

# MR2

## COSHH essentials in motor vehicle repair



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

It is also useful for trade union and employee safety representatives.

This sheet describes good practice using air-fed RPE (breathing apparatus) and a dedicated extracted spray booth or room.

It covers the points you need to follow to reduce exposure to an adequate level.

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

'Isocyanate' means all isocyanate-based two-pack products. It may be described as 'prepolymer'. This still contains active isocyanate.

### Main points

- Spraying produces high levels of invisibly-fine isocyanate mist, the main source of exposure.
- Make sure the controls work and you know the 'clearance time'.
- Check the controls using biological monitoring - see sheet G408.
- Use health surveillance for asthma and dermatitis - see sheets G402 and G403.
- Also see sheet MR0.

# Spraying two-pack (2K) products in a spray booth or room

## Control approach R

### Respiratory protective equipment (RPE)

#### Hazard

- ✓ Isocyanate can cause asthma by breathing in paint mist.
- ✓ Control exposure to stop occupational asthma developing. Even short-term exposures can cause harm. If an individual does develop occupational asthma, avoid further exposure.
- ✓ Isocyanate can cause dermatitis by skin contact.
- ✓ There is no evidence for cancer from isocyanate in paints.

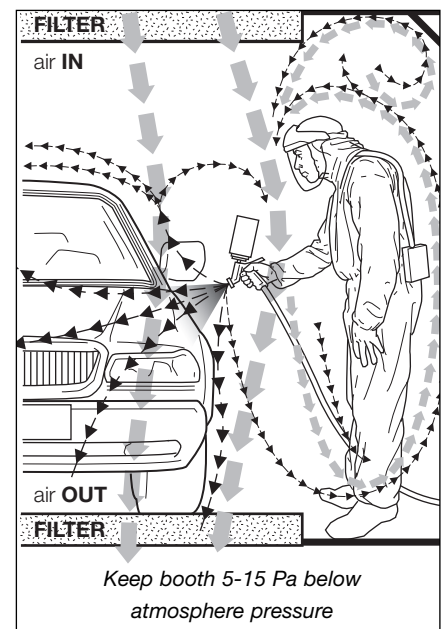
#### Access and premises

- ✓ Only allow access to trained staff who are under health surveillance.
- ✓ Keep members of the public away from all work with two-pack products.
- ✓ Display the spray booth or room 'clearance time' clearly.

#### Equipment

- ✓ Provide 'compliant' spray guns that minimise paint mist.
- ✓ Use a spray booth or room that runs under slight negative pressure to prevent mist leaking into the workshop.
- ✓ Wire in the booth ventilation with the lighting circuit.
- ✓ Measure the clearance time - use a smoke generator.
- ✓ Fit a compressed air supply for breathing apparatus. Make sure the right amount of compressed air is always available, and that it is fit to breathe.
- ✓ Discharge filtered, extracted air outside the building, away from doors, windows and air inlets.

Caution: Never spray two-pack isocyanate products, primers or paints in the open workshop. Use the spray booth or room.



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## Personal protective equipment (PPE)

### *Respiratory protective equipment (RPE)*

- ✓ Air-fed breathing apparatus is always needed.
- ✓ You need equipment with an Assigned Protection Factor (APF) of 20 or higher. Use a LDM3 air-fed half-mask with a visor, or LDH3 air-fed visor with APF 40. See sheets R3 and R5.
- ✓ Can you use visor covers to protect the visor from spray?
- ✓ Make sure all breathing apparatus is properly fit-tested - get advice from your supplier.
- ✓ Keep RPE clean and store it in a clean place - not in the mixing area or booth.

### *Other PPE*

- ✓ Provide disposable coveralls. Discard these at the end of a day's work.
- ✓ Provide chemical resistant gloves, eg nitrile. Single-use gloves are preferred.
- ✓ Throw away single-use gloves every time they are taken off.
- ✓ Skin creams are important for skin protection and help in washing contamination from the skin. After work creams help to replace skin oils.
- ✓ Where you have to use a strong hand cleaner, remind workers to wash off residues with soap and water.

