



The Chartered
Society for Worker
Health Protection

Module Syllabus

P304

COSHH - Fundamentals of
Risk Assessment and Control

Introduction

About BOHS

BOHS is the Chartered Society for Worker Health Protection. Our vision is to create a healthy working environment for everyone by controlling risks to health in the workplace, including those arising from exposure to hazardous substances.

Founded in 1953, we have developed over the last 64 years into a highly respected and influential body on workplace health issues, working closely with organisations in the UK and overseas to promote our vision. We are a registered charity, professional society and a member of the International Occupational Hygiene Association which is recognised as a non-government organisation by the International Labour Organisation (ILO) and the World Health Organization (WHO).

We were awarded a Royal Charter in 2013 in recognition of our pre-eminent role in protecting worker health.

BOHS is a membership organisation, open to anyone who has an interest in workplace health issues, and we have over 1700 members in 60 countries.

BOHS Qualifications

We are the leading awarding body in our field. Our UK qualifications and courses are recognised and respected by independent agencies such as the Health and Safety Executive (HSE) and the United Kingdom Accreditation Service (UKAS), and further afield by industry and employers worldwide. Over 50,000 people have taken one of our qualifications through our network of training providers which offer engaging, challenging and practical courses.

Information about all our courses and qualifications is available from our website:

www.bohs.org/qualifications-training/bohs-qualifications/

About the P304 Qualification

BOHS aims to protect worker health through promoting the science and practice of occupational hygiene. By identifying and controlling health risks in the workplace, we can reduce the levels of occupational ill health.

Hazardous substances are used every day in the workplace. They include anything from office cleaning products to specialist chemicals used in manufacturing and can also be generated from processes such as welding and fuel combustion. Exposure to hazardous substances via inhalation, skin contact or ingestion can result in short- and long-term health effects for workers, which in some cases can be fatal.

The Control of Substances Hazardous to Health (COSHH) Regulations 2002 place a duty on employers to protect their workers from exposure to hazardous substances. It is the responsibility of the employer to either carry out or appoint a competent person to carry out a full workplace risk assessment, which identifies appropriate workplace controls and other measures designed to minimise risks. Furthermore, the employer is required to implement the control measures identified in the risk assessment before commencing work that is liable to expose employees to any relevant hazardous substances.

P304 - Assessments under the COSHH Regulations gives candidates the requisite knowledge to conduct risk assessments in line with the COSHH Regulations. The qualification teaches how to identify hazardous substances in a work environment, and how to control them effectively, to a standard which prevents or reduces risks of occupational ill health.

Teaching Aims

This course has been developed to provide candidates with the knowledge and understanding to assess the health risks caused by hazardous substances, in order to meet the requirements of the Control of Substances Hazardous to Health (COSHH) Regulations 2002 for a 'suitable and sufficient' risk assessment.

It has been designed to give candidates an understanding of how the COSHH risk assessment process can be used to prevent and control exposure to hazardous substances in the workplace.

The course normally runs over 3 days; however, it can be delivered more flexibly.

Prior Knowledge and Understanding

There are no prerequisites, however, before undertaking the qualification, it is recommended that candidates should have a basic awareness of the requirements of the COSHH Regulations.

This can be gained from relevant Health and Safety Executive (HSE) guidance documents and leaflets (see Section 7), or other sources such as the COSHH Essentials control advice sheets.

The course is designed for individuals who are responsible for managing health risks in the workplace. It is relevant to those working in roles such as:

- Occupational hygienists
- Health and safety practitioners
- Managers and other duty holders with responsibilities under COSHH (Control of Substances Hazardous to Health)

It is suitable for anyone involved in identifying, assessing, and controlling workplace health risks.

Learning Outcomes

The syllabus is structured into five sections. On completion of this course, the candidate will be able to demonstrate their knowledge in the following subject areas.

	Time Allocation
1 Introduction To Hazard And Risk	5%
2 Legislation And Guidance	15%

3	Fundamental Principles Of Risk Assessments	20%
4	Making A Risk Assessment	50%
5	Workplace Controls	10%

Note:

Reference is made in this syllabus to relevant HSE guidance and other documentation. This list may not include the most up-to-date relevant publications from HSE and other sources and is intended as guidance for candidates only.

