

The logo for BOHS (British Occupational Hygiene Society) features the letters 'BOHS' in a bold, white, sans-serif font. The letter 'O' is stylized with a white circle inside it, set against a blue background.

British Occupational
Hygiene Society

The Chartered
Society for Worker
Health Protection

P304 Proficiency Qualification

COSHH - Fundamentals of Risk Assessment and Control

Qualification Specification

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Section 1

About BOHS

BOHS - The Chartered Society for Worker Health Protection

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 – The Quality Choice

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.

Our qualifications are overseen by a team of highly experienced professionals who are dedicated to developing the competence and career opportunities for the many thousands of people who play a key role in protecting worker health, in diverse fields such as asbestos, legionella and control technologies.

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

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

Section 2

P304 at a glance

What is the objective?

To give practical guidance on assessing 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.

Who is it for?

Anyone who is responsible for managing health risks in a place of work. This includes:

- Occupational hygienists.
- Health and safety practitioners.
- Managers and other duty-holders under COSHH.

What are the entry requirements?

There are no pre-requisites for this course.

What are the main subject areas?

- Introduction to hazard and risk.
- Legislation and guidance.
- Fundamental principles of risk assessments.
- Making a risk assessment.
- Workplace controls.

How long does it take?

Normally 3 days.

What level is it?

Level 4 in the BOHS qualifications framework.

How do candidates pass it?

Candidates must pass two assessments:

- Formative practical assessment.
- Written examination.

Section 3

Background to the 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 them 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.

Section 4

Key features of the qualification

Objective

This qualification is 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.

Target audience

This qualification is suitable for anyone responsible for worker health. This includes:

- Occupational hygienists.
- Health and safety practitioners.
- Managers and other duty-holders under COSHH.

Entry requirements

Before taking the qualification, 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 E-tool.

Candidates also need basic literacy and numeracy skills.

Age range

There is no age restriction on candidates taking the qualification.

Level

The level of a qualification indicates the relative complexity and depth of knowledge and skills required to attain the qualification.

This qualification is set at level 4 in the BOHS qualifications framework.

Fees

The examination fee for each candidate is published on the BOHS website:
www.bohs.org/qualifications-training/examination-fees/

Section 5

Delivering the qualification

Teaching and learning time

P304 normally runs over three consecutive days, and requires approximately 24 hours of study time. This is split down into:

- 18 hours of teaching time (including formative practical assessment).
- 6 hours of independent study (including pre-reading and evening study).

The course can be delivered more flexibly, such as one day per week for three weeks, but should still include 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 necessarily exhaustive or definitive.

Teaching resources

Training providers must provide case studies for the formative practical assessment.

Support for teaching and learning

BOHS provides sample examination questions for the written examination.

Language

The examination is provided in English only.

Section 6

Syllabus

The qualification is structured into five sections, each with an indicative time allocation:

Section		Time allocation
1	Introduction to hazard and risk	5%
2	Legal aspects	15%
3	Fundamental principles of risk assessments	20%
4	Making a risk assessment	50%
5	Workplace controls	10%

1 Introduction to hazard and risk (5%)

Educational objectives

Candidates should appreciate the different types of hazards that are presented by hazardous substances, understand the difference between hazard and risk, and identify the factors that influence risk.

- 1.0.1 Formal definition of hazard and risk.
- 1.0.2 Common examples of hazard and risk, illustrating their differences.

2 Legal aspects (15%)

Educational objectives

Candidates should understand the legal framework for risk assessments, and be familiar with key provisions and guidance documents.

- 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).

2.3 *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%)

Educational objectives

Candidates should understand the effects caused by hazardous substances on the human body. They should also understand the different types of sampling techniques used to determine levels of exposure, along with the exposure limits that should be adhered to.

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.

3.4 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%)

Educational objectives

Candidates should be able to gather and evaluate critical information from a wide range of sources, and use this information to make a rational assessment of risk.

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. Gathering information about the substances, the work and working practices.
2. Evaluating the risks to health.
3. Deciding on control options to comply with Regulations 7-13 (including the use of COSHH Essentials).
4. Recording assessments.
5. Reviewing the assessment, including frequency of review. Also consider other methods of assessment.

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 Classification Labelling and Packaging (CLP) Regulations 2015 – 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 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 (i.e. data collected in 4.2.1).
- 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.
- 4.3.3 Application of hygiene standards:
- Basis and reliability of standards.
 - Evaluation of risk.
 - Evaluation of adequacy of control under COSHH.

