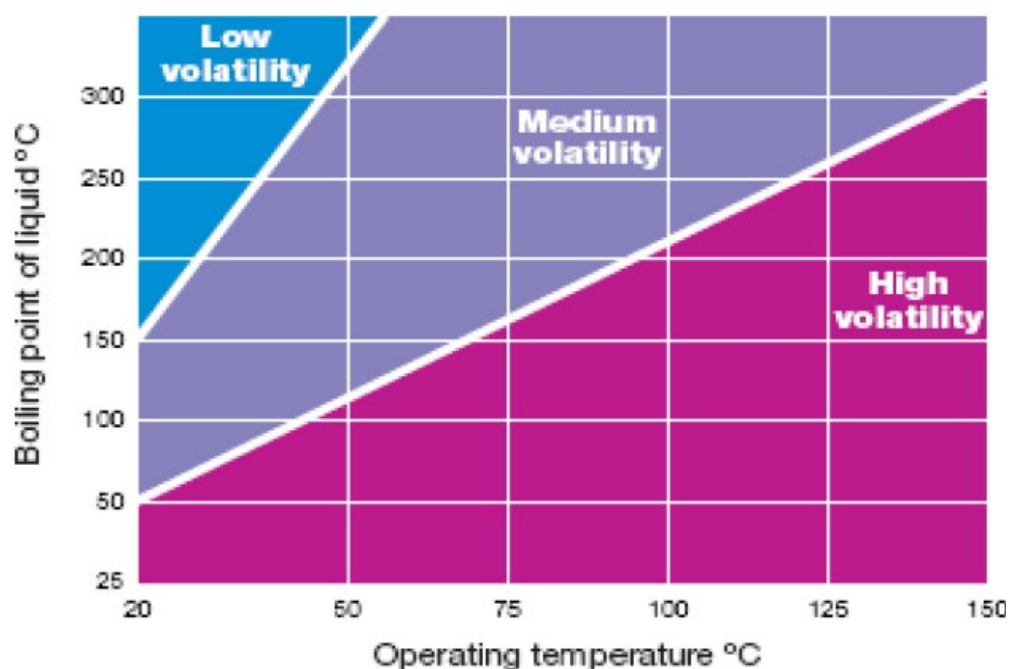
It is important to identify the physical form of the substance under the conditions of use. Different physical forms present different hazards.

For simplicity, the variation of hazard with physical form can be expressed as follows.

Solids

Hazard rating	Physical characteristic
Low	Pellet – does not break up
Medium	Granular or crystalline
High	Fine solid or light powder / dust

Liquids



Step 2d: Determine the Control Approach

Having identified, for each of the substances used in an activity, the hazard rating for health effects, quantity and physical characteristics, use the table below to determine the most suitable Control Approach (level of containment).

Find the control approach

The number in the box represents the control approach

STEP 2B	STEP 2C			
Amount used	Low dustiness or volatility	Medium volatility	Medium dustiness	High dustiness or volatility
Hazard group A				
Small	1	1	1	1
Medium	1	1	1	2
Large	1	1	2	2
Hazard group B				
Small	1	1	1	1
Medium	1	2	2	2
Large	1	2	3	3
Hazard group C				
Small	1	2	1	2
Medium	2	3	3	3
Large	2	4	4	4
Hazard group D				
Small	2	3	2	3
Medium	3	4	4	4
Large	3	4	4	4
Hazard group E				
For all hazard group E substances, choose control approach 4				

Step 3: Determine Suitable Controls

Using the Control Approach from the previous step (1-4 & S), there are general control measures which are advised for each group:

Control Approach	Controls Document number	Controls document title
1	100	General Ventilation
2	200 & 201	Local Exhaust Ventilation (Fume Cupboards)
3	300 & 301	Containment (Glove Boxes)
4	400	Specialist Control Approaches
S	S100	Additional precautions for substances which are harmful via skin or eye contact.

These are HSE published documents giving general guidance for each of the control approaches, copies of these can be found on the following pages.

Step 4: Implement Control Measures

Using the advice from the controls documents, decide what control is needed for your task or process. For a process involving multiple substances, use the highest control group. Find out what you already have available and also what additional control measures might then be required. Make sure someone is actioned to implement any of these additional control measures.

Where any substance has additional hazard statements in the range H400-H413 (harm to the environment) procedures for storage, spills and disposal **MUST** be detailed in the assessment.



Control approach 1



This guidance sheet is aimed at employers to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack COSHH essentials: easy steps to control chemicals. It can be used where the guide recommends control approach 1 (general ventilation) as the suitable approach for your chemical(s) and task(s).

This sheet provides good practice advice on using general ventilation, and can be applied to a range of tasks involving small, medium or large scale use of solids and liquids. It describes the key points you need to follow to help reduce exposure to an adequate level.

It is important that all the points are followed.

Some chemicals can also be flammable or corrosive. Where they are, your controls must be suitable for those hazards too. Look at the safety data sheet for more information.

Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

General ventilation

100

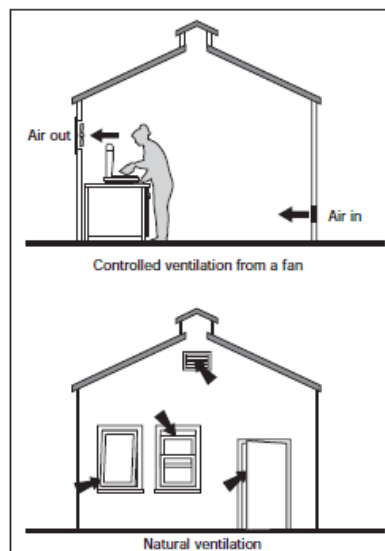
General ventilation

Access

- ✓ Consider restricting access to the working area to those who need to be there.

Design and equipment

- ✓ Provide a good standard of general ventilation. This can be natural ventilation from doors, windows etc, or controlled, where air is supplied or removed by a powered fan.
- ✓ If you work in a shop or office, natural ventilation will normally be enough to control dusts and vapours from cleaning materials etc.
- ✓ If you work in a factory, you will normally need controlled general ventilation to remove contaminated air and make it up with clean replacement air. This can be a wall-mounted fan to extract or supply air, with venting through airbricks, grills or louvres, or a more complex ducted air supply and removal system.