P304 Syllabus

1 Introduction to Hazard and Risk (5%)

This section will provide suitable knowledge and training to ensure that the candidate has an appreciation of different types of hazards that are presented by hazardous substances, and understands the difference between hazard and risk, and identify the factors that influence risk.

In order to achieve this the candidate must be able to demonstrate their knowledge in the following:

- 1.1 Explain the Formal definition of hazard and risk.
- 1.2 Explain common examples of hazard and risk and illustrate their differences.

2 Legislation and Guidance (15%)

This section will provide suitable knowledge and training to ensure that the candidate understands the legal framework for risk assessments and is familiar with key provisions and guidance documents.

In order to achieve this the candidate must be able to demonstrate their knowledge in the following:

- 2.1 Health and Safety at Work etc. Act 1974 (HASAWA):
 - 2.1.1 The role of HASAWA as enabling legislation.
 - 2.1.2 Section 2 of HASAWA: inference for assessment and other key provisions.
- 2.2 COSHH Regulations 2002 (as amended):
 - 2.2.1 The aim of the Regulations (to prevent occupational ill health).
 - 2.2.2 Scope of the Regulations (including definitions of substances hazardous to health).
 - 2.2.3 Key provisions:
 - Assessment of risks to health
 - Prevention and control of risks.
 - Use of different controls.
 - Maintenance, examination and testing of controls.
 - Monitoring of exposure to hazardous substances
 - Health surveillance
 - Information, instruction and training
 - Arrangements for accidents, incidents and emergencies.
 - 2.2.4 COSHH 2002 (as amended) Approved Code of Practice (ACoP) and guidance (L5).

2.2.5 Schedule 2A Principles of good practice for the control of exposure to substances hazardous to health.

2.3 Guidance notes. An overview of:

2.3.1 HSE Guidance Note EH40 (latest edition).

2.3.2 HSE Guidance Note HSG97 (2004): A step by step guide to COSHH assessment.

2.3.3 HSE COSHH Essentials: www.hse.gov.uk/coshh/essentials

2.3.4 INDG136 (Rev. 5, 2012): Working with substances hazardous to health: A brief guide to COSHH, HSE

3 Fundamental Principles of Risk Assessments (20%)

This section will provide suitable knowledge and training to ensure candidates understand the effects caused by hazardous substances on the human body and gains an understanding of the different types of sampling techniques used to determine levels of exposure, along with the exposure limits that should be adhered to.

In order to achieve this the candidate must be able to demonstrate their knowledge in the following:

3.1 Toxicology

3.1.1 Routes of entry, target organs, dose effects, classification of toxic effects, signs and symptoms, dose response.

3.1.2 Toxicity testing and interpretation of toxicological data.

3.1.3 Terminology/trade names such as International Union of Pure and Applied Chemistry (IUPAC); Chemical Abstracts Service (CAS); European Inventory of Existing Commercial Chemical Substances (EINECS) and other trade names.

3.2 Monitoring techniques

3.2.1 Principles of air monitoring and biological monitoring, in accordance with HSG167 (1997), MDHS method series and other accepted methods (NIOSH, OSHA, etc.)

3.2.2 Other sampling techniques and their application (e.g. use of direct-reading instruments, grab sampling, swab sampling for surface contamination).

3.3 Criteria and standards

3.3.1 Inhalation exposure and Workplace Exposure Limits (WELs).

3.3.2 Other exposure limits such as: Indicative Occupational Exposure Limit Values (IOELVs); ACGIH Threshold Limit Values (TLVs); MAKs (German exposure limits); OSHA Permissible Exposure Limits (PELs).

3.3.3 Application of standards: personal exposure, time weighting, definitions, terminology, units, 'Sk' and 'Sen' notations.

- 3.3.4 Special arrangements for mixed exposures: the reciprocal calculation procedure, carcinogens, asthmagens, action for non-published standards.
 - 3.3.5 Derivation of limits: criteria document summaries and individual susceptibility.
 - 3.3.6 Biological Monitoring Guidance Values, other indices and their application.
 - 3.3.7 Meaning of 'as low as is reasonably practicable', usually abbreviated to ALARP.
- 3.4 Interpretation of results
- 3.4.1 Analysis of results:
 - Accuracy and precision of results, including degree of variation in exposure between workers.
 - Validity of data.
 - Planning and monitoring to ensure proper comparison with WELs (or other exposure limits).