5 Workplace controls (10%)

Educational objectives:

Candidates must 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.

5.0.1 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.), work

systems (include permits), 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).

5.0.2 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 etc.

5.0.3 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.

Section 7

References and further reading

1	EH40/2005, 2 nd 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 Classification, Labelling and Packaging (CLP) Regulations 2015, http://www.hse.gov.uk/chemical-classification/legal/clp-regulation.htm

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

Useful websites

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.

Section 8

Achieving the qualification

Candidates are required to pass two mandatory components to be awarded the qualification: a formative practical assessment and a written examination.

Formative Practical Assessment

Candidates taking P304 need to demonstrate that they have obtained the requisite knowledge for making suitable risk assessments. The formative practical assessment is designed to confirm they have achieved these skills, and are able to carry out appropriate practical tasks in the workplace.

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 of the candidates. As the tutor is responsible for designing suitable case studies, it is not practicable 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 control 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 note book. The results from these studies should be handed in for marking at the end of the assessment.

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.

Candidates' 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 must return the Formative Practical Assessment Report Form for each candidate to BOHS within five days of the course completion date.

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 tests the candidate's 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. Short-answer questions require candidates to give brief answers, sometimes as bullet points 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 pass mark is 50%.

The examination covers sections 1 to 5 of the content of the qualification in proportion to the time allocation given for each section. This gives a question allocation as follows:

Section		Number of questions
1	Introduction to hazard and risk	1
2	Legal aspects	5
3	Fundamental principles of risk assessments	6
4	Making a risk assessment	15
5	Workplace controls	3

The sections are clearly marked in the examination paper.

The P304 written examination is an open-book examination. Electronic calculators are permitted, but programmable calculators/personal computers are not.

Marking and results

All examination papers are marked by BOHS.

Borderline fail results are automatically re-marked by a second marker.

Candidates receive their results in writing from BOHS. The results are reported as pass or fail plus a percentage.

Training providers are sent a list of results for all candidates on a course.

Feedback

Candidates receive feedback on their examination performance for both examinations. For example, the feedback for a candidate that scored 70% would be shown as follows:

Syllabus area		Result (marks and percentage)	
1	Introduction to hazard and risk	4/4	(100%)
2	Legal aspects	8/20	(40%)
3	Fundamental principles of risk assessments	20/24	(83%)
4	Making a risk assessment	40/60	(66%)
5	Workplace controls	12/12	100%
Total		84/120	(70%)

Training providers receive feedback on the performance of all candidates.

Written Exam Performance against syllabus		Number of candidates in each scoring band		
		0- 49%	50- 75%	76- 100%
188 Written Theory	Introduction to hazard and risk	1	6	1
188 Written Theory	Legal aspects	2	5	1
188 Written Theory	Fundamental principles of risk assessments	2	6	0
188 Written Theory	Making a risk assessment	1	5	2
188 Written Theory	Workplace controls	1	5	2

Resits

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

Certification

Candidates who pass the qualification will be awarded a Proficiency Certificate in *P304 - COSHH - Fundamentals of Risk Assessment and Control*.

Section 9

Quality assurance

Internal 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.

External quality assurance

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

Section 10

Offering the qualification

Approved Training Providers

Please complete and return the 'Application to Offer Additional Qualifications' form to qualifications@bohs.org. The form is available on the BOHS website.

New Training Providers

Please send an email to qualifications@bohs.org expressing your interest in offering the qualification and we will advise you about the approvals process.

Section 11

Other courses and qualifications

Candidates who successfully complete this qualification may wish to take:

P603 - Control of Hazardous Substances - Personal Protective Equipment

Objective

To teach candidates about the different options available for controlling health hazards in the workplace, and how to develop, organise and implement a successful personal protective equipment programme to reduce worker exposure to these hazards.

Target audience

Anyone who is responsible for managing health risks in the workplace or maintaining local exhaust ventilation systems. This could include LEV engineers, health and safety practitioners and occupational hygienists.

For a full list of BOHS' courses and qualifications, please visit
<http://www.bohs.org/qualifications-training/bohs-qualifications/>

Appendix 1:
Formative Practical Assessment Report

Faculty of
Occupational
Hygiene

Proficiency Module
P304 - Assessments under the COSHH Regulations



Name of candidate			
Date of birth		Date of evaluation	
Location of assessment			
Training provider			

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:		

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Information in this Qualification Specification is correct at the time of issue but may be subject to change.

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