- ✓ Ensure that supplied or make-up air comes from an uncontaminated area.
- ✓ Ensure that enough fresh air is supplied to dilute and remove the dust or vapour produced.
- Between 5 and 15 air changes per hour are recommended.
- ✓ Discharge air away from doors, windows and other air inlets.
- ✓ With dusts, you can re-circulate clean, filtered air into the workroom.
- ✗ With vapours, re-circulation is not recommended.
- ✓ Ensure, where possible, that air comes from a fresh source, flows past the worker and then past the work activity to the extraction point.

Maintenance

- ✓ Maintain the system as advised by the supplier/installer in effective and efficient working order.

Examination and testing (if a ventilation system is provided)

- ✓ Get information on the design performance of the ventilation equipment from the supplier. If this isn't possible, get a competent ventilation engineer to obtain information on the system's optimum performance as part of a thorough examination and test of the system. Keep this information to compare with future test results.
- ✓ Visually check the ventilation equipment at least once a week to make sure it's working and hasn't been damaged.
- ✓ Get the ventilation equipment examined and tested against its performance specification.
- ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

- ✓ Clean work equipment and the work area daily. Clean other equipment and the workroom regularly - once a week is recommended.
- ✓ Deal with spills immediately.
- ✗ Don't clean up with a dry brush or compressed air. Vacuum or wet clean.
- ✓ Store containers in a safe place and dispose of empty containers safely (see CGS 101).
- ✓ Put lids on containers immediately after use.

Personal protective equipment (PPE)

- ✓ Chemicals in **hazard group S** can damage the skin and eyes, or enter the body through the skin and cause harm. See CGS S100 and S101 for more specific advice. Check the safety data sheets to see what personal protective equipment is needed.
- ✓ Ask your safety clothing supplier to help you select suitable protective equipment.
- ✗ Respiratory protective equipment shouldn't be needed for routine tasks.
- ✓ Keep any PPE clean, and replace at recommended intervals.

Training

- ✓ Give workers information on the harmful nature of the substance.
- ✓ Provide them with training on: handling chemicals safely; checking controls are working and using them; and what to do if something goes wrong.

Supervision

- ✓ Have a system to check that control measures are in place and being followed.

Further information

- Safety data sheets
- *Controlling airborne contaminants in the workplace* Technical guide no 7 British Occupational Hygiene Society 1987 ISBN 0 9059 2742 7
- Control guidance sheets 101, 102, 103, S100 and S101

Employee checklist for making the best use of the controls

- Make sure the room is well ventilated, and any extraction or air supply is switched on and working.
- Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, tell your supervisor. Don't carry on working if you think there is a problem.
- Wash your hands before and after eating, drinking or using the lavatory.
- Don't use solvents to clean your skin.
- Clear up spills immediately. For liquids, contain or absorb (with granules or mats). For solids, use vacuum cleaning or wet mopping. Dispose of spills safely.



COSHH essentials:
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Local exhaust ventilation

Engineering control

200



This guidance sheet is aimed at employers to help them comply with the requirements of the

Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack *COSHH essentials: easy steps to control chemicals*. It can be used where the guide recommends control approach 2 (engineering control) as the suitable approach for your chemical(s) and task(s).

This sheet provides good practice advice on using local exhaust ventilation which is the commonest form of engineering control. It can be applied to a range of tasks involving small, medium and large scale use of solids or liquids. It describes the key points you need to follow to help reduce exposure to an adequate level.

It is important that all the points are followed.

Some chemicals can also be flammable or corrosive. Where they are, your controls must be suitable for those hazards too. Look at the safety data sheet for more information.

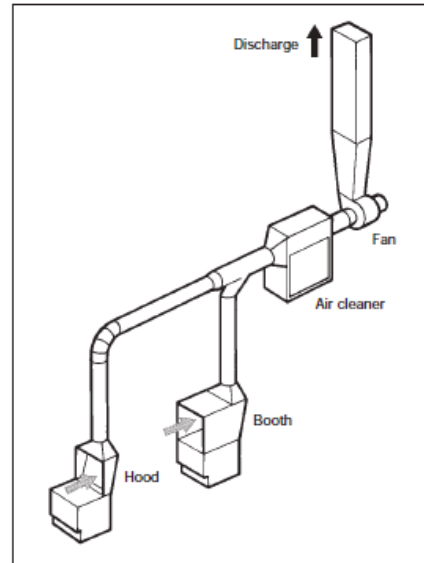
Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Access

- ✓ Restrict access to the working area to authorised staff only.

Design and equipment

- ✓ Apply local exhaust ventilation (LEV) at the source of exposure to capture the dust or vapour.
- ✓ Enclose the source of dust or vapour as much as possible to help stop it spreading.
- ✓ Don't allow the worker to get between the source of exposure and the LEV, otherwise they'll be directly in the path of the contaminated airflow.
- ✓ Where possible, site the work area away from doors, windows and walkways, to stop draughts interfering with the LEV and spreading the dust or vapour.
- ✓ Have an air supply coming into the workroom to replace extracted air.
- ✓ Keep ducts short and simple, and avoid long sections of flexible duct.
- ✓ Provide an easy way of checking the LEV is working, eg manometer, pressure gauge or tell-tale.
- ✓ Discharge extracted air to a safe place away from doors, windows and air inlets.
- ✓ With exposure to dusts, you can re-circulate clean, filtered air into the workroom.
- ✗ With exposure to vapours, re-circulation is not recommended.



Maintenance

- ✓ Maintain the LEV as advised by the supplier, in effective and efficient working order.

Examination and testing

- ✓ Get information on the design performance of the LEV from the supplier. If this isn't possible, get a competent engineer to give you information on the system's optimum performance as part of a thorough examination and test of the system. Keep this information to compare with future test results.
- ✓ Check the LEV and visible ducting at least once a week for signs of damage.
- ✓ Have the LEV examined and tested against its performance standard - generally at least every 14 months (see HSE publication HSG54).
- ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

- ✓ Clean equipment and the work area daily. Clean other equipment and the workroom regularly - once a week is recommended.
- ✓ Deal with spills immediately.
- ✓ Store containers in a safe place and dispose of empty containers safely (see CGS 101).
- ✓ Put lids on containers immediately after use.
- ✗ Don't clean up with a dry brush or compressed air. Vacuum or wet clean.

Personal protective equipment (PPE)

- ✓ Chemicals in **hazard group S** can damage the skin and eyes, or enter the body through the skin and cause harm. See CGS S100 and S101 for more specific advice. Check the safety data sheets to see what personal protective equipment is necessary.
- ✓ Ask your safety clothing supplier to help you select suitable protective equipment.
- ✓ Respiratory protective equipment shouldn't be needed for routine tasks. It may be needed for some cleaning and maintenance activities, eg dealing with spills.
- ✓ Keep any PPE clean, and replace at recommended intervals.