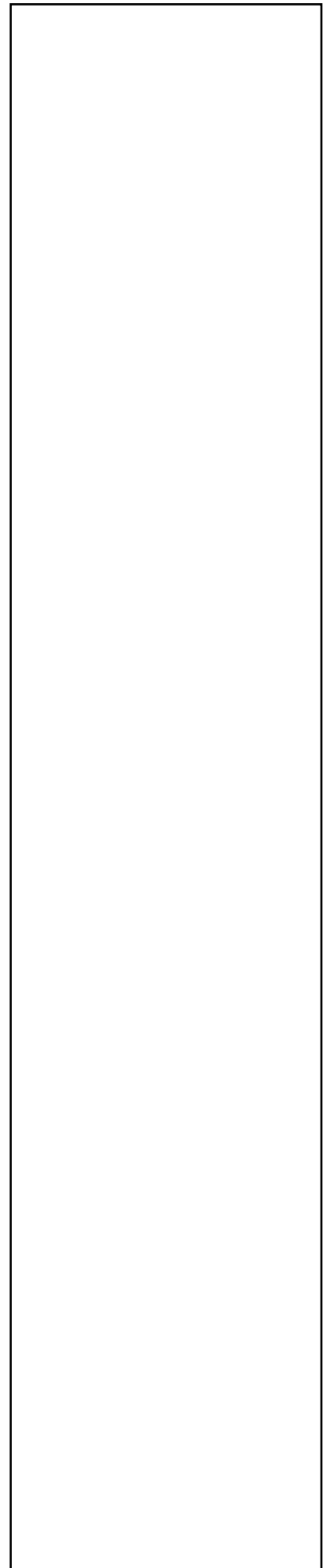
**Caution: 'Barrier creams' or 'liquid gloves' do not provide a full barrier. Never use thinners to clean skin.**

### **Procedures**

- ✓ Reduce exposure to isocyanate as far as possible.
- ✓ Set the booth extraction running before spraying or baking begins. Keep it running for at least the clearance time after spraying.
- ✓ Ensure that air-fed breathing apparatus is worn for spraying and that users check it works properly every time they use it.
- ✓ Workers must keep their breathing apparatus on until they have left the booth or room.

### **Maintenance, examination and testing**

- ✓ Keep equipment in effective and efficient working order - follow instructions in user manuals.
- ✓ If the extraction system is faulty, stop work until it is repaired.
- ✓ Change the filters as directed. Keep spares.
- ✓ Keep airline oil and water traps empty, and filters clean.
- ✓ Every day, look for signs of damage to the booth, eg door seals.
- ✓ At least once a week, look for signs of damage to the ducting, fan and air filter or cleaner. Noisy or vibrating fans can indicate a problem. Check the pressure gauge works properly.
- ✓ At least once a month, check the booth and ductwork for leaks - use a smoke generator.
- ✓ You need to know the manufacturer's specifications to check the extraction's performance.
- ✓ If this information isn't available, hire a competent ventilation engineer to determine the performance needed for effective control.
- ✓ The engineer's report must show the target extraction rates.



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- ✓ Keep this information in your testing logbook.
  - ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance at least once every 14 months. See the HSE publication HSG54 - see 'Further information'.
  - ✓ Visually check compressed airlines for signs of damage before use.
  - ✓ Check the airflow and air quality to air-fed breathing apparatus regularly.
  - ✓ Examine and test breathing apparatus thoroughly at least once every three months.
  - ✓ Use biological monitoring to detect personal exposure to isocyanate - see sheet G408.
  - ✓ Keep records of all checks, examinations and tests for at least five years.

### Health monitoring

- ✓ Use high-level health surveillance for asthma - see sheet G402. There is a chance of asthma developing, even with good controls in place.
- ✓ Use health surveillance for dermatitis - see sheet G403.
- ✓ Consult an occupational health professional - see 'Useful links'.

