



Control approach 2

Soldering – fume from rosin- cored solder

SR20

Engineering control



This guidance sheet is for employers including the self-employed and franchisees

to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH) by controlling exposure to chemicals and protecting workers' health.

The sheet is part of HSE *guidance COSHH essentials: easy steps to control chemicals*. It describes the key points you need to follow to help reduce exposure to an adequate level. It is important to follow all the points, or use equally effective measures.

Colophony (rosin) fume can cause asthma.

Engineering control (extraction) is the recommended approach.

Exposure to substances with the potential to cause occupational asthma should be prevented, or if that is not reasonably practicable, control exposure to prevent exposed workers from developing asthma. This applies to short-term high exposures as well as long-term exposures. If an individual develops occupational asthma, exposure must be controlled to prevent triggering further attacks. Suitable levels are likely to be well below any exposure limit.

Electrically powered equipment requires portable appliance testing (PAT).

Workplace and access

- ✓ Restrict access to those people who need to be there.

Design and equipment

- ✓ Provide an extracted booth or cabinet, or tip extraction on the soldering iron.
- ✓ You need an air speed between 0.5 and 1 metres per second at the face of the booth. For tip extraction, see the manufacturer's instructions.
- ✗ Don't use bench-mounted filtration units that return air to the workroom.
- ✓ Stop draughts interfering with the extraction - locate the work away from doors, windows and walkways.
- ✓ Make sure a manometer or pressure gauge is fitted near the extraction point, to show that it is working properly.
- ✓ Discharge extracted air to a safe place, away from doors, windows and air inlets. Have a supply of clean air coming into the workroom to replace extracted air.
- ✓ You need washing facilities for decontamination after handling products.

Procedures

- ✓ Can you substitute with mechanical jointing, rosin-free or rosin-reduced solder?
- ✓ Use soldering irons at the lowest temperature possible for an acceptable joint.
- ✓ Confirm that the extraction is turned on and working at the start of work. Check the gauge.

Special care

- Colophony (rosin) fume from soldering can cause asthma.

Maintenance

- ✓ Follow instructions in maintenance manuals.
- ✓ Keep equipment in effective and efficient working order.
- ✓ If the extraction is faulty, stop work until it is repaired.
- ✓ If using tip extraction, keep the pipes free of condensed fume. See the maker's instructions.

Examination and testing

- ✓ At least once a week, look for signs of damage.
- ✓ You need to know the extraction design performance to know if it is working properly. The equipment supplier's manual should give this information.
- ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance at least once every 14 months (see HSE publication HSG54).
- ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

