

RHS
INSPECTION PACK
ASTHMAGENS

Revised February 2007

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1 Target Audience

This pack should be read by inspectors, Health and Safety Awareness Officers (HSAOs) and enforcement officers to assist them in inspecting or giving advice to dutyholders. It should be read in conjunction with the revised COSHH OC 273/20 and the Disease Reduction Programme Sector Information Minutes (SIMs).

2 Introduction

2.1 Nature of the problem

Occupational asthma (OA) is a Commission priority. ACTS (Advisory Committee on Toxic Substances) and HSC have endorsed a strategy aimed at reducing the incidence of OA in line with FIT3 (Fit for Life, Fit for work, Fit for tomorrow) Programme and the associated Disease Reduction Programme's Respiratory Project (DRP) target of a reduction in OA of 10% by April 2008. A tripartite Asthma Project Board has been established to adopt a strategic overview and to endorse an Action Plan. Details on this and other issues of interest can be found on the Asthma web site at www.hse.gov.uk/asthma/index.htm. OA is to be treated as a 'targeted matter of evident concern' during inspections where appropriate. It is estimated that around 3000 people a year develop OA, which can leave them severely disabled, or it can prove fatal. It is well established that exposure, to a number of agents (asthmagens), can lead to OA or make it worse. The main agents are listed in paragraph 4.1.

The DRP Respiratory Project concentrates on the following key substances/processes with the aim of achieving compliance with the key issues listed in the relevant SIMs:

1. Isocyanates in motor vehicle repair (MVR)
2. Flour dust in bakeries
3. Wood dust
4. Solder and colophony fume
5. Metal-working fluid

3 What are the Health Effects of Asthmagens?

3.1 Asthma is a serious health problem

Thousands of people in Britain have to face the challenges of this disease every day. Symptoms include severe shortness of breath that can stop you from doing the simplest tasks. Some sufferers are unable to work again. Other symptoms include: wheezing, coughing and chest tightness. The symptoms can develop right after exposure to a workplace substance. But sometimes symptoms appear several hours later, possibly at night. This can make any link with workplace activities unclear. Other associated conditions are: rhinitis (sneezing/runny nose) and conjunctivitis (itchy and inflamed red eyes).

3.2 Occupational asthma

Occupational asthma is an allergic reaction that can occur in some people when they are exposed to certain substances, for example flour or wood dust in the workplace. These substances are called 'respiratory sensitisers' or asthmagens. They can cause a change in people's airways, known as the 'hypersensitive state'. Not everyone who becomes sensitised goes on to get asthma. But once the lungs become hypersensitive, further exposure to the substance, even at quite low levels, may

trigger an attack. The main causes of occupational asthma are set out in Section C of HSE's Asthmagen Compendium. This list of substances is a useful summary (<http://www.hse.gov.uk/asthma/substances.htm>). Also look for the risk phrase R42 'May cause sensitisation by inhalation' on product labels or safety data sheets.

3.3 Work-related asthma

Work-related asthma or asthma made worse by work is broader and includes substances in the workplace that irritate the airways of individuals with pre-existing asthma. This includes people who have had asthma since childhood. Respiratory irritants may trigger attacks in those with occupational asthma or pre-existing asthma. Examples include chlorine, general dust and even cold air.

4 Which Asthmagens are Most Common and Where Will You Find Them?

4.1 The following list shows the asthmagens most likely to be encountered (not exhaustive):

- isocyanates (in particular MVR, footwear/textiles, printing, plastics, especially cellular plastics, rubber);
- flour dust;
- grain dust;
- glutaraldehyde (in particular Health Services, Agriculture);
- hard wood dust;
- soft wood dust;
- latex (in particular Health Services, also rubber industry);
- laboratory animals;
- glues (includes specialist adhesives);
- resins (epoxy systems in specialist printing inks);
- solder/colophony fume (mainly engineering, also colophony fume from adhesives used for binding in printing);
- stainless steel welding fume;
- hard metal dust/fume (eg cobalt);
- food processing (crustaceans);
- reactive dyes;
- azodicarbonamide (plastics and rubber);
- Metal-working fluids

5 What Action Should You Take?

5.1 When to focus on asthmagens

HSE's aim is to ensure that dutyholders reduce exposure to asthmagens by achieving adequate control. COSHH reg 7(7) states that control can only be deemed to be adequate when:

- a. The principles of good practice have been met; **and**
- b. Any WEL is not exceeded; **and**
- c. Exposure is reduced to the lowest level reasonable practicable.

