



Control approach 2

Embalming with formaldehyde solutions (formalin)

SR10

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.

Embalming fluids (includes all tissue preservatives) are biocidal products. Authorised products are safe for use so long as you follow the instructions on the label.

Vapour from embalming fluid causes irritation to the eyes, nose and throat.

You may need respiratory protective equipment (RPE).

Engineering control (extraction) is the recommended approach.

Electrically powered equipment requires portable appliance testing (PAT).

Caution: make sure you have a safe procedure for removing internal defibrillators (as they are an electric-shock hazard).

Workplace and access

- Embalming is carried out in morgues, funeral homes, forensic laboratories, medical schools and research laboratories.
- ✓ Restrict access to those people who need to be there.
- ✓ Provide good access to enable the use of handling aids.

Design and equipment

- ✓ Keep the workplace well ventilated - at least 10 air changes per hour with a through draught.
- ✓ Use an embalming table fitted with extraction via slots running along the long sides of the table. You need an extraction rate around 3.5 metres per second at the slots.
- ✓ Make sure a manometer or pressure gauge is fitted near the extraction point, to show that the extraction 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.
- ✓ Provide equipment for handling heavy weights.

Procedures

- ✓ Embalming contractors should be members of the British Institute of Embalmers.
- ✓ Buy liquid chemicals in containers that are easy to pour from, don't dribble, and don't trap liquid in a rim.
- ✓ If possible, buy products in a ready-for-use solution.
- ✓ Store products containing chemicals securely in a cool, dry, dark place, capable of keeping in spills. Don't store far more than you need.
- ✓ Make sure that the room ventilation and extraction are turned on before starting work.
- ✓ Keep absorbent blankets handy to absorb spills - ask your fluid supplier.
- ✓ Clean up spills promptly - practise how to do this.
- ✓ Write down your procedures for dealing with clinical waste. You need a clinical waste container and a contract for safe disposal.

Special care

- Formaldehyde can sensitise the skin, causing itching, rashes and blistering (dermatitis). There is some evidence that the vapour may cause cancer if breathed in over a long time.

Maintenance

- ✓ Follow instructions in maintenance manuals.
- ✓ Keep equipment in effective and efficient working order.
- ✓ If the equipment is faulty, get it repaired immediately.

Examination and testing

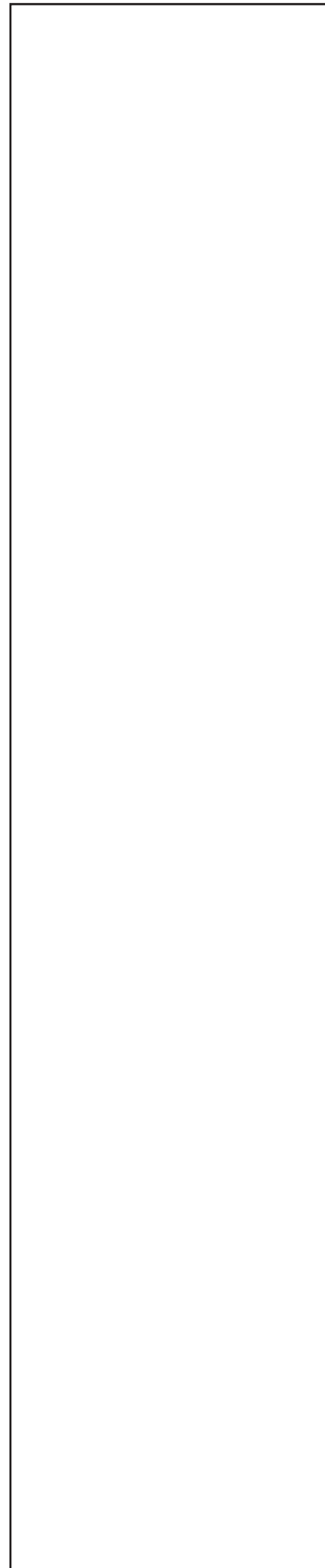
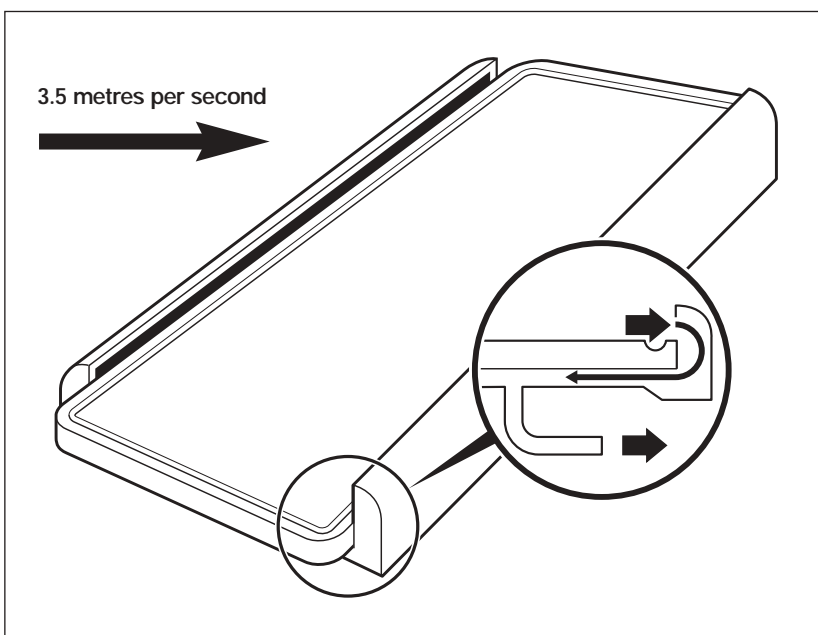
- ✓ At least once a week, look for signs of damage.
- ✓ You need to know the extraction design performance. The supplier's literature should give this information.
- ✓ Get a competent ventilation engineer to examine the system thoroughly and test its performance at least once every 14 months (see HSE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