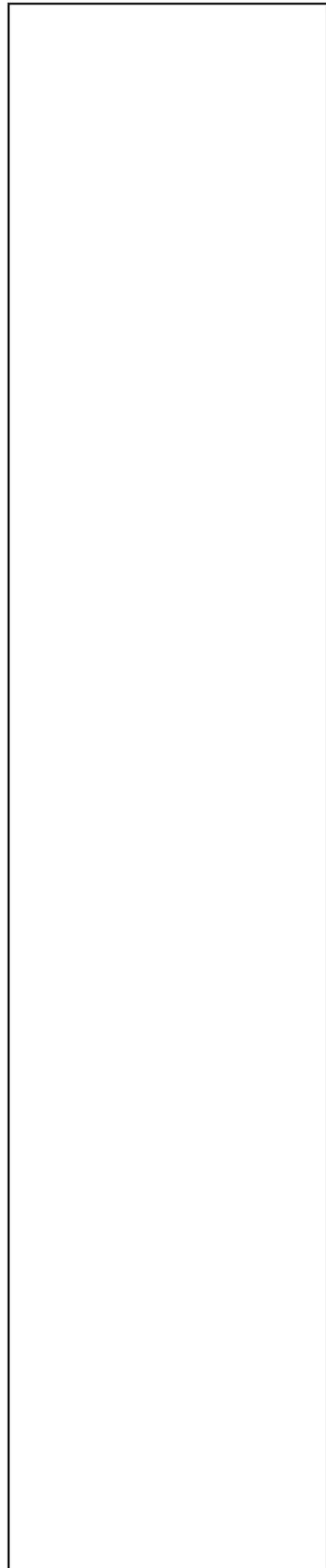
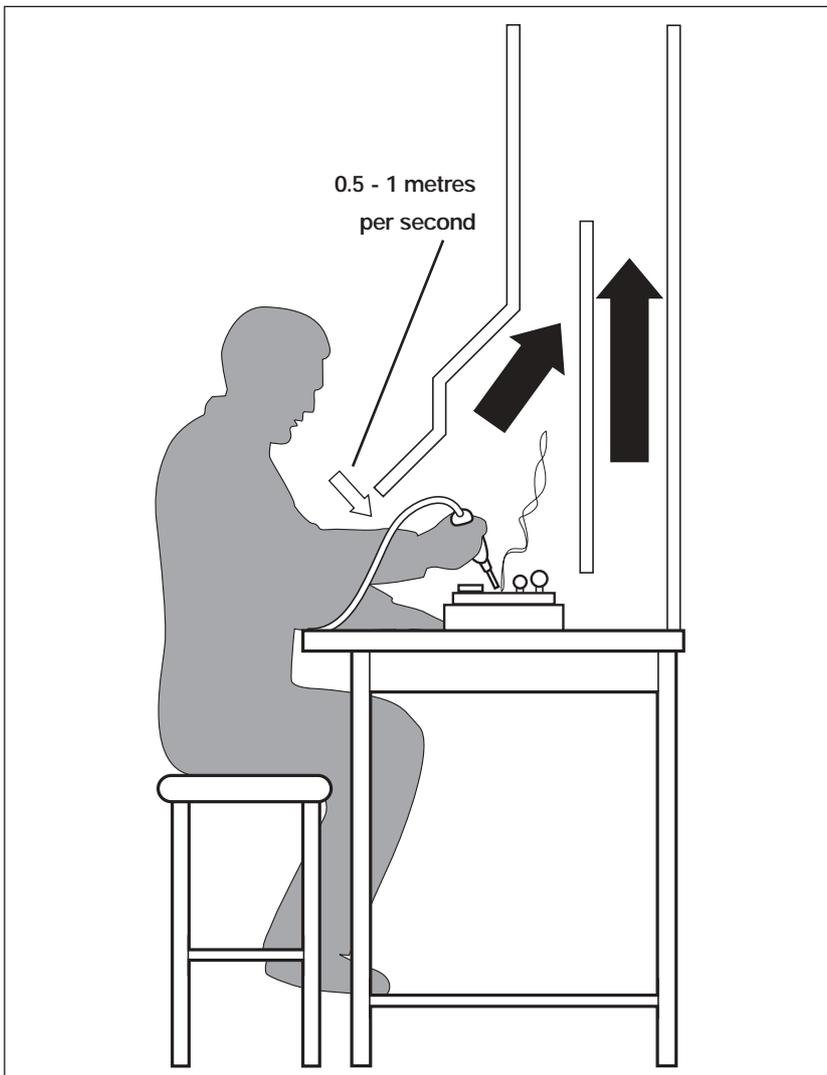
- ✓ Keep the work area clean.
- ✓ Dispose of empty containers and wastes safely.

Personal protective equipment (PPE)

- ✓ Respiratory protective equipment (RPE) should not be needed if the extraction and ventilation are working properly.
- ✓ Wear protective gloves - single-use nitrile gloves are acceptable. If you must use latex gloves, use only 'low-protein, powder-free' gloves.
- ✓ Throw away single-use gloves every time you take them off.
- ✓ Skin creams are important for skin protection and help in washing contamination from the skin. These are **not** 'barrier creams'. After work creams help to replace skin oils.

Health advice

- ✓ Ask your workers to check their skin for dryness or soreness every six months. If these effects appear, check the proper use of skin creams and PPE.
- ✓ Consult an occupational health professional if workers report sore eyes, runny nose, coughing, wheezing or breathing difficulties that seem to be connected with work.
- ✓ There is a chance of asthma developing (see Control guidance sheet 402).

