

# MR2

## COSHH essentials in motor vehicle repair



The Control of Substances Hazardous to Health Regulations 2002 (COSHH) require employers to ensure that exposure is prevented or, where this

is not reasonably practicable, adequately controlled. This guidance gives practical advice on how this can be achieved by applying the principles of good practice for the control of exposure to substances hazardous to health, as required by COSHH.

It is aimed at people whose responsibilities include the management of substances hazardous to health at work (eg occupational health specialists, anyone undertaking COSHH assessments, supervisors and is also useful for trade union and employee safety representatives). It will help you carry out COSHH assessments, review existing assessments, deliver training and supervise activities involving substances hazardous to health.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

See Essential information near the end of the sheet.

### 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'. This is the time taken for contaminants to be removed from the air in a specific booth and will vary depending on the design and air movement once the spraying has stopped.
- Check the controls are working using biological monitoring.

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

## Control approach Engineering and RPE

### What this sheet covers

This sheet describes good control practice when spraying two-pack (2K) paint containing isocyanate. 'Isocyanate' means all isocyanate-based two-pack products. It may be described as 'prepolymer'. This still contains active isocyanate.

It covers the key points you need to follow to help reduce exposure to an adequate level. Follow all the points, or use equally effective measures.

### Hazards

- ✓ Breathing in isocyanate paint mist can cause asthma.
- ✓ Control exposure to stop occupational asthma developing. Even short-term exposures can cause harm.
- ✓ Isocyanates can cause skin allergies and dermatitis by skin contact.
- ✓ There is no evidence for cancer from isocyanate in paints.

### Access to work area

- ✓ Allow access to authorised and appropriately trained people only.
- ✓ Display the spray booth or room 'clearance time' clearly.

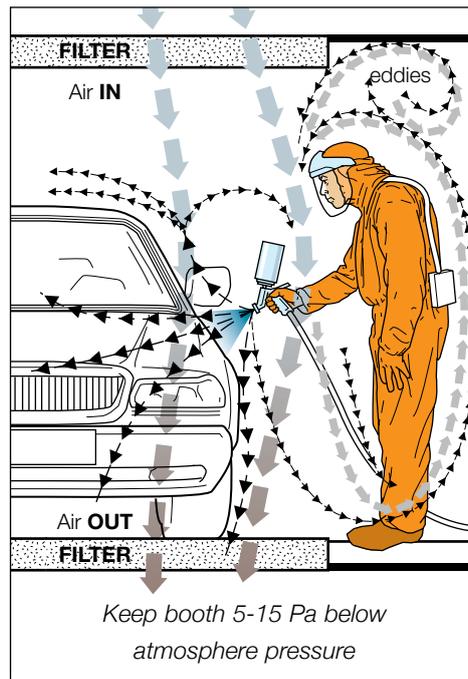
### Equipment and procedures

- ✓ Provide 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.
- ✓ Connect the room ventilation to the lighting circuit and incorporate a timed extraction overrun.
- ✓ 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:** Use a spray booth or room when spray painting with isocyanate products to contain the spray and protect other workers in the area.

### Respiratory protective equipment (RPE)

- ✓ Constant flow airline breathing apparatus is always needed.
- ✓ Use equipment with a UK Standard Assigned Protection Factor (APF) of 20 or higher, for example a constant flow airline breathing apparatus with a mask or a hood.
- ✓ Use disposable visor covers to protect the visor from spray.
- ✓ Check the quality of the air supply to the airline breathing apparatus once a month.
- ✓ Visually check the compressed airlines for signs of damage before each use.
- ✓ Maintain the airline breathing apparatus at least once a month. Replace worn or damaged parts on respirators. The valves need changing frequently if substances such as paint sprays land on them.
- ✓ Keep a small stock of replaceable parts.
- ✓ Keep breathing apparatus clean and store it in a clean place — not in the mixing area or booth.
- ✓ Never spray isocyanate-containing paints in an occupied workshop, or spray without airline breathing apparatus. Even very small jobs, such as, small and medium area repair technique (SMART) repairs will create high-exposure peaks.
- ✓ Airline breathing apparatus is required for anyone present in the spray booth or room during spraying and during the clearance time.
- ✓ Sprayers should not remove their face-piece after spraying to check the work quality until after the clearance time is up.
- ✓ When leaving the spray booth during the clearance time, the sprayer must exit using the pedestrian door. The sprayer must keep wearing the airline breathing apparatus with the airline hose attached until he reaches the exit door. The sprayer should open the door then unplug the airline and put the disconnected hose on a hanger next to the door. The sprayer should step outside the door and then close the door. At this point the sprayer can remove the face-piece of the airline breathing apparatus.
- ✓ Face fit testing is required for airline breathing apparatus with a tight fitting face seal.



