

MR5

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 respiratory protective equipment and mist extraction.

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.
- Keep exposures as low as possible using all the controls in this sheet.
- Use health surveillance for asthma and dermatitis - see sheets G402 and G403.
- Check that controls work using biological monitoring - see sheet G408.
- Also see sheet MRO.

SMART spraying with two-pack (2K) products

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.
- ✓ If an individual develops occupational asthma, avoid further exposure.
- ✓ Isocyanate can cause dermatitis by skin contact.
- ✓ There is no evidence for cancer from isocyanate in paints.

Small to medium area repair technique (SMART) - typical characteristics

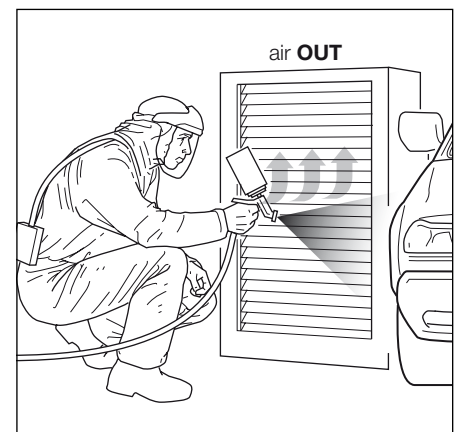
- spray with an airbrush or mini-spray gun;
- an inlet pressure below 2 bar;
- delivering less than 150 l/min air and less than 100 g/min paint;
- spraying takes a few minutes only using less than 25 ml paint in total; and
- covers an area less than a whole panel.

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. For spraying outdoors, keep people 5 to 10 metres away, eg cordon off the area.
- ✓ Remember: for spraying indoors, the air can take up to 30 minutes to clear of isocyanate.

Equipment

- ✓ Provide a compressed air or fresh air supply for RPE. Make sure the right amount of air is supplied, and that it is fit to breathe, eg by filtering the inlet air.
- ✓ Can you use an extracted booth or local extraction, eg a mobile unit close to the repair?
- ✓ Fit a manometer or pressure gauge near the extraction point, to show that the extraction is working properly.



When using a mobile extraction unit, make sure it is downwind of the spray mist

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 LDM2 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.

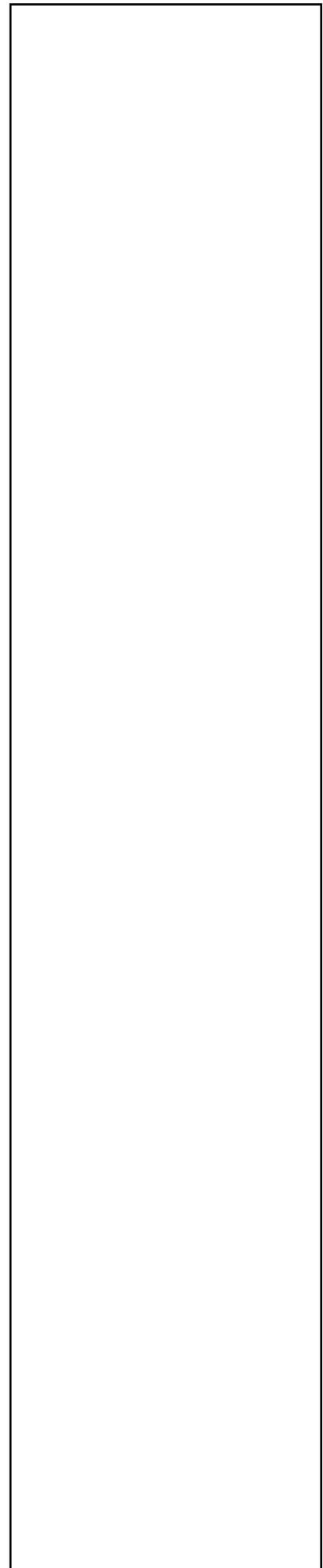
Caution: 'Barrier creams' or 'liquid gloves' do not provide a full barrier. Never use thinners to clean skin.

Procedures

- ✓ Always confirm that any extraction is turned on and working at the start of work. Check the gauge.
- ✓ Check breathing apparatus works properly every time it is used.
- ✓ Wear RPE until you are out of the contaminated area.

Maintenance, examination and testing

- ✓ Keep equipment in effective and efficient working order - follow instructions in user manuals.
- ✓ Keep airline oil and water traps empty, and filters clean.
- ✓ Every day, look for signs of damage.
- ✓ At least once a week, check that the extraction and gauge work properly.
- ✓ 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 air speeds.
- ✓ 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'.



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- ✓ 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 surveillance

- ✓ 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

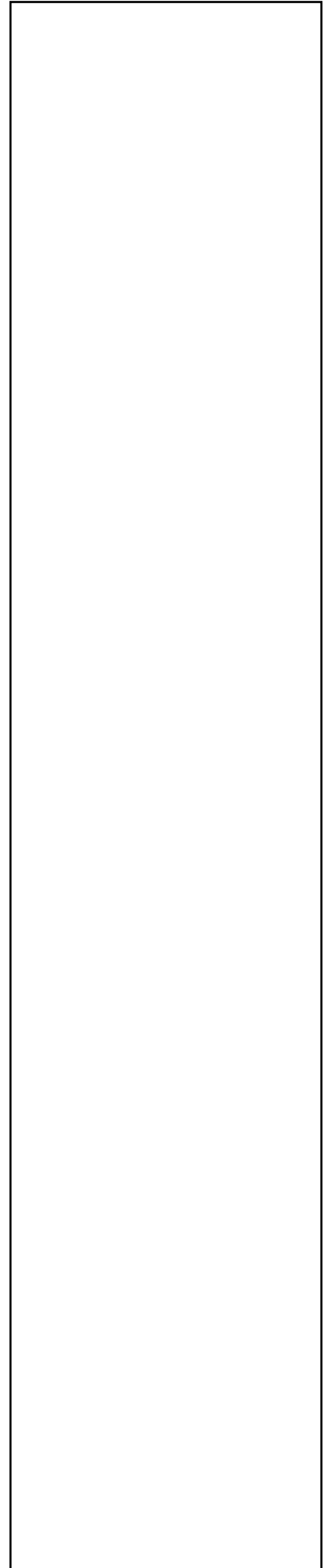
- ✓ Deal with spills immediately - absorb liquid spills with granules and decontaminate.
- ✓ Decontaminate wipes and waste before disposal as hazardous waste.

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 MR0.
- ✓ 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; 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 mist has cleared.
- ✓ 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
- 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.
- HSE priced and free publications are available from HSE Books Tel: 01787 881165 Website: www.hsebooks.co.uk.
- For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com.
- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at 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.

Employee checklist

- Keep unprotected people away while you are using two-pack products.
- Is any 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 respiration or lift a ventilated visor for any reason until you are well away from the work area.
- 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.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory 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 as illustrating good practice.