Training

- ✓ Give workers information on the harmful nature of the substance.
- ✓ Provide them with training on handling chemicals safely; checking controls are working and using them; when and how to use any PPE you provide; and what to do if something goes wrong.

Supervision

- ✓ Have a system to check that control measures are in place and being followed.

Further information

- Safety data sheets
- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *An introduction to local exhaust ventilation* HSG37 (second edition) HSE Books 1993 ISBN 0 7176 1001 2
- *Controlling airborne contaminants in the workplace* Technical guide no 7 British Occupational Hygiene Society 1987 ISBN 0 9059 2742 7
- Control guidance sheets 101, 204, S100 and S101

Employee checklist for making the best use of the controls


- Make sure the LEV is switched on and is working.
- Make sure it is working properly; check the manometer, pressure gauge or tell-tale.
- Make sure the air movement is across or away from your face.
- Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, tell your supervisor. Do not carry on working if you think there is a problem.
- Make sure that paper bags and other waste aren't drawn into the LEV.
- Wash your hands before and after eating, drinking or using the lavatory.
- Don't use solvents to clean your skin.
- Clear up spills immediately. For liquids, contain or absorb spills with granules or mats. For solids, use vacuum cleaning or wet mopping. Dispose of spills safely.
- Use, maintain and store any PPE provided in accordance with instructions.



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2



Control approach 2



This guidance sheet is aimed at employers to help them comply with the requirements of

the Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack *COSHH essentials: easy steps to control chemicals*. It can be used where the guide recommends control approach 2 (engineering control) as the suitable approach for your chemical(s) and task(s).

This sheet provides good practice advice on using a fume cupboard or a back ventilated workbench. It can be applied to many small-scale tasks using solids or liquids, eg weighing or mixing. It describes the key points you need to follow to help reduce exposure to an adequate level.

It is important that all the points are followed.

Some chemicals can also be flammable or corrosive. Where they are, your controls must be suitable for those hazards too. Look at the safety data sheet for more information.

Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Fume cupboard

Engineering control

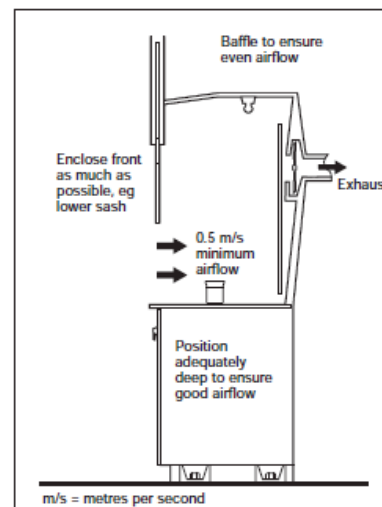
201

Access

- ✓ Restrict access to the working area to authorised staff only.

Design and equipment

- ✓ Ensure fume cupboards are designed to recognised standards.
- ✓ Airflow at the opening of the cupboard should be at least 0.5 metres per second for vapour and 1 metre per second for dust.
- ✓ Make the cupboard deep enough to comfortably contain equipment and materials.
- ✓ Keep the opening as small as possible, but allow enough room to work safely. Keep the sash down as far as possible.
- ✓ Provide good lighting. It should be suitable for the chemical(s) or task(s), eg dust tight or flameproof.
- ✓ Where possible, site the work area away from doors, windows and walkways to stop draughts interfering with the ventilation and spreading dust or vapour.
- ✓ Have an air supply coming into the workroom to replace air extracted by the fume cupboard.
- ✓ Keep ducts short and simple, and avoid long sections of flexible duct.
- ✓ Provide an easy way of checking the equipment is working, eg manometer, pressure gauge or tell-tale.
- ✓ Discharge extracted air to a safe place away from doors, windows and air inlets.
- ✓ With exposure to dusts you can re-circulate clean, filtered air into the workroom.
- ✗ With exposure to vapours, re-circulation is not recommended.



Maintenance

- ✓ Maintain the equipment as advised by the supplier/installer, in effective and efficient working order.

Examination and testing

- ✓ Get information on the design performance of the equipment from the supplier. Keep this information to compare with future test results.
- ✓ Visually check the equipment at least once a week for signs of damage.
- ✓ Have the equipment examined and tested against its performance standard - generally at least every 14 months (see HSE publication HSG54).
- ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

- ✓ Clean equipment and the work area daily. Clean other equipment and the workroom regularly - once a week is recommended.
- ✓ Deal with spills immediately.
- ✓ Store containers in a safe place and dispose of empty containers safely (see CGS 101).
- ✓ Put lids on containers immediately after use.
- ✗ Don't clean up with a dry brush or compressed air. Vacuum or wet clean.

Personal protective equipment (PPE)

- ✓ Chemicals in **hazard group S** can damage the skin and eyes, or enter the body through the skin and cause harm. See CGS S100 and S101 for more specific advice. Check the safety data sheets to see what personal protective equipment is necessary.
- ✓ Ask your safety clothing supplier to help you select suitable protective equipment.
- ✓ Respiratory protective equipment shouldn't be needed for routine tasks. It may be needed for some cleaning and maintenance activities, eg dealing with spills.
- ✓ Keep any PPE clean and replace at recommended intervals.

Training

- ✓ Give workers information on the harmful nature of the substance.
- ✓ Provide them with training on: handling chemicals safely; checking controls are working and using them; when and how to use any PPE you provide; and what to do if something goes wrong.

Supervision

- ✓ Have a system to check that control measures are in place and being followed.

Further information

- Safety data sheets
- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *An introduction to local exhaust ventilation* HSG37 (second edition) HSE Books 1993 ISBN 0 7176 1001 2
- Control guidance sheets 101, S100 and S101

Employee checklist for making the best use of the controls

- Make sure the ventilation equipment is switched on and is working.
- Make sure it is working properly; check the manometer, pressure gauge or tell-tale.
- Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, tell your supervisor. Do not carry on working if you think there is a problem.
- Make sure that paper bags and other waste aren't drawn into the ventilation system.
- Make sure large items don't obstruct the opening to the cupboard.
- Wash your hands before and after eating, drinking or using the lavatory.
- Don't use solvents to clean your skin.
- Clear up spills immediately. For liquids, contain or absorb spills with granules or mats. For solids, use vacuum cleaning or wet mopping. Dispose of spills safely.
- Use, maintain and store any PPE provided in accordance with instructions.