Cleaning and housekeeping

- ✓ Keep the work area clean.
- ✓ Provide good welfare facilities - showers, washrooms, clothes storage and refreshment areas. Clean these areas every day.
- ✓ Deal with spills immediately - absorb liquid spills. This needs coveralls, respiratory protection and single-use gloves.
- ✓ Dispose of empty containers and wastes safely.

Personal protective equipment (PPE)

- ✓ Follow the instructions on product labels.
- ✓ Respiratory protective equipment (RPE) may be needed. Seek advice from an RPE supplier. Make sure you fit the right cartridge before starting work.
- ✓ Make sure you know how to check that RPE fits correctly. Seek advice from your supplier.
- ✓ Wear protective gloves - single-use nitrile gloves with forearm protectors 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.
- ✓ Wear waterproof, slip-resistant boots.
- ✓ Wear an impervious apron.
- ✓ 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.
- ✗ Workers must not take work clothing home for washing. Use a contract laundry.



Health advice

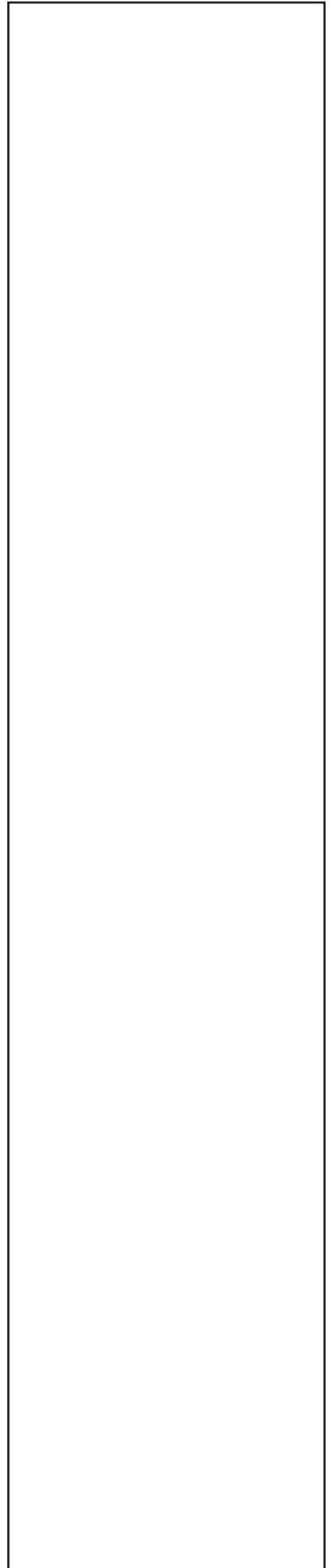
- ✓ Ask your workers to check their skin for dryness or soreness every six months. If these effects appear, check the proper use of skin creams and PPE.
- ✓ If you use a product labelled 'may cause sensitisation by skin contact' or 'may cause sensitisation by inhalation', seek specialist advice. See Further information.

Training

- ✓ 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 the proper procedures for decontamination, sterilisation and waste disposal are being followed.



Further information

- *General ventilation in the workplace: Guidance for employers* HSG202
HSE Books 2000 ISBN 0 7176 1793 9
- *Maintenance, examination and testing of local exhaust ventilation* HSG54
(Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *The selection, use and maintenance of respiratory protective equipment: A practical guide* HSG53 (Second edition) HSE Books 1998 ISBN 0 7176 1537 5
- *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)
- 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 ventilation switched on and working?
- 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.
- Clear up chemical spills promptly. Absorb liquid spills in an absorbent blanket and dispose of in a lidded bin kept outside.
- Use and store your protective equipment according to instructions.
- 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.
- Use handling aids to move heavy weights.



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