MR1

COSHH Essentials in motor vehicle repair

Mixing two-pack (2K) paint containing isocyanate

Control approach 1 General ventilation

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, and supervisors). It 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.

What this sheet covers

This sheet describes good control practice when mixing 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 reduce exposure to an adequate level. This is achieved by following good control practice, ie follow all the points described in this sheet or use equally effective measures.

Hazards

- ✓ Breathing in isocyanate paint mist can cause asthma.
- ✓ Control exposure to isocyanate 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 of cancer being caused by isocyanates in paints.

Access to work area

- ✓ Only allow access to authorised and appropriately trained people.

Equipment and procedures

- ✓ Designate a room for paint mixing. This may be the paint store.
- ✓ Ensure the room ventilation system operates whenever somebody is present. This can be achieved by using occupancy sensors or simply by connecting the room ventilation with the lighting circuit.
- ✓ Provide a good standard of general ventilation. This can be natural ventilation from doors, windows etc. or controlled, where air is supplied or removed by a powered fan.
- ✓ Discharge extracted air to a safe place outside the building, away from doors, windows, air inlets and other premises.
- ✓ Keep lids on cans and keep containers closed when not in use to stop vapour escaping.
- ✓ Keep exposure to isocyanate-based paint as low as possible using all the controls in this sheet.
- ✓ Get safety data sheets – consider using safer substitutes.
- ✓ Protect electrical equipment against fire and explosion risks.

Caution: Don't store more than 50 litres of flammable liquid indoors. Keep larger stocks in a secure, open-air storage area or in a separate fire-resisting store with spillage retention and good ventilation.

Respiratory protective equipment (RPE)

✓ RPE should not be needed if the ventilation is working properly in the mixing room.

Personal protective equipment (PPE)

✓ Provide workers with single-use nitrile gloves.

✓ Dispose of single-use gloves every time they are taken off.

✓ Ask your supplier to advise on suitable PPE.

✓ Make suitable arrangements for the correct maintenance, storage and replacement of PPE.

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 make it easier to wash dirt from the skin.

✓ Moisturisers should then be used after hand washing.

✓ Provide after-work creams to replenish skin oils.

Caution: These creams are not a substitute for gloves and do not provide a full barrier.

Maintenance, examination and testing

✓ Keep all equipment used for the task in effective and efficient working order. Maintain it as advised by the supplier or installer.

✓ Noisy or vibrating fans can indicate a problem. Repair them as soon as possible.

✓ Keep records of all examinations and tests for at least five years.

Exposure monitoring

✓ Biological monitoring may not be required for workers who mix isocyanate-based paints.

✓ Carry out biological monitoring if workers spray as well as mix paint.

✓ Carry out biological monitoring during the first few months of a worker's employment to show that airline breathing apparatus, PPE and working practices are sufficient to control isocyanate exposure. For sprayers using isocyanate-containing paints, it is good practice to take urine samples once a year and more often if previous biological monitoring exposure results have exceeded the guidance value (see G408 in Essential information).

Cleaning and housekeeping

✓ Clean work equipment and the work area daily. Clean other equipment and the workroom regularly – at least once a week.

✓ Deal with spills immediately – absorb liquid spills with granules and decontaminate the area (ask your product supplier or follow the Safety Data Sheet instructions). Practise how to do this.

✓ You may also need RPE for cleaning up larger spills of hardener or liquid containing isocyanates.

✓ Dispose of hazardous waste safely in a labelled, lidded bin.

Health surveillance

- ✓ Provide health surveillance for asthma where there is a reasonable likelihood that this may occur in your workplace. See G402 in Essential information.
- ✓ Provide health surveillance for dermatitis where there is a reasonable likelihood that this may occur in your workplace. See G403 in Essential information.
- ✓ It may be helpful to consult an occupational health professional on what the health surveillance should cover.

Training and supervision

- ✓ Tell workers about the hazards associated with their work and how to recognise early signs of asthma and dermatitis.
- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Show workers how to recognise the two-pack paints and products which contain isocyanates (and can cause asthma and dermatitis).
- ✓ Involve managers and supervisors in health and safety training.

Essential information

COSHH Essentials in motor vehicle repair: Advice for managers COSHH Guidance Sheet MR0, HSE. www.hse.gov.uk/pubns/guidance/mr0.pdf

Spraying two-pack (2K) products in a spray booth or room COSHH Guidance Sheet MR2, HSE. www.hse.gov.uk/pubns/guidance/mr2.pdf

Cleaning two-pack (2K) paint spray guns COSHH Guidance Sheet MR3, HSE. www.hse.gov.uk/pubns/guidance/mr3.pdf

SMART spraying with two-pack (2K) products outdoors COSHH Guidance Sheet MR5, HSE. www.hse.gov.uk/pubns/guidance/mr5.pdf

Health surveillance for occupational asthma COSHH Guidance Sheet G402 HSE. www.hse.gov.uk/pubns/guidance/g402.pdf

Health surveillance for occupational dermatitis COSHH Guidance Sheet G403, HSE. www.hse.gov.uk/pubns/guidance/g403.pdf

Urine sampling (biological monitoring) for isocyanate exposure measurement COSHH Guidance Sheet G408, HSE. www.hse.gov.uk/pubns/guidance/g408.pdf

Further information

You can find the full COSHH Essentials series at: www.hse.gov.uk/coshh/essentials/index.htm

Occupational Safety and Health Consultants Register www.oshcr.org/

For information about health and safety, visit 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.

To report inconsistencies or inaccuracies in this guidance, email: commissioning@tso.co.uk

Employee checklist

- ☐ Keep unprotected people away while you are using two-pack products.
- ☐ Check the ventilation is turned on before starting work.
- ☐ Replace lids on paint and solvent containers promptly.
- ☐ Decontaminate spills immediately, then clear them up as soon as possible.
- ☐ Look for signs of leaks, wear and damage before every job.
- ☐ 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.
- ☐ Dispose of single-use gloves every time you take them off.
- ☐ Wash hands before eating and drinking, after smoking and using the lavatory, and after work.
- ☐ Never use solvents to clean your skin.
- ☐ Check your skin regularly for dryness or soreness – make sure you know the procedure on reporting if such symptoms occur. Early intervention means it will be less likely that you develop permanent symptoms.
- ☐ Use skin creams provided as instructed.
- ☐ Your employer should ask you to provide a urine sample to check your exposure to isocyanates is below the workplace exposure limit. The sample will not be tested for anything else.

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