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Containment

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Containment



This guidance sheet is aimed at employers to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack *COSHH essentials: easy steps to control chemicals*. It can be used where the guide recommends control approach 3 (containment) as the suitable approach for your chemical(s) and task(s).

This sheet provides good practice advice on containment, and can be applied to a range of tasks involving small, medium or large-scale use of solids and liquids. It describes the key points you need to follow to reduce exposure to an adequate level.

It is important that all the points are followed.

Some chemicals can also be flammable or corrosive. Where they are, your controls must be suitable for those hazards too. Look at the safety data sheet for more information.

Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Access

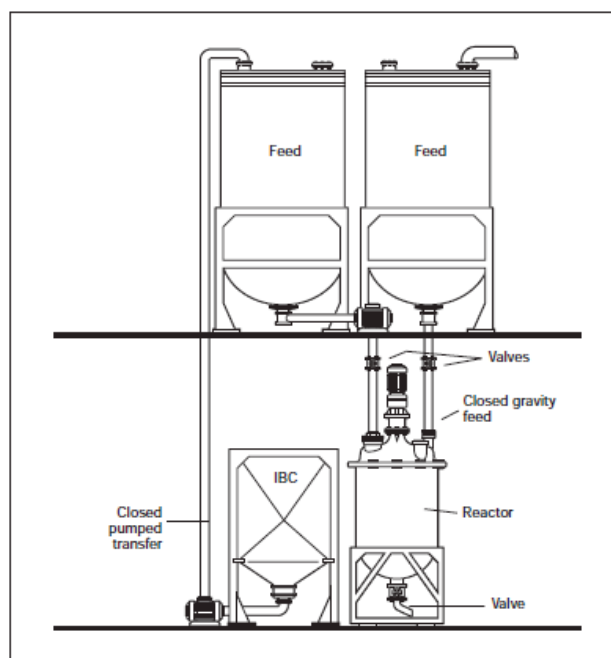
- ✓ Control staff entry to the work area.
- ✓ Work area and equipment should be clearly labelled.

Design and equipment

- ✓ You need to use closed systems to a standard normally used in industry. Limited breaching of containment is allowed, for example taking quality control samples.
- ✓ Design the closed system to allow easy maintenance.
- ✓ Where possible, keep equipment under negative pressure to stop leaks.
- ✓ Discharge extracted air to a safe place away from doors, windows and air inlets.
- ✓ Get information from the supplier on all parameters needed to safely operate the system.

Maintenance

- ✓ Ensure all equipment used in the task is maintained as advised by the supplier/installer, in effective and efficient working order and good repair.
- ✓ Adopt a 'permit to work' system for maintenance work.



- ✓ Follow any special procedures that are needed before the system is opened or entered, eg purging and washing.
- ✗ Don't enter any confined space until it has been checked for hazardous materials and oxygen content (see HSE publication INDG258).

Examination and testing

- ✓ Visually check all equipment at least once a week for signs of damage.
- ✓ Have equipment thoroughly examined and tested against its performance standard. This is generally at least every 14 months (see HSE publication HSG54).
- ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

- ✓ Clean equipment and the work area daily. Clean other equipment and the workroom regularly - once a week is recommended.
- ✓ Store packages/containers in a safe place, and dispose of empty packages/containers safely (see CGS 101).
- ✓ Put lids on containers immediately after use.
- ✓ Deal with any spills immediately.
- ✗ For dusts, don't clean up with a dry brush or compressed air, use a vacuum system or wet cleaning.
- ✓ For liquids, contain or absorb (with granules or mats).

Personal protective equipment (PPE)

- ✓ Chemicals in **hazard group S** can damage the skin and eyes, or enter the body through the skin and cause harm. See CGS S100 and S101 for more specific advice. Check the safety data sheets to see what personal protective equipment is necessary.
- ✓ Ask your safety clothing supplier to help you select suitable protective equipment.
- ✓ Respiratory protective equipment (RPE) shouldn't be needed for routine tasks. It may be needed for some cleaning and maintenance activities, eg dealing with spills. Be aware that some maintenance activity may involve entry into confined spaces. Decide if supplied air is needed when RPE is used.
- ✓ Ensure PPE is kept in a clean condition and replaced when necessary.

Training

- ✓ Give your workers information on the harmful nature of the chemicals.
- ✓ Provide them with training on: operating the process; following maintenance procedures; when and how to use PPE; and how to detect and deal with leaks.

Supervision

- ✓ Have a system to check that control measures are in place and are being followed.

Further information

- Safety data sheets
- *Safe work in confined spaces* INDG258 HSE Books 1999
- Control guidance sheets 101, 204, 302, S100 and S101

Employee checklist for making the best use of the controls

- Make sure any ventilation system is switched on and working.
- Look for signs of leaks, wear or damage of any equipment used. If you find any problems, tell your supervisor. Do not carry on working if you think there is a problem.
- Wash your hands before and after eating, drinking or using the lavatory.
- Do not use solvents to clean your skin.
- Clear up spills immediately. For liquids, contain or absorb spills with granules or mats. For solids, use vacuum cleaning or wet mopping. Dispose of spills safely.
- Use, maintain and store any PPE provided in accordance with instructions.



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Glove box

Containment



This guidance sheet is aimed at employers to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack *COSHH essentials: easy steps to control chemicals*. It can be used where the guide recommends control approach 3 (containment) as the suitable approach for your chemical(s) and task(s).

This sheet provides good practice advice on using a glove box, and can be applied to a range of tasks involving small-scale use of solids and liquids. It describes the key points you need to follow to reduce exposure to an adequate level.

It is important that all the points are followed.

Some chemicals can also be flammable or corrosive. Where they are, your controls must be suitable for those hazards too. Look at the safety data sheet for more information.

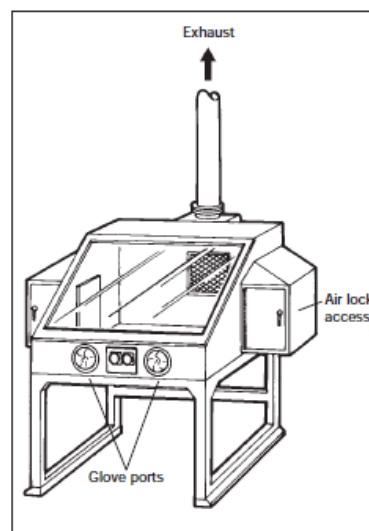
Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Access

- ✓ Control staff entry to the work area.
- ✓ Work area and equipment should be clearly labelled.