4 **Making a Risk Assessment (50%)**

This section will provide suitable knowledge and training to ensure candidates can gather and evaluate critical information from a wide range of sources and use this information to make a rational assessment of risk.

In order to achieve this the candidate must be able to demonstrate their knowledge in the following:

- 4.1 Scope of an assessment under COSHH
 - 4.1.1 The meaning of a 'suitable and sufficient' assessment. HSE's five steps for risk assessment:
 1. Identify the hazards. Gather information about the substances, the work and the working practices.
 2. Evaluate the risks to health. Decide who might be harmed and how and assess the likelihood and severity of harm. Consider employees, contractors, visitors, members of the public, and vulnerable workers, and determine how they could be affected.
 3. Decide on the control options that are needed to comply with COSHH Regulations 7-13, including the use of COSHH Essentials and the application of the principles of good practice in Schedule 2A. Determine what controls are needed to eliminate or reduce the risk.
 4. Record your findings and implement them. Document the significant hazards, risks, and control measures, and ensure the required actions are put in place.

5. Review your assessment and update it if there are any significant changes in the hazardous substances, or in the quantities in use, or in the control measures, or in the levels of exposure, or in the toxicological information that is available about any of the substances. Regularly review the assessment even where no significant changes occurred at an interval of between 2 years and 5 years depending upon the level of risk.

And also consider other methods of assessment.

And ensure that exposure to any process-generated releases, such as welding fumes or grinding dusts or combustion gases, are included in the scope of the COSHH assessments.

4.2 Gathering Information

- 4.2.1 Identification of relevant hazardous substances, including intermediates and by-products.
 - General sources of information – texts, journals, computer databases, HSE, trade literature etc.
 - Specific sources of information – safety data sheets, requirement for suppliers to provide information.
 - Interpretation of safety data sheets.
 - The GB CLP Regulation, or the EU CLP Regulation in Northern Ireland– Globally Harmonised System for warning symbols, hazard and precautionary statements.
- 4.2.2 Identification of critical aspects of processes, task and local conditions (e.g. confined spaces) and source of hazard.
 - Nature and circumstance of contaminant release, fugitive emissions, variability of production and equipment.
 - Ventilation, storage, transport, transfer, use, disposal and maintenance.
 - Arrangements covering accidents, incidents and emergencies.
- 4.2.3 Human variability and exposure effects. Work methods, techniques and abnormalities. Existing provision of information, instruction and training.
- 4.2.4 Identifying persons exposed, circumstances of exposure (when, where and who) and variability of exposure. This includes process workers, maintenance workers, peripatetic workers, visitors and others.
- 4.2.5 Review existing exposure data. Identify whether there is a need for regular air monitoring to quantify exposure.
 - Specify sampling criteria (if required), sampling protocol, who should be monitored, when and where to carry out monitoring, and under what circumstances.

- Consider need for health surveillance, biological monitoring, biological effect monitoring, and other monitoring types.
- Consider appropriate standards and the limitations of monitoring alone for assessing exposure.

4.2.6 Assessment of new processes/work not yet in operation.

- Gathering of information on anticipated procedures, including commissioning, simulated breakdowns and emergencies.
- Information from raw material and equipment suppliers.
- Experience of similar processes - employers, employees and trade associations.

4.3 Risk Evaluation

4.3.1 Review of hazard data (data collected in 4.2.1 for example)

4.3.2 Review of exposure data:

- Consideration of data collected in 4.2.2 to 4.2.5.
- Interpretation of monitoring results: reliability of method, reliability of results, their representation, assessing variability etc.
- Application of results to circumstances not monitored: consequences of control failure, maintenance or cleaning operations.
- Use of example case studies.

4.3.4 Application of hygiene standards:

- Basis and reliability of standards.
- Evaluation of risk.
- Evaluation of adequacy of control under COSHH.

5 Workplace Controls (10%)

This section will provide suitable knowledge and training to ensure candidates can understand the principles of the control of risk.

This includes the full range of control options, how they are applied, and the importance of effective management systems to ensure that control of hazardous substances is maintained at work.