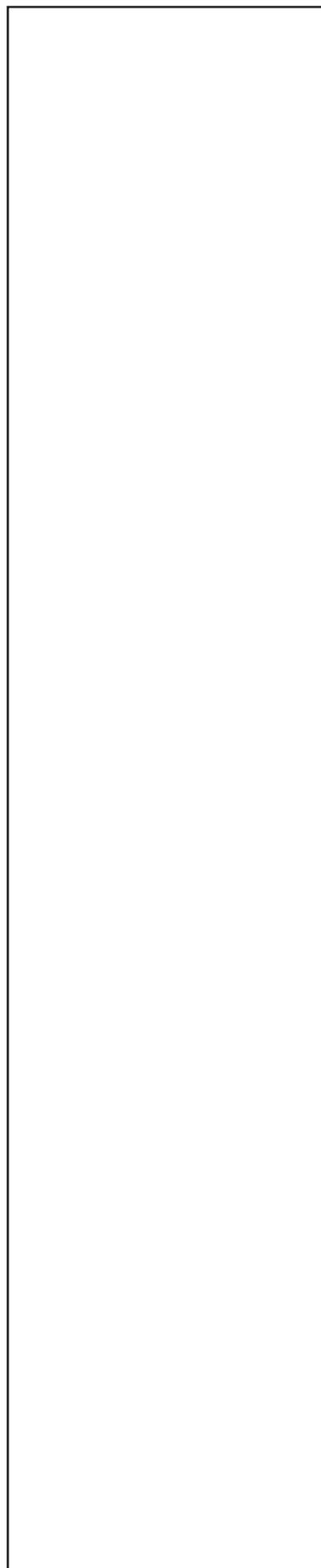


Training

- ✓ Show your workers this sheet and check that they understand it.
- ✓ Tell them about the risks of using the product - see product labels or Section 15 of the safety data sheet from your product supplier.
- ✓ Ensure training includes how to keep exposures low, how to check that the extraction system is working, how to use and look after PPE and RPE, and dealing with spills etc.

Supervision

- ✓ Check that the extraction is working properly, PPE is being used properly, and the rules on personal hygiene are being followed.



Further information

- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 **ISBN 0 7176 1485 9**
- *Preventing asthma at work. How to control respiratory sensitisers* L55 HSE Books 1994 **ISBN 0 7176 0661 9**
- *Assessing and managing risks at work from skin exposure to chemical agents: Guidance for employers and health and safety specialists* HSG205 HSE Books 2001 **ISBN 0 7176 1826 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**)
- *Controlling health risks from rosin (colophony) based solder fluxes* Leaflet INDG249 HSE Books 1997 (single copy free or priced packs of 10 **ISBN 0 7176 1383 6**)
- *Solder fume and you* Leaflet INDG248(rev) HSE Books 2001 (single copy free)
- Health and safety consultants: the BOHS Faculty of Occupational Hygiene keeps lists of qualified hygienists who can help you. Contact BOHS on 0133 229 8087 or at www.bohs.org/
- Occupational health professionals: details of doctors and nurses can be found in the Yellow Pages under 'Health and safety consultants' and 'Health authorities and services'. Also visit the NHS website at www.nhsplus.nhs.uk

Employee checklist

- Is the extraction switched on and working properly?
Check the gauge.
- Look for signs of leaks, wear and damage.
- Check that your RPE works properly every time you put it on.
- If you find any problems, tell your supervisor. Don't just carry on working.
- Wash your hands after use, and before and after eating, drinking, smoking and using the lavatory.
- Never clean your hands with concentrated cleaning products or solvents.
- Throw away single-use gloves every time you take them off.
- Check your skin regularly for dryness or soreness - tell your supervisor if these symptoms appear.
- Use skin creams provided as instructed.



*COSHH essentials:
easy steps to control chemicals*
October 2003

Printed and published by
the Health and Safety Executive