### Cleaning and housekeeping

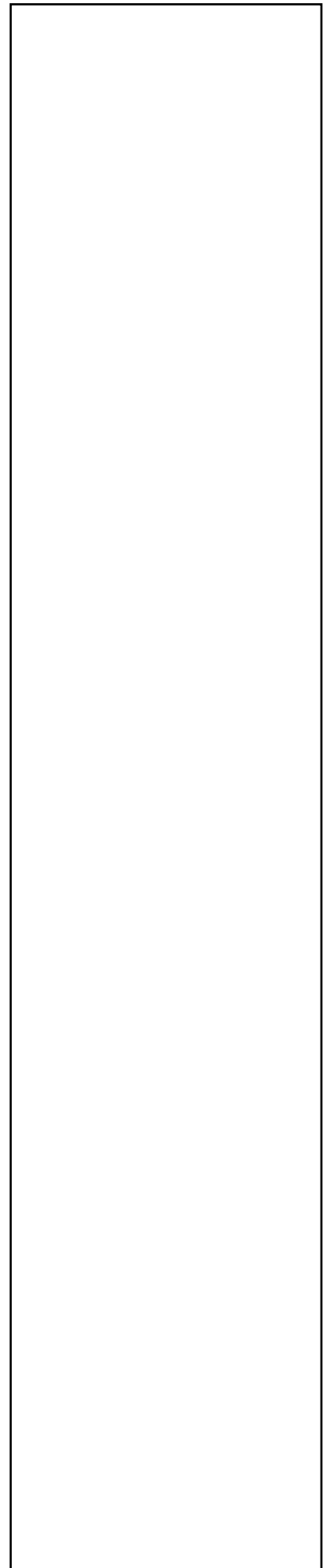
- ✓ Keep the spray booth and surrounding areas clean.
- ✓ Clean general workrooms once a week.
- ✓ Deal with spills immediately - absorb liquid spills with granules and decontaminate. Provide air-fed RPE for cleaning up larger spills.
- ✓ Decontaminate wipes and waste paint before disposal as hazardous waste.

### Decontamination of isocyanate

- ✓ Ask your product supplier or read the safety data sheet. You can use a solution of sodium carbonate (washing soda) in water, 50g per litre. Add to the isocyanate and leave for several days to decontaminate.

### Training and supervision

- ✓ Working in the right way and using the controls correctly is important for controlling exposure. Train and supervise workers. See sheet MRO.
- ✓ Tell your workers:
  - which two-pack paints and products contain isocyanates;
  - that these can cause asthma and dermatitis and the signs to watch out for;
  - that spray booths or rooms take some time to clear of mist; and
  - mist that gets breathed in is invisible under normal lighting.
- ✓ Instruct workers never to remove their RPE for any reason (eg lift visor to check spray quality) before the clearance time has elapsed.
- ✓ Provide health and safety training. Include supervisors and managers. Ask your trade association, local college or paint supplier for advice on training providers.



### Further information

- Safety in motor vehicle repair: Working with 2-pack isocyanate paints Leaflet INDG388 HSE Books 2003 (single copy free or priced packs of 10 ISBN 0 7176 2756 X) Web version: [www.hse.gov.uk/pubns/indg388.pdf](http://www.hse.gov.uk/pubns/indg388.pdf)
- Preventing asthma at work. How to control respiratory sensitisers L55 HSE Books 1994 ISBN 0 7176 0661 9
- *Respiratory protective equipment at work: A practical guide* HSG53 (Third edition) HSE Books 2005 ISBN 0 7176 2904 X
- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *Preventing dermatitis at work: Advice for employers and employees* Leaflet INDG233 HSE Books 1996 (single copy free or priced packs of 15 ISBN 0 7176 1246 5)
- For environmental guidelines see sheet MR0

### Useful links

- Your trade association may advise on health and safety consultants and training providers.
- For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit [www.hse.gov.uk/](http://www.hse.gov.uk/). You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.
- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at [www.bohs.org](http://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](http://www.nhsplus.nhs.uk).

This document is available at: [www.hse.gov.uk/pubns/guidance/](http://www.hse.gov.uk/pubns/guidance/) and [www.hse.gov.uk/coshh/essentials/](http://www.hse.gov.uk/coshh/essentials/)

**This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

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### Employee checklist

- Keep unprotected people away while you are using two-pack products.
- Is the extraction switched on and working properly?
- Look for signs of leaks, wear and damage.
- Check that your air-fed mask works properly every time you put it on.
- Never remove your mask for any reason until the spray booth has cleared.
- Never lift a ventilated visor to check paint quality.
- Decontaminate spills immediately, then clear them up as soon as possible.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Co-operate with health surveillance.
- Use, maintain and store your PPE in accordance with instructions.
- Throw away single-use gloves every time you take them off.
- Wash your hands before eating, drinking, smoking and using the lavatory.
- Never use solvents to clean your skin.
- Use skin creams provided as instructed.
- Provide a urine sample to check you are not breathing in isocyanates. The sample won't be tested for anything else.