Therefore the duty holder will need to have management systems in place that identify asthmagens, assess the risk, and if exposure can not be prevented then, adequately controlled. COSHH reg 9 requires that engineering controls are

maintained and, in addition, systems of work and supervision are reviewed at suitable intervals and revised if necessary. The dutyholder should provide suitable and sufficient information, instruction and training. When employees are exposed to asthmagens then they should be under suitable health surveillance. Inspectors should determine if the dutyholder is complying with COSHH when people are exposed to asthmagens, using the information in this inspection pack.

NB: All cases of ill health and complaints related to OA should be investigated.

6 Work Recording

6.1 For the purposes of the Disease Reduction Programme targets we need to be able to say which asthmagens have been targeted and to what extent. Therefore, it is vital that inspectors identify clearly in the text box on IRF 1 which asthmagen(s) they are reporting on. This is necessary for the retrieval of relevant information.

7 Risk Control Indicators

Three indicators, “a”, “b” and “c”, have been selected against which performance will be measured. **A score of 1 should only be allocated when all the elements are in place and should represent a situation where the inspector believes that no further improvement is possible. A score of 4 would indicate that enforcement action is appropriate. For scores of 3 and 2 enforcement action may be appropriate.**

| Assessment scale for scoring Risk Control Indicators (RCI) | | | |
|------------------------------------------------------------|---------------------------------------|--------------------------------------|-----------------------------------------------|
| 1 | 2 | 3 | 4 |
| Full compliance in areas that matter | Broad compliance in areas that matter | Some compliance in areas that matter | Limited or no compliance in areas that matter |

7.1 RCI (a): Asthmagen Management System

There is evidence of effective organisation and arrangements including adequate COSHH assessments, provision of information, instruction, training and supervision. There is evidence of management commitment and arrangements for review.

7.2 RCI (b): Control Strategy

- There is evidence that substitution has been considered and effected where possible.
- Adequate engineering controls are provided, used, checked and maintained, at suitable intervals.
- That the 8 Principles of Good Practice (PGPs) can be shown to have been applied to achieve effective control (see Schedule 2A, COSHH Regs).

Suitable PPE is selected, provided, worn and stored correctly, suitably cleaned and well maintained.

Appropriate instruction and training in proper use of engineering controls and PPE provided

- Methods of working which minimise exposure are defined and followed

Substitution should be the first consideration by all duty holders where employees are exposed to asthmagens. Where substitution is not possible control should be effected by process changes and engineering means, so far as is reasonably practicable. PPE can be included as an element in a set of control measures where

other, more reliable and effective elements cannot guarantee exposure control will be effective enough.

Meaning of adequate control to asthmagens, Regulation 7 (7):

For asthmagens assigned the risk phrase R42, R42/43 or on HSE's asthagen list (<http://www.hse.gov.uk/asthma/substances.htm>), adequate control requires exposure to be reduced to as low a level as is reasonable practicable and always below the Workplace Exposure Limit (WEL). WELs should not be used or referred to in isolation, the employers first duty under Regulation 7 (7) is to apply the 8 PGPs listed in Schedule 2A. More detail on the 8 PGPs can be found in revised COSHH OC 273/20.

7.3 RCI (c): Checking and maintaining control measures

The "hardware" and "software" of control measures should be regularly checked by the employer and records kept. The hardware should be thoroughly examined and tested at least every 14 months. This should be carried out by competent people. The employer should be able to show that exposure control measures are effective by reference to standards and/or exposure measurement. Where there may be residual risk of occupational asthma appropriate and competent occupational health surveillance should be undertaken, records kept and action taken where indicated. The dutyholder should be able to demonstrate that control measures are being kept in an efficient state and in efficient working order and are reviewed on a regular basis.

8 Inspection Aide Memoire

Table 1 provides an aide memoire for asthagen inspection to assist in gathering the information necessary to assess performance against the above risk control indicators.