It also includes the practical application of Schedule 2A Principles of Good Practice for the control of exposure to substances hazardous to health.

In order to achieve this the candidate must be able to demonstrate their knowledge in the following:

5.1 Hierarchy of Control

Outline of the main controls in order of effectiveness: elimination, substitution (substance used and form of substance), design and process modification (use of enclosures, isolation, ventilation, supervision, modification of work method etc.), administrative controls such as work systems (include permits and job rotation), personal hygiene, education and training, and PPE.

Outline importance of good practice in control of substances hazardous to health (see Principles of Good Practice, Schedule 2A, COSHH).

5.2 Assessing effectiveness of control

Qualitative and quantitative assessment techniques: visual observation, use of the dust lamp, flow visualisation (e.g. smoke tubes), air monitoring, ventilation measurements, biological monitoring data etc.

5.3 Maintaining effectiveness of control

Obligations under COSHH for establishing procedures for:

- Maintenance, examination and testing of local exhaust ventilation systems.
- Reliability checks for RPE, including respirator inspections checks on storage facilities and breathing air quality
- Face-fit testing for RPE
- Record keeping.

6 **References and Further Reading**

- 1) EH40/2005, 2nd Edition (2011), Workplace exposure limits, HSE Books
- 2) Health and Safety at Work etc. Act 1974
- 3) HSE COSHH Essentials: www.hse.gov.uk/coshh/essentials
- 4) HSG167 (1997), Biological monitoring in the workplace: A guide to its practical application to chemical exposure, HSE Books
- 5) HSG97 (2004), A Step by Step guide to COSHH assessments, HSE Books
- 6) INDG136, Rev. 5 (2012), Working with substances hazardous to health: A brief guide to COSHH, HSE www.hse.gov.uk/pubns/indg136.htm
- 7) L5 (2013), The Control of Substances Hazardous to Health Regulations 2002: Approved Code of Practice and guidance, HSE Books

8) The GB CLP Regulation - HSE

HSE guidance is reviewed and revised periodically. Training providers should check that the publications listed above are the current versions.

All the Health and Safety Executive (HSE) publications listed above are available as free downloads from the HSE website: www.hse.gov.uk/COSHH.

The COSHH Essentials is also a useful online tool for assessing risk:
www.hse.gov.uk/coshh/essentials

7 **Course Delivery and Teaching Hours**

Teaching and Learning:

This course will require at least **24** hours of study time, of which at least **18** hours will be taught (teaching and practical assessments), and **6** hours will be independent (in the candidates' own time).

The course can be delivered more flexibly, such as one day per week for three weeks, but should still include at least 24 hours of study time.

Tutors:

The course should be taught by tutors who are experienced in the COSHH assessment process, and/or are qualified occupational hygienists. As a guide, tutors will typically have:

- At least three years' current experience in an occupational hygiene role, or COSHH risk assessment role;

A recognised professional occupational hygiene qualification such as:

- BOHS Certificate of Operational Competence (CertOH).
- BOHS Diploma of Professional Competence (DipOH).

This list is not exhaustive or definitive.

Teaching Resources:

Training providers must provide case studies for the formative practical assessment and relevant reference material.

Access Arrangements and Reasonable Adjustments:

BOHS is committed to ensuring that all candidates have fair and equal access to its qualifications. Candidates who have a disability, medical condition, learning difficulty, temporary injury, or any other circumstance that may place them at a substantial disadvantage during training or assessment may be eligible for Access Arrangements or Reasonable Adjustments.

Access Arrangements and Reasonable Adjustments are intended to remove or reduce barriers to assessment while ensuring that the validity, integrity and standard of the qualification are maintained. Examples may include additional examination time, rest

breaks, the provision of a reader or scribe, modified assessment materials, or other appropriate support measures, depending on the candidate's individual needs.

Candidates who believe they may require an Access Arrangement or Reasonable Adjustment should notify their course provider as early as possible, preferably at the time of booking or well in advance of the course and assessment dates. This allows sufficient time for the training provider and BOHS, where necessary, to review the request and make appropriate arrangements.

Requests must normally be supported by relevant evidence of need, such as medical documentation, an educational psychologist's report, or other appropriate evidence such as a letter from an employer. The training partner is responsible for gathering the necessary information.