Design and equipment

- ✓ Surfaces inside the glove box should be smooth, impermeable and easily decontaminated. Strippable plastic coating can be used to simplify decontamination.
- ✓ Provide one or more air locks.
- ✓ In some situations (for example, where gas flames are required within the unit), filter units must be fitted on the access doors to allow airflow into the unit.
- ✓ Electrical and other services required within the glove box should have their controls positioned outside the unit.
- ✓ Gloves should be resistant to the chemicals being used, and sealed to the glove ports.
- ✓ Provide good lighting. Select lighting equipment suitable for the nature of the chemicals and processes, eg dust tight or flameproof.
- ✓ Apply ventilation to achieve a slight negative pressure. Use a disposable filter on the inlet to the system.
- ✓ The exhaust from the glove box usually needs to be passed through a suitable scrubber or high efficiency particle arrestor (HEPA) filter before discharge.
- ✓ Design the glove box to allow easy maintenance.
- ✓ Discharge extracted air to a safe place away from doors, windows and air inlets.



Maintenance

- ✓ Ensure all equipment used in the task is maintained as advised by the supplier/installer, in effective and efficient working order and good repair.
- ✓ Adopt a 'permit to work' system for maintenance work.
- ✓ Follow any special procedures that are needed before the system is opened or entered, eg purging and washing.
- ✓ Disposable and HEPA filters should be replaced as required.

Examination and testing

- ✓ Get information from the supplier on all parameters needed to safely operate the system.
- ✓ Visually check equipment at least once a week for signs of damage.
- ✓ Ensure any extraction equipment is thoroughly examined and tested against its performance standard. This is generally at least every 14 months (see HSE publication HSG54).
- ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

- ✓ Thoroughly clean work equipment and the working area daily. Clean other equipment and the workroom regularly - once a week is recommended.
- ✓ Store packages/containers in a safe place, and dispose of empty packages/containers safely (see CGS 101).
- ✓ Put lids on containers immediately after use.
- ✓ Deal with any spills immediately.
- ✗ For dusts, don't clean up with a dry brush or compressed air, use a vacuum system or wet cleaning.
- ✓ For liquids, contain or absorb (with granules or mats).

Personal protective equipment (PPE)

- ✓ Chemicals in **hazard group S** can damage the skin and eyes, or enter the body through the skin and cause harm. See CGS S100 and S101 for more specific advice. Check the safety data sheets to see what personal protective equipment is necessary.
- ✓ Ask your safety clothing supplier to help you select suitable protective equipment.
- ✓ Respiratory protective equipment (RPE) should not normally be necessary for routine operations. It may be needed for some cleaning and maintenance activities, eg dealing with spills.
- ✓ Ensure PPE is kept in a clean condition and replaced when necessary.

Training

- ✓ Give your workers information on the harmful nature of the chemicals.
- ✓ Provide them with training on: operating the process; following maintenance procedures; when and how to use PPE; and how to detect and deal with leaks.

Supervision

- ✓ Have a system to check that all control measures are in place and being followed.

Further information

- Safety data sheets
- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *An introduction to local exhaust ventilation* HSG37 (second edition) HSE Books 1993 ISBN 0 7176 1001 2
- Control guidance sheets 101, S100 and S101

Employee checklist for making the best use of the controls

- Make sure the ventilation system is switched on and working.
- Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, tell your supervisor. Do not carry on working if you think there is a problem.
- Make sure that paper bags and other waste material are not drawn into the ventilation duct.
- Make sure that all required items are placed in the air lock before starting work.
- Wash your hands before and after eating, drinking or using the lavatory.
- Do not use solvents to clean your skin.
- Clear up spills immediately. For liquids, contain or absorb with granules or mats. For solids, use vacuum cleaning or wet mopping. Dispose of spills safely.
- Use, maintain and store any PPE provided in accordance with instructions.



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General principles

400

Special



Control approach 4



This guidance sheet is aimed at employers to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH), by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack *COSHH essentials: easy steps to control chemicals*. It can be used where the guide recommends control approach 4 (special) as the approach needed for your chemical(s) and task(s).

Some chemicals are also flammable or corrosive. Where they are, your controls must be suitable for those hazards too. Look at the safety data sheet for more information.

Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Background

Control approach 4 (special) means you have a situation where you need more specific and specialist advice than provided by *COSHH essentials: easy steps to control chemicals*. The advice may come from a more detailed HSE guidance document, or you may need to involve an expert, such as a qualified occupational hygienist. An occupational hygienist can give you site-specific advice on your risk assessment, the possibility of substituting the chemical you are using for a less hazardous one, and control measures. It is important that you seek further advice.

COSHH essentials identifies control approach 4 if:

- you are handling chemicals assigned to hazard group E. These have the potential to cause **very serious health effects**, such as cancer or asthma, and a safe level of exposure will be difficult to establish. Different types of control will be needed for different chemicals in this group. For certain processes, eg foundry working and woodworking, some relevant sheets have now been included under Direct advice (or Part 2 of the published version); or
- you are handling large quantities of chemicals that can easily become airborne and that cause **serious health effects**. All aspects of handling these substances need to be assessed at a level of detail beyond that provided by *COSHH essentials*.

Further information

- HSE may have published detailed guidance on your chemical and task. Phone the HSE Infoline on 08701 545500 to find out.
- The British Occupational Hygiene Society (BOHS) Faculty of Occupational Hygiene keeps lists of qualified consultants who can help you. Contact BOHS on 0133 299 8087 or at www.bohs.org/
- Chemicals assigned the R-phrases R42 can cause asthma and are covered by Appendix 3 (Control of substances that cause occupational asthma) of the *Approved Code of Practice L5* HSE Books 2002 ISBN 0 7176 2534 6. HSE has also published some relevant guidance *Preventing asthma at work: how to control respiratory sensitisers L55* HSE Books 1994 ISBN 0 7176 0661 9
- Chemicals assigned the R-phrases R45 or R49 may cause cancer and are covered by Appendix 1 (Control of carcinogenic substances) of *Control of substances hazardous to health. The Control of Substances Hazardous to Health Regulations 2002. Approved Code of Practice and guidance L5* (Fourth edition) HSE Books 2002 ISBN 0 7176 2534 6

S100

COSHH essentials: Harm via skin or eye contact

Skin or eye contact

Control approach S Supplementary advice



This information will help employers comply with the Control of Substances Hazardous to Health Regulations 2002 (COSHH), as amended, to control exposure to chemicals and protect workers' health.

It is also useful for trade union safety representatives.