Table 1 – Inspection aide memoire

| Action | What to look for | Principle of good practice | COSHH Regulations |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Specific person in charge | Senior Management Understanding of the health risks Understanding of the system in place | a and f To be able to operate a process that minimizes the spread of substances hazardous to health and to ensure that it is checked and reviewed regularly someone needs to know the overall picture. | HSWA S2 |
| Suitable and sufficient risk assessment made by a competent person | That the assessment includes but is not limited to The hazardous properties of the substance Information from the MSDS Details of exposure The work circumstances High risk activities such as maintenance Any relevant WELs The effect of control measures Health surveillance results | b, c, d, and g For a risk assessment to be suitable and sufficient it should point toward the control measures that are in proportion to the risk and are effective and reliable. Also it should inform the employees about the hazards risks and control measures. | Reg 6(1) Reg 6(2) |

| | | | |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Assessment is recorded and reviewed regularly | Management systems are in place to prompt reviews and to audit records/procedures | a, and f To be part of a process, a record needs to be accessible for others and needs to be reviewed. | Reg 6(3) Reg 6(4) |
| Employees have suitable and sufficient information, instruction and training | Includes but is not limited to The name of any substance The risk presented and any WEL Access to MSDS and other legislative provisions The significant finding of the risk assessments The precautions and actions necessary to safeguard everyone. Training on the control measures, including PPE. Results on health surveillance and exposure monitoring. | g | Reg 12(1) Reg 12(2) |
| Use of chemical is necessary | All alternatives have been considered Substitution Changes to method of work Modification to the process | a, and c All health risked must be minimized. | Reg 7(1) Reg 7(2) |
| The hierarchy of control is followed | PPE is only used when adequate control cannot be achieved by other means: Safe handling for storage and transport Suitable maintenance procedures Exposing the minimum number of people Appropriate hygiene measures | 4 | Reg 7(3) Reg 7(4) Reg 9 |
| Instructions available known and used for all circumstances | Procedures for Normal Process Cleaning Storage Maintenance Breakdown | a, and f | Reg 12(1) Reg 9(1) Reg 9(2) |
| Control Measures are used correctly and in good repair 7 reviewed | All measures hard and soft, including PPE Records of checks Personnel observation System for fault reporting and quarantining | e, f, and g | Reg 8 Reg 9(1) Reg 9(2) Reg 9(4) |
| Health surveillance provided and records kept | Includes but is not limited to Accountability Repeated as necessary Carried out by competent person Individual Records Historical record of exposure | a,b and f | Reg 11(1) Reg 11(3) |

9 Technical Support

Specialist Inspectors can provide the following support:

9.1 Occupational Hygiene inspectors:

- Assessment of work practices to determine health risks, appraise adequacy of control measures (including ventilation systems and PPE) and recommend reasonably practicable controls;
- Monitoring of personal exposures for comparison to any occupational exposure limits.

9.2 Medical and Occupational Health Inspectors:

- Advice on likely health effects;
- Advice on requirements for health surveillance.

Appendix 1 - Notice Templates

NB. The following notices are examples to cover some of the circumstances inspectors are likely to encounter. The notices should be completed by the addition of the appropriate asthmagen and be tailored to the circumstances found on site. Further notices are available on the COSHH 2002 Training Material CD.

1 PROHIBITION NOTICE TEMPLATE

a) COSHH Regulations 7(1) - inadequate control

2 IMPROVEMENT NOTICE TEMPLATES

a) COSHH Regulation 6, Assessment

b) COSHH Regulation 7(3) - Control by means other than RPE

c) COSHH Regulation 7(7) - Adequate control – failure to apply the 8 PGP's

d) COSHH Regulation 9 - Testing of LEV,

e) COSHH Regulation 9(1)(b) - Maintenance and review of all controls

f) COSHH Regulation 11 - Health Surveillance

g) COSHH Regulation 12 - Information instruction and training

1 PROHIBITION NOTICE TEMPLATE

a) COSHH Regulation 7(1) - for insufficient control and/or uncontrolled exposure to isocyanates based paint during spraying operations:

The Health and Safety at Work etc. Act 1974, Section 2 (& 3, where members of the public may be affected), The Control of Substances Hazardous to Health Regulations 2002 (as amended), Regulation 7(1)

Insufficient steps have been taken to prevent persons from being exposed to airborne isocyanates and, under current circumstances, there is a significant risk that people will be excessively exposed and be put at significant risk.

2 IMPROVEMENT NOTICE TEMPLATES

a) COSHH Regulation 6, Assessment:

Control of Substances Hazardous to Health Regulations 2002 (as amended) Regulation 6(1), Health and Safety at Work etc. Act 1974, Section 2(1)

You as an employer are carrying out work which is liable to expose your employees to a substance hazardous to health namely... and you have not carried out a suitable and sufficient assessment of the risks created by that work and identified the steps that need to be taken to control those risks.