If additional examination time is required as part of an approved access arrangement or reasonable adjustment, the training provider must notify BOHS as early as possible.

This will ensure that the request can be reviewed and the additional time can be applied to the examination in advance of the assessment date. Early notification helps ensure that suitable arrangements are in place and that candidates receive the support they require without compromising the integrity of the assessment process.

Candidates should not assume that adjustments can be implemented on the day of the assessment without prior approval. Late requests may not be accommodated if there is insufficient time to review the application or make suitable arrangements.

BOHS and its approved training providers will consider all requests on an individual basis and will make every reasonable effort to provide appropriate support, ensuring that candidates are not disadvantaged while preserving the competence standards and assessment requirements of the qualification.

8 **Examinations and Assessment**

Candidates are required to pass two mandatory components to be awarded the qualification:

Formative Practical Assessment:

Candidates undertaking the P304 qualification must be able to demonstrate that they have obtained the required knowledge for making suitable risk assessments.

The Formative Practical Assessment is designed to confirm these skills have been achieved, and candidates are able to carry out appropriate practical tasks in the workplace.

The Formative Practical Assessment is mandatory and forms part of the overall P304 qualification. All candidates must undertake the Formative Practical Assessment during the course and record their observations and appropriate calculations for marking by the course tutor.

The Assessment Tasks:

Two case studies should be designed by the course tutor(s) to test the skill and knowledge of each candidate. The tutor is responsible for designing suitable case studies, it is not practicable for BOHS to provide a pre-defined marking schedule.

The tutor may need to provide BOHS with details of the studies used and their marking, along with the individual candidate's reports, for quality assurance purposes.

One case study should involve evaluation of available data (e.g. from a material safety data sheet) to produce a COSHH risk assessment for an individual substance, with advice on a suitable exposure control scheme to be applied for using that substance in a process.

The second case study should be scenario-based, to evaluate potential routes of exposure and associated health consequences from a selected process. This may be presented as a series of photographs for the candidate to evaluate and report their findings. The candidate should prepare a COSHH risk assessment for the process.

Access to reference material and written procedures is allowed during the assessment.

Reporting and Marking:

The COSHH risk assessment case studies should be recorded, together with any observations, to the standards expected for a laboratory notebook. The results from these studies should be handed in for marking at the end of the assessment.

Case Studies:

Each case study should contain the following elements as appropriate:

- Name of person carrying out the exercise.
- Location and date.
- A brief description of the process.
- The work environment.
- Interpretation and recommendations from findings.

Candidate reports must be handed in on completion of the assessment session, and retrospective amendments will not be allowed.

The tutor will assess each report and complete a Formative Practical Assessment Report Form for each candidate (see Appendix 1).
A copy of the Report Form should be given to the candidate.

Results:

The tutor is required to submit a completed Formative Practical Assessment Report Form for each candidate to BOHS within five days of the course completion date. The Formative Practical Assessment is a mandatory component of the overall qualification. Failure to submit these forms to BOHS will leave the candidate's P304 qualification incomplete, and BOHS will be unable to award the qualification, even if the candidate has successfully passed the written examination.

Re-Sits:

The formative practical assessment is not time-constrained, and it is expected that candidates who meet the entry requirements for the qualification will pass the assessment during the course. However, candidates are permitted to re-sit the assessment at a later date if required.

Written Examination:

The written examination usually takes place at the end of the course. The examination is designed to test candidate knowledge of hazardous substances in the workplace, their ill health effects, and how to carry out suitable risk assessments in line with the COSHH Regulations to reduce exposure to these substances. It also tests whether the candidate can apply their learning of risk assessments to real-life situations.

The examination comprises 30 short-answer questions, to be answered in 90 minutes and the pass mark is 50%.

Short-answer questions require candidates to give brief answers, sometimes as bullet points/lists or calculations. All questions are worth 4 marks and candidates may be awarded between 0 and 4 marks per question. Candidates should attempt all questions as no marks are deducted for incorrect answers.

The examination covers sections 1 to 5 of the content of the qualification in proportion to the time allocation given for each section as outlined earlier in the syllabus. All sections are clearly marked in the examination paper.