This sheet covers general points on skin exposure.

It is important to follow all the points, or use equally effective measures.

Contact with skin and eyes

- ✓ Liquids and solids can contact skin and eyes in the following ways:
 - direct contact – handling, immersion;
 - splashes and dust or spray settling on the skin; and
 - touching contaminated surfaces, including work clothing.
- ✓ Skin contact is almost inevitable. Once the hands are contaminated, contamination spreads to other parts of the skin or into the mouth by touching or scratching.

Exposure control

- ✓ Reduce the chance of contact with skin or eyes:
 - modify the process to minimise handling;
 - change the physical form – to granules from dusty powders, or to pastes from liquids;
 - segregate clean and dirty areas to reduce the spread of contamination;
 - provide smooth, impervious, easily cleaned surfaces;
 - launder work clothing regularly;
 - provide clean washrooms, with pre-work creams and after-work creams for skin care;
 - tell workers about the risk and about good personal hygiene;
 - check skin for dryness or soreness regularly;
 - clean the workroom regularly;
 - provide eye protection where there are splash risks; and
 - plan how to deal with spillages swiftly and safely.
- ✓ Workers should wash their hands before and after eating, drinking, smoking, using the lavatory or applying cosmetics.
- ✓ See Sheet S101 for advice on selecting protective gloves and S102 for other PPE.

Useful links

- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at www.bohs.org for lists of qualified hygienists who can help you.
- Look in the Yellow Pages under 'Health and safety consultants' and 'Health authorities and services' for 'occupational health'.
- Also see www.nhsplus.nhs.uk.



Selection of personal protective equipment

Chemicals causing harm via skin or eye contact

S101



The guidance in this sheet is aimed at employers and the self-employed to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH), by controlling exposure to chemicals and protecting workers' health.

The sheet is part of the HSE guidance pack *COSHH essentials: easy steps to control chemicals*. It can be used alongside control approaches 1-4 where the guidance allocates a chemical to hazard group S ie where chemicals can cause harm in contact with skin and eyes.

This sheet provides advice on the selection and use of personal protective equipment (PPE). It describes the key points you need to follow to provide adequate control and to help ensure exposure is reduced to an acceptable level. Other sheets in the S series provide additional help on specific issues related to substances in group S.

Some chemicals can also be flammable or corrosive. Control equipment must be suitable for these hazards too. Look at the safety data sheet for more information.

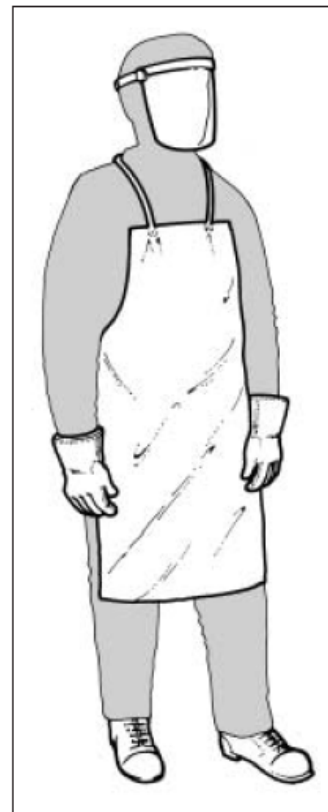
Depending on the scale of work, releases into the atmosphere may be regulated within the pollution prevention and control (PPC) framework. You should consult your local authority or the Environment Agency. In Scotland, consult the Scottish Environment Protection Agency (SEPA). They will advise you if PPC legislation applies to your company, and about air cleaning and discharging emissions into the air. Otherwise, minimise emissions into the air.

Types of PPE

The information you obtained from answering the questions on sheet S100 will help you decide which parts of the body are likely to be exposed to the chemicals in hazard group S. The five types of clothing that may be required are:

- chemical protective gloves;
- coveralls;
- protective footwear;
- face or eye shields;
- respiratory protective equipment (RPE).

Your protective equipment supplier should normally be able to tell you the type of protective material to select. Not all materials give protection against all chemicals. Some chemicals pass through protective materials over a period of time. It is important that you also ask your supplier how frequently the protective equipment needs to be changed. Ensure that the equipment is changed when necessary. Remember to train your workers and make sure they follow the instructions.



General precautions

- ✓ Check protective equipment for damage both before and after use.
- ✓ Clean and maintain all PPE regularly.
- ✓ Use disposable protective equipment only once and dispose of it safely after use.
- ✓ Wash cotton type overalls on a regular basis.
- ✓ Wash overalls at work or at a specialist laundry. They should not be taken home and washed with the 'family' wash.
- ✓ Store protective clothing in a clean cupboard or locker.
- ✓ Store clean and dirty clothing separately.
- ✓ Provide a good standard of personal washing facilities.

Chemical protective gloves

- ✓ The gloves must be sufficiently robust not to tear or cut while undertaking the work activity.
- ✓ Leather or stitched working gloves are not suitable for working with chemicals.
- ✓ If you do need to use single-use natural rubber latex gloves, they must be 'low-protein, powder-free' gloves. See latex allergy web pages at www.hse.gov.uk/latex
- ✓ Make sure workers don't touch the outside of a contaminated glove with a naked hand when putting gloves on or taking gloves off.

Coveralls

- ✓ The material selected should be resistant to the penetration of liquids, dusts or granules as appropriate.
- ✓ For corrosive materials such as acids, an impervious apron gives good protection.
- ✓ Coveralls should normally be worn over boots rather than be tucked in.
- ✓ Gloves should normally be worn over the sleeves to help stop contamination getting on the inside of the PPE.

Protective footwear

- ✓ Protective footwear may be necessary for safety reasons as well as for protection against chemicals. Toe cap protection, heat protection and a metal sole plate may be needed.
- ✓ Ensure protective footwear complies with the appropriate EC Standard.
- ✓ When there is a risk of liquid coming into contact with the lower leg, wellington boots should be worn.

Eye and face protection

- ✓ When handling open containers of corrosive liquids, full-face shields should be worn.
- ✓ Chemical splash goggles may be more practicable when wearing a respirator.