SCHEDULE

In order to comply with this notice you should:

Carry out a suitable and sufficient assessment of the health risks to employees from working with... which is a respiratory sensitiser. This assessment should include the following;

- the hazardous properties of the substance;
- information on the health effects provided by the supplier including information contained in any safety data sheet;
- the level, type and duration of exposure;
- the work circumstances including the amount of the substance involved;
- activities such as maintenance where there is the potential for a high level of exposure;
- any relevant occupational exposure limit;
- the effect of preventive or control measures provided in accordance with regulation 7;
- the results of any relevant health surveillance;
- the results of any monitoring of exposure in accordance with regulation 10;
- where the work involves exposure to more than one substance hazardous to health, the risk presented by exposure to a combination of substances;
- any additional relevant information.

You should make provisions to ensure that this assessment is reviewed. Those provisions should extend to systems to ensure that changes are made where there is reason to believe that the assessment is no longer valid or there has been a significant change in the work to which the assessment relates and where as a result of the review changes to the assessment are required.

OR

You should take any other equally effective measures to achieve compliance with the Notice.

NOTE: Further information relevant to this notice is contained in HSE publications L5, COSHH ACOP, Control of Substances Hazardous to Health 2002 and guidance L55, Preventing Asthma at Work, How to Control respiratory Sensitisers.

b) COSHH, Regulation 7, Control (for failure to provide/inadequate RPE):

Control of Substances Hazardous to Health Regulations 2002 (as amended), Regulation 7(3), Health and Safety at Work etc. Act 1974, Section 2(1)

You have failed to provide persons exposed to with Respiratory Protective Equipment which adequately controls their exposure.

SCHEDULE

..... is respiratory sensitiser and is harmful by inhalation.

Where it is necessary to use Respiratory Protective Equipment (RPE) either solely or in addition to other control measures, you should ensure.

- 1 that the RPE is suitable for purpose and capable of adequately controlling exposure
- 2 that it is kept clean and regularly maintained
- 3 that it is on individual issue and specifically selected for individual employees

OR

You should take any other equally effective measures to achieve compliance with the Notice.

This does not form part of the notice

NOTE: Further information relevant to this notice is contained in HSE publications L5 'COSHH ACOP, Control of Substances Hazardous to Health 2002 and guidance and L55 'Preventing Asthma at Work, How to Control respiratory Sensitisers.

You are reminded that persons who need to use RPE to control exposure should be trained in its correct use.

c) COSHH, Regulation 7(7), adequate control of exposure:

Control of Substances Hazardous to Health Regulations 2002, Regulation 7 Health and Safety at Work etc. Act 1974, Section 2(1)

You have failed to properly apply the Principles of good practice in Schedule 2A and have failed to develop and apply control measures which reduce exposure to airborne isocyanates to as low a level as is reasonably practicable below the relevant Workplace Exposure Limits (WELs)

SCHEDULE

In order to comply with the requirements of this Notice you should:

- Apply the Principle of good practice for the control of exposure to substances hazardous to health (See COSHH 2002 (as amended) Schedule 2A)
- Review all elements of the isocyanate exposure control measures including:-
 - the equipment used;
 - the ventilated booth or spray room effectiveness;
 - the air-fed breathing apparatus; and
 - the defined systems of work and methods of working in order to identify where exposure control effectiveness can be improved and then to make the necessary improvements.
- Check that isocyanate exposure has been minimised by measuring exposure using biological monitoring.

OR

You should take any other equally effective measures to achieve compliance with the Notice. This does not form part of the notice. You are reminded that persons who need to use these above control measures should be trained in their correct use.

NOTE: Further information relevant to this notice is contained in HSE publications L5, COSHH ACOP, Control of Substances Hazardous to Health 2002 and guidance L55, Preventing Asthma at Work, How to Control respiratory sensitisers.

d) COSHH, Regulation 9(2)(a), LEV Testing:

Control of Substances Hazardous to Health Regulations 2002 (as amended), Regulation 9(2)(a), Health and Safety at Work etc. Act 1974, Section 2(1)

You have failed to have the Local Exhaust Ventilation system provided for the control of ... which is a respiratory sensitiser and a substance hazardous to health thoroughly examined and tested within the previous 14 months.