The P304 written examination is an open-book assessment, allowing candidates to refer to approved course materials and supporting documentation during the examination. This format is designed to assess a candidate's ability to locate, interpret and apply relevant information in a practical and professional manner, rather than relying solely on memory.

Permitted Examination Material:

Candidates may use standard, non-programmable electronic calculators where calculations are required. However, programmable calculators, tablets, mobile phones, smart devices, or any equipment capable of storing, communicating, or processing information beyond basic calculation functions are not permitted unless specifically authorised by BOHS.

To ensure the integrity, fairness and validity of the qualification, the use of unauthorised resources is strictly prohibited. This includes, but is not limited to, artificial intelligence (AI) tools, chatbots, generative AI applications, internet search engines, online forums, web-based applications, electronic communication platforms, or any other external source of assistance is not permitted by BOHS.

Candidates found to be using unauthorised materials or receiving external assistance during the examination may be subject to BOHS malpractice procedures. This could result in the examination being declared void, the withholding of results, or further sanctions in accordance with BOHS policies and procedures.

Marking and Results:

All examination papers are marked by independent BOHS-appointed markers who are engaged through established quality assurance procedures. Markers assess candidate responses against approved marking criteria to ensure that examinations are evaluated fairly, consistently and impartially. The marking process is independent of the training provider, helping to maintain the integrity and credibility of BOHS qualifications.

Candidates who are unsuccessful in an examination and wish to gain a better understanding of their performance may apply for feedback through the Enquiry About a Result process. This service is intended to support candidates in identifying areas for

improvement and to assist them in preparing for a future examination attempt. Details of the process, including applicable timescales and fees, are available from BOHS upon request.

Examination results are issued directly to candidates by BOHS via email. Results are reported as either Pass or Fail, together with the percentage mark achieved. This approach provides candidates with an indication of their overall performance while maintaining the security and confidentiality of assessment materials and marking processes.

Training providers are also given access to a summary of examination outcomes for candidates attending their courses. This enables providers to monitor candidate achievement, evaluate the effectiveness of their training programmes, and provide appropriate support and guidance to candidates where required. However, access is limited to examination results and does not include examination papers, candidate scripts, or details of individual markers.

Re-Sits:

Candidates may re-sit the examination but must pass within 12 months of the original sitting.

Certification:

Candidates who pass both the Formative Practical Assessment and the Written Examination will be awarded a Proficiency Certificate in:

P304 - COSHH - Fundamentals of Risk Assessment and Control

The award will be confirmed via email, and a hard copy certificate will be provided directly to the candidate via the postal service.

9 Quality Assurance

Training providers must operate an internal quality assurance system which evaluates and improves the delivery of the qualification.

The system should include an internal verification process which ensures that the formative practical assessments are conducted in line with requirements and that fair and consistent decisions are made about the attainment of candidates.

BOHS also undertakes desk-based reviews of documents, including teaching materials and formative practical assessment records, and conducts surveys of candidates.



The Chartered
Society for Worker
Health Protection

Appendix 1:

Formative Practical Assessment Report

P304 - Assessments under the COSHH Regulations

Candidate Name:			
Date of birth:		Evaluation Date:	
Assessment Location:			
Training Partner:			

Topics	Marks (%)	Comments
Case study 1: Risk assessment		
Case study 2: Process risk assessment		
Overall marks (%)		<u>Overall decision:</u> Pass / Fail (please circle)
Name of tutor covering formative practical assessment:		
Signature of tutor covering formative practical assessment:		

BOHS is a Chartered, science-based, charitable body that provides information, expertise and guidance in the recognition, evaluation, control and management of workplace health risks.

BOHS was founded in 1953: it is a learned society, publishing the world-renowned, scientific, peer-reviewed journal, *Annals of Work Exposures and Health*, and the only professional society representing qualified occupational hygienists in the UK. The Society supports, develops and connects its members with resources, guidance, events and training.

Its Faculty of Occupational Hygiene sets professional standards and is the only UK examining board for qualifications in occupational hygiene that are recognised internationally.

BOHS is the only occupational hygiene organisation to be awarded a Royal Charter: this was granted in April 2013 in recognition of BOHS' unique and pre-eminent role as the leading authority in occupational disease prevention.

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