Respiratory protective equipment (RPE)

- ✓ The selection and use of RPE needs careful consideration - see the HSE publication *The selection, use and maintenance of respiratory protective equipment: A practical guide* HSG53 (second edition)
HSE Books 1998 ISBN 0 7176 1537 5



COSHH essentials:
easy steps to control chemicals
October 2003

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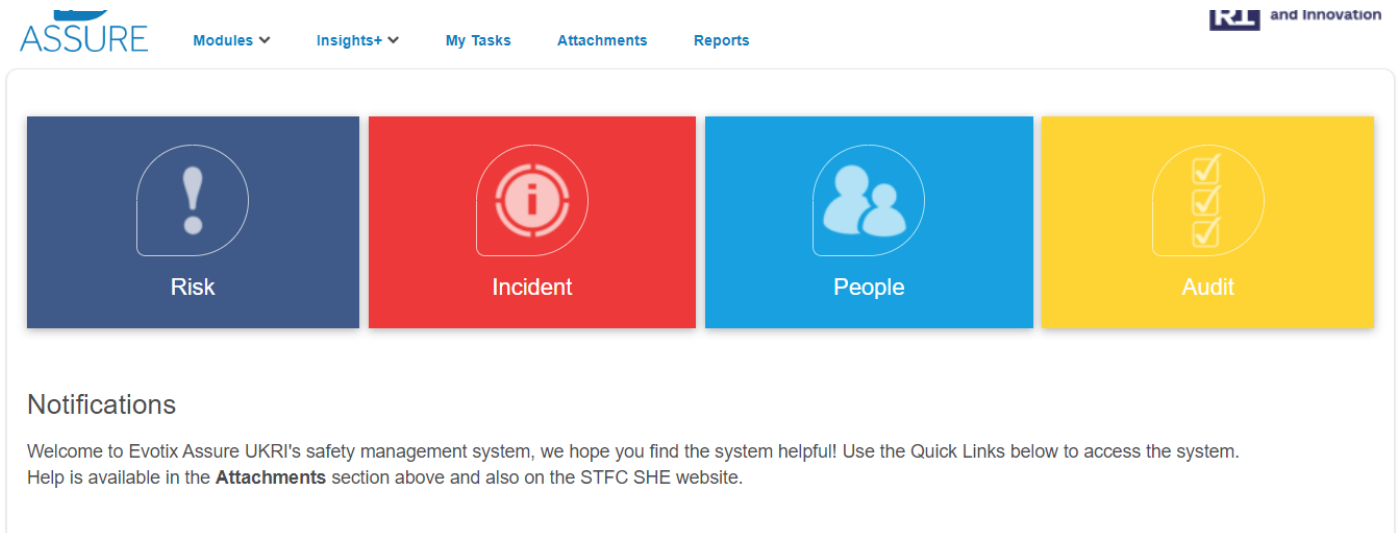
Hazard Statements – (CLP-GHS Hazard (H) statements)

H no.	Phrase	Group
300	Fatal if swallowed	D
301	Toxic if swallowed	C
302	Harmful if swallowed	B
304	May be fatal if swallowed and enters airways	A
310	Fatal in contact with skin	D
311	Toxic in contact with skin	C
312	Harmful in contact with skin	B
314	Causes severe burns and eye damage	C
315	Causes skin irritation	A
317	May cause an allergic skin reaction	C
318	Causes serious eye damage	C
319	Causes serious eye irritation	A
330	Fatal if inhaled	D
331	Toxic if inhaled	C
332	Harmful if inhaled	B
334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	E
335	May cause respiratory irritation	C
336	May cause dizziness or drowsiness	A
340	May cause genetic defects (<i>route if relevant</i>)	E
341	Suspected of causing genetic defects (<i>route if relevant</i>)	E
350	May cause cancer (<i>route if relevant</i>)	E
351	Suspected of causing cancer (<i>route if relevant</i>)	D
360	May damage fertility or the unborn child (<i>effect if known, route if relevant</i>)	D
361	Suspected of damaging fertility or the unborn child (<i>effect if known, route if relevant</i>)	D
362	May cause harm to breast-fed children	D
370	Causes damage to organs (<i>organ if known, route if relevant</i>)	C
371	May cause damage to organs (<i>organ if known, route if relevant</i>)	B
372	Causes damage to organs through prolonged or repeated exposure (<i>organ if known, route if relevant</i>)	D
373	May cause damage to organs through prolonged or repeated exposure (<i>organ if known, route if relevant</i>)	C
EU66	Repeated exposure may cause skin dryness or cracking	A
EU70	Toxic by eye contact	E
EU71	Corrosive to the respiratory tract	C

Appendix 4 - Adding your completed COSHH Assessment form into Evtix Assure

Adding COSHH Assessment to Assure

On the Evtix Assure home page select the Risk module



Then select COSHH Assessment



Click on +New Record

COSHH Assessment Actions Attachments Notes

Record Details

Org Unit Science and Technology Facilities Cr

Ensure the Org Unit is correct

Reference* Automatic Reference System Assigned

Is This Confidential

Publish To Portal

Leave these unticked

Project Risk Assessment Reference

Description* Brief description of the activity or process

Brief description of the activity or task

Location Location of the activity

Location of the activity

Site

Site of the activity

Assessor Name Your name

Title n/a

Assessment Date

Add the date from the assessment form

Activity Or Process I.D. And Work Method n/a

Open Environment?

Workshop?

Enclosed Space?

Confined Space?

Food Grade?

Approved For Use Within Area?