### Personal protective equipment

- ✓ Provide disposable coveralls. Discard these at the end of the shift.
- ✓ Provide single-use nitrile gloves.
- ✓ Discard single-use gloves every time you take them off.
- ✓ Ask your supplier to advise on suitable protective equipment.

### Personal decontamination and skin care

- ✓ Provide warm water, mild skin cleansers, and soft paper or fabric towels for drying. Avoid abrasive cleansers.

- ✓ Provide pre-work skin creams, which will make it easier to wash dirt from the skin, and after-work creams to replace skin oils.

**Caution:** 'Barrier creams' are not 'liquid gloves' and they do not provide a full barrier.

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

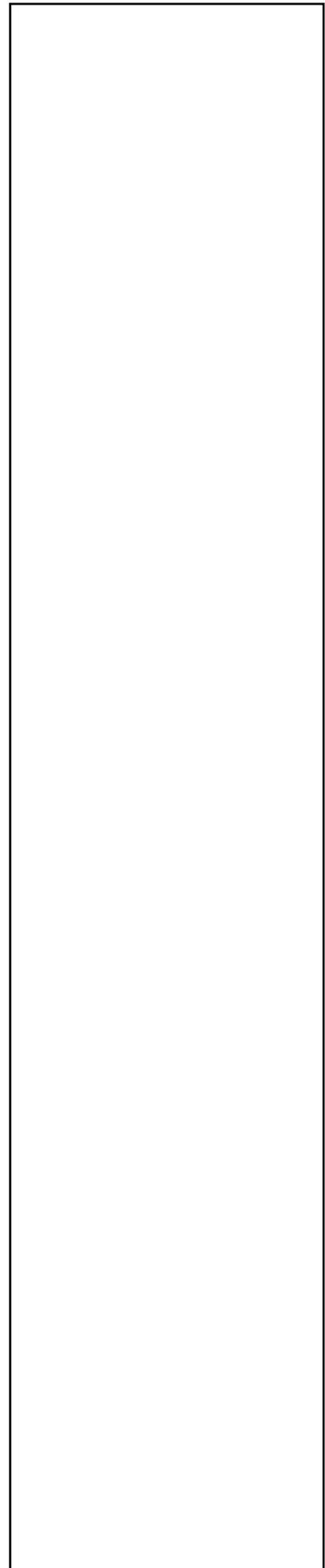
- ✓ Keep equipment, including engineering controls and airline breathing apparatus in effective and efficient working order.
- ✓ If the spray booth or spray room extraction is not working correctly, stop spraying work until it is repaired.
- ✓ Change the spray booth and room extract filters when required to prevent the filters clogging to ensure the extraction continues to work efficiently.
- ✓ Every day checks include: ensuring the booth pressure is negative to the pressure outside the booth, check for signs of damage to the booth and its door seals.
- ✓ Every week checks include: looking for signs of damage to the ducting, fan and filters. Ensure the pressure gauges are working correctly.
- ✓ Every month checks include: using a smoke generator to make sure there are no leaks from the spray booth or room including the ductwork.
- ✓ For local exhaust ventilation (LEV) a user manual or log book is helpful in setting out the frequency of checking, maintenance or parts replacement.
- ✓ For LEV with no user manual or log book, you may need the help of a competent person. They can determine the performance needed for adequate control.
- ✓ LEV systems require a statutory 'thorough examination and test' (TExT).
- ✓ Get a competent person to perform the TExT at least once every 14 months.
- ✓ Keep records of all examinations and tests for at least 5 years.
- ✓ Conduct clearance testing of the spray booths and rooms to determine the length of time needed for paint mist to be removed by the extraction system. Display this time clearly on the booth or room and instruct sprayers not to remove their airline breathing apparatus during the clearance time after they have sprayed paint containing isocyanate.