SCHEDULE

In order to comply with the requirements of this notice you should ensure that:

1 The local exhaust ventilation system provided to meet the requirements of regulation 7 of COSHH should be thoroughly examined and tested and a suitable record kept. The record should contain at least the following particulars:

- (a) The name and address of the employer responsible for the plant;
- (b) Identification and location of the LEV plant, process and hazardous substance concerned;
- (c) Date of last through examination and test;
- (d) Conditions at time of test; normal production or special conditions (e.g. maximum use, stood down);
- (e) Information about the LEV plant which shows:
 - (i) its intended operating performance for controlling the hazardous substance for the purpose of regulation 7;
 - (ii) whether the plant now still achieves the same performance;
 - (iii) if not, the repairs required to achieve that performance;
- (f) methods used to make judgement at (e)(ii) and (e) (iii) (e.g. visual, pressure measurements, air flow measurements, dust lamp, air sampling, filter integrity tests);
- (g) date of examination and test;
- (h) name, designation and employer of person carrying out examination and test;
- (i) signature or unique authentication of person carrying out examination and test;
- (j) details of repairs carried out.

2 the record should be completed by the employer responsible for the plant

OR

You should take any other equally effective measures to achieve compliance with the Notice.

This does not constitute part of the notice.

NOTE: Further information relevant to this notice is contained in HSE publications L5 'COSHH ACOP, Control of Substances Hazardous to Health 2002 and guidance' and L55 'Preventing Asthma at Work, How to Control respiratory Sensitisers'.

e) COSHH Reg 9(1)(b) – Maintenance and review of controls:

Control of Substances Hazardous to Health Regulations 2002 (as amended), Regulation 9(1)(b), Health and Safety at Work etc. Act 1974, Section 2(1)

The systems of work, including defined methods of working and the supervision of the systems have not been reviewed and there is evidence that people are not using or following the systems of work properly and that isocyanate exposure has not been reduced to as low a level as is reasonably practicable.

In order to comply with the requirements of this Notice you should take the following action:

- Review the defined methods of working and other aspects of systems of work with the people doing and supervising the work in order to verify whether they are workable and practical.
- Modify the systems of work, if necessary, and edit the defined procedures etc.
- Edit any simple instructions and communicate effectively with employees through simple means such as notices posted in the workplace.
- Re-train operators, supervisors and managers in any modified systems of work.
- Agree another review date to check the systems of work are being maintained and to consider whether they can be improved.

(Note There is further general guidance in the text accompanying Regulation 9 and the guidance associated with Principle (g) Schedule 2A (paragraphs 351 – 355))

OR

You should take other, equally effective measures, to achieve compliance with the Notice.

f) COSHH, Regulation 11, Health Surveillance:

Control of Substances Hazardous to Health Regulations 2002, Regulation 11
Health and Safety at Work etc. Act 1974, Section 2(1)

You have failed to ensure that employees exposed to ,a substance hazardous to health, are under suitable health surveillance.

SCHEDULE

In order to comply with the requirements of this notice you should develop a system of health surveillance for those persons exposed towhich is a respiratory sensitiser. The level of health surveillance should be related to the degree of risk of developing sensitisation.

OR

You should take any other equally effective measures to achieve compliance with the Notice.

NOTE: Information on appropriate levels of health surveillance for various asthmagens is contained in HSE publication L55 Preventing Asthma at Work, How to Control respiratory Sensitisers. Further information relevant to this notice is also contained in HSE publication L5.

COSHH ACOP, Control of Substances Hazardous to Health 2002 and guidance.

g) COSHH Regulation 12 - Information, instruction and training:

Control of Substances Hazardous to Health Regulations 2002, Regulation 12(1)
Health and Safety at Work etc. Act 1974, Section 2(1)

Those employees who may be exposed to..... have not been provided with suitable and sufficient information, instruction and training about the risks from exposure to.... and the precautions they should take.

SCHEDULE

In order to comply with this notice you should provide those employees who may be exposed to with information, instruction and training on;

- the names of the substances and the risk they present to health;
- any relevant occupational exposure limit; access to safety data sheets and information on any other legislative provisions relevant to the hazardous properties of the substance(s);
- the significant findings of the risk assessment;
- the appropriate precautions and actions to be taken to safeguard themselves and others;
- training on the control measures adopted and how to use them properly;
- training in the proper use of PPE including requirements in relation to cleaning, storage and disposal procedures;
- the results of any exposure monitoring;
- the role of health surveillance, their duty to attend, arrangements for access to individual health records and collective results of health surveillance;
- training in emergency procedures.

Employees should also be informed about, and trained in the procedures to be followed in an emergency

OR

You should take any other equally effective measures to achieve compliance with the Notice.

NOTE: Further information relevant to this notice is contained in HSE publications L5 'COSHH ACOP, Control of Substances Hazardous to Health 2002 and guidance' and L55 'Preventing Asthma at Work, How to Control respiratory Sensitisers.