Leave these unticked

Any Limitations or Comments COSHH Assessment form attached

Add comment here that the COSHH Assessment is attached

Substance

Assessment

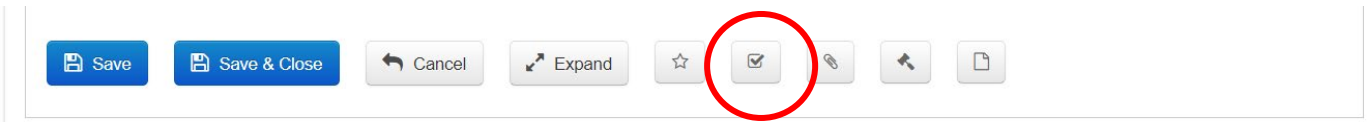
PPE

Conclusion

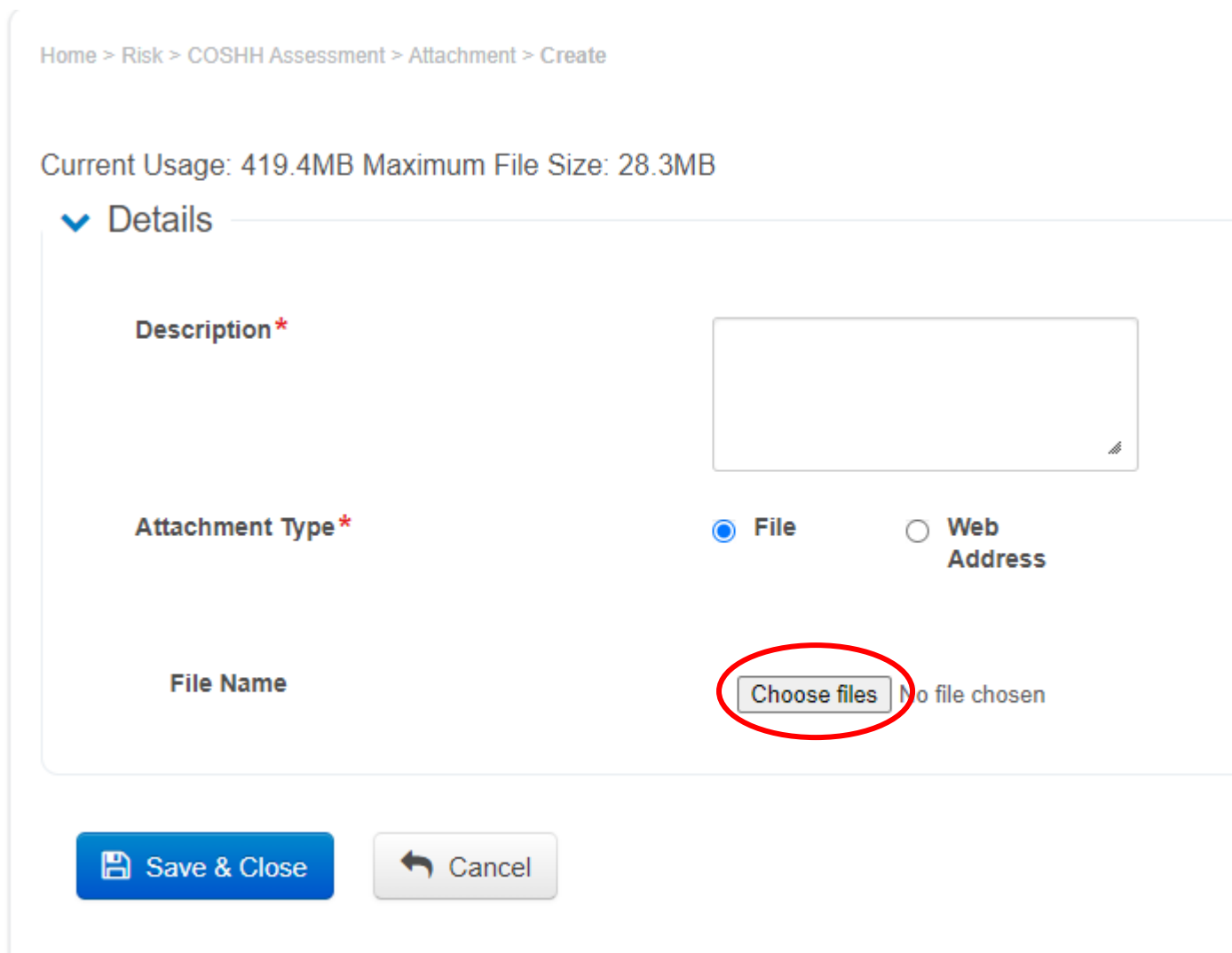
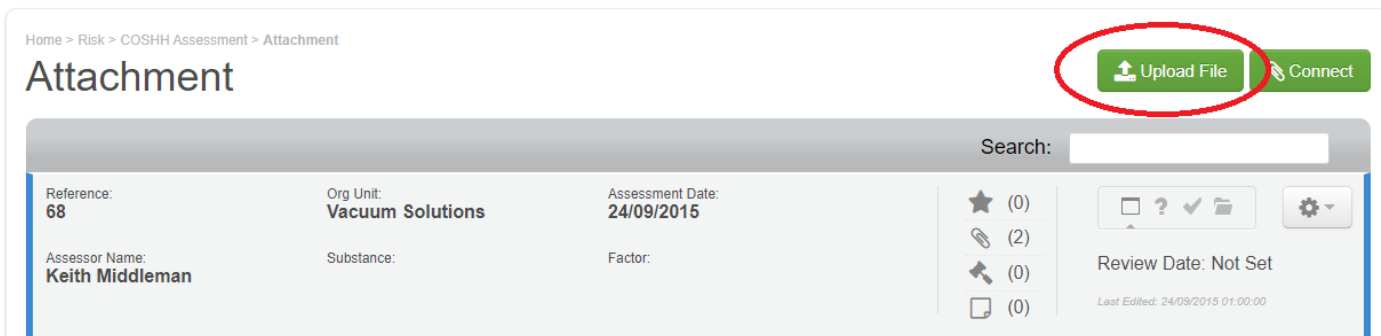
Record Review

Click Save

You should now see these extra icons.



Click on the paperclip icon to go to the Attachment page where you can Upload your COSHH Assessment form



Choose the file(s) and then click 'Save & Close'

The file(s) should then be listed in the Attachment page.

From the Attachments page you can also set a **Review date** for the assessment (which will trigger a reminder):

Home > Risk > COSHH Assessment > Attachment

Attachment

Upload File Connect

Search: []

Reference: 68 Org Unit: Vacuum Solutions Assessment Date: 24/09/2015

Assessor Name: Keith Middleman Substance: Factor:

Name	Description	Type	Size	Date Created
vacuum science laboratories coshh assessment.xlsx	COSHH Assessment for Cockcroft Vacuum Science Laboratories G02 and G03	File	0.0KB	05/11/2014
updated coshh assessment for ci vacuum labs .xlsx	Updated COSHH Assessment for Cockcroft Institute vacuum labs G02 & G03	File	0.0KB	24/09/2015

Showing 1 to 2 of 2 entries

EVOTIX

Click on the 'cog-wheel', then 'Reviews – this will bring up the Reviews page:

Home > Risk > COSHH Assessment > Review

Review

+ New Record

Search: []

Reference: 68 Org Unit: Vacuum Solutions Assessment Date: 24/09/2015

Assessor Name: Keith Middleman Substance: Factor:

Due Date	Review By	Complete Date
No matching records found		

Showing 1 to 0 of 0 entries

EVOTIX

Click on 'New Record':

Home > Risk > COSHH Assessment > Review > Create

Create Review

Due Date* 23/05/2023

Review By Administrator

Comments

Save & Close Cancel

Your name should be entered here!

Select a suitable date **AND** change the 'Review By' to show your name (click on the Cog-wheel and search on your surname). Then click 'Save & Close'