### **Exposure monitoring**

- ✓ Carry out biological monitoring if workers are spraying isocyanate products.
- ✓ Carry out biological monitoring during the first few months of employment to show that airline breathing apparatus, PPE and working practices are sufficient to control isocyanate exposure. It is good practice to have urine samples taken for sprayers using isocyanate-containing paints once a year and more often if previous exposure results have exceeded the biological monitoring guidance value (BMGV).

### **Cleaning and housekeeping**

- ✓ Keep the spray booth and surrounding areas clean.
- ✓ Deal with spills immediately - absorb liquid spills with granules and decontaminate (ask your product supplier or follow the safety data sheet instructions).
- ✓ Provide air-fed RPE for cleaning up larger spills.
- ✓ Decontaminate wipes and waste paint before disposal as hazardous waste.



### Health Surveillance

- ✓ Provide health surveillance for asthma where there is a reasonable likelihood that asthma may occur in your workplace. See G402.
- ✓ Provide health surveillance for dermatitis where there is a reasonable likelihood that dermatitis may occur in your workplace. See G403.

### Training and supervision

- ✓ Working in the right way and using the controls correctly is important for controlling exposure. Train and supervise workers.
- ✓ 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 face piece of the airline breathing apparatus 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.
- ✓ Involve managers and supervisors in health and safety training.
- ✓ Tell workers about the hazards associated with their work.

### Essential Information

*COSHH essentials in motor vehicle repair: Advice for managers* MR0  
HSE 2011 [www.hse.gov.uk/pubns/guidance/mr0.pdf](http://www.hse.gov.uk/pubns/guidance/mr0.pdf)

*Cleaning two-pack (2K) paint spray guns* COSHH Guidance Sheet MR3  
HSE 2011 [www.hse.gov.uk/pubns/guidance/mr3.pdf](http://www.hse.gov.uk/pubns/guidance/mr3.pdf)

*SMART spraying with two-pack (2K) products* COSHH Guidance Sheet  
MR5 HSE 2011 [www.hse.gov.uk/pubns/guidance/mr5.pdf](http://www.hse.gov.uk/pubns/guidance/mr5.pdf)

*Health surveillance for occupational asthma* COSHH Guidance Sheet G402  
HSE 2011 [www.hse.gov.uk/pubns/guidance/g402.pdf](http://www.hse.gov.uk/pubns/guidance/g402.pdf)

*Health surveillance for occupational dermatitis* COSHH Guidance Sheet  
G403 HSE 2011 [www.hse.gov.uk/pubns/guidance/g403.pdf](http://www.hse.gov.uk/pubns/guidance/g403.pdf)

*Urine sampling for isocyanate exposure measurement* COSHH Guidance  
Sheet G408 HSE 2011 [www.hse.gov.uk/pubns/guidance/g408.pdf](http://www.hse.gov.uk/pubns/guidance/g408.pdf)

### Employee checklist

- Keep unprotected people away while you are using two-pack products.
- Check the extraction is switched on and working properly.
- Look for signs of leaks, wear and damage before every job.
- Check that your airline breathing apparatus works properly every time you put it on.
- Never remove your face-piece for any reason until the spray booth has cleared.
- Never lift or remove your face-piece or airline 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.
- Discard single-use gloves every time you take them off.
- Wash your hands before eating, drinking, smoking and using the toilet.
- Never use solvents to clean your skin.
- Use skin creams provided as instructed.
- Your employer should request you to provide a urine sample to check that you are not exposed to isocyanates. The sample will not be tested for anything else.

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### Further information

*Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV)* HSG258 [www.hse.gov.uk/pubs/books/hsg258.htm](http://www.hse.gov.uk/pubs/books/hsg258.htm)  
HSE's LEV webpage: [www.hse.gov.uk/lev/](http://www.hse.gov.uk/lev/)

You can find the full COSHH essentials series at [www.hse.gov.uk/coshh/essentials/index.htm](http://www.hse.gov.uk/coshh/essentials/index.htm)

Occupational Safety and Health Consultants Register [www.oshcr.org/](http://www.oshcr.org/)

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