

MW1

COSHH essentials for machining with metalworking fluids



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.

Mist control: inhalation risks

Control approach 2 Engineering control

What this sheet covers

This sheet describes good control practice when using engineering controls to reduce exposure to metalworking fluid mists.

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

Hazards

- ✓ Metalworking fluid mists can cause lung diseases such as asthma.

Access to work area

- ✓ Allow access to authorised and appropriately trained people only.

Equipment and procedures

- If possible prevent exposure.
- Confirm that you are using the most suitable fluid. Take advice from your fluid supplier about any hazards.
- If possible adjust the fluid flow rate to avoid overheating while minimising mist and splashes.
- Enclose machining head(s) as much as possible.
- Stop fluid delivery when not machining.
- Provide local exhaust ventilation (LEV). On enclosed machines use a time delay between the machine stopping and opening the doors.
- Airflow must be sufficient to control airborne contaminants effectively. This will depend on the design, size of opening and type of process and substance being controlled.
- Fit a manometer, pressure gauge or tell-tale to show that the LEV is working.
- Unless filtered, discharge extracted air to a safe place outside the building, away from doors, windows and air inlets.
- Cleaning machined components in a washing machine may produce harmful mist.

Respiratory protective equipment (RPE)

- RPE is normally not needed.
- RPE may be needed for deep-cleaning sumps.

Maintenance, examination and testing

- ✓ Keep equipment in effective and efficient working order. Follow the instructions in the manual.

-
- ✓ You need a user manual and log book which should set out the frequency of checking, maintenance and parts replacement.
 - ✓ Carry out daily checks to look for signs of damage to flexible ducts and hoods and check the air flow indicators are showing correct airflow.
 - ✓ Repair faulty extraction systems immediately ensuring that exposure is either prevented or controlled until such time that the repair is completed, eg wearing suitable RPE.
 - ✓ At least once a week, check that the extraction system works properly.
 - ✓ LEV systems require a statutory 'thorough examination and test' (TExT).
 - ✓ For 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.
 - ✓ Get a competent ventilation engineer to perform the TExT at least once every 14 months.
 - ✓ Several measures are available to check effectiveness of controls ranging from simple qualitative (use of dust lamp) to complex quantitative techniques (eg air sampling) usually for higher risk scenarios.
 - ✓ Keep records of all examinations and tests for at least five years.

Cleaning and housekeeping

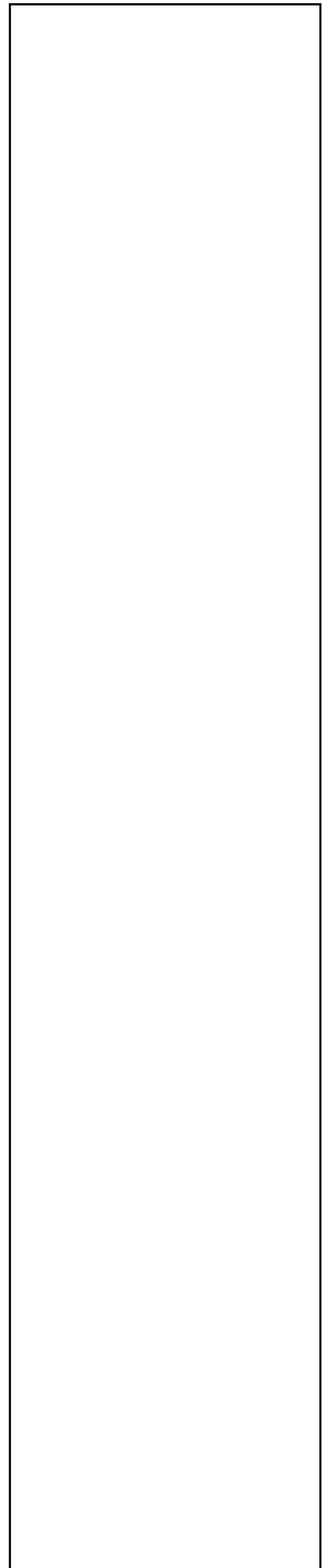
- ✓ Dispose of spilt fluid safely. Returning it to the machine contaminates the system and reduces the fluid's operational life.
- ✓ For cleaning water-mix sumps see sheet MW3.
- ✓ For cleaning oil-based fluid sumps see sheet MW4.
- ✓ There are a range of devices to clean away excess fluid and swarf from machined parts. Avoid using compressed air.
- ✓ Provide clean facilities for washing and taking refreshment, away from all machining activities.

Health surveillance

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

Training and supervision

- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Tell workers about the hazards associated with their work and how to recognise early signs of asthma.
- ✓ Provide workers with training on:
 - working safely with hazardous substances;
 - when and how to use controls;
 - how to check they are working;
 - what to do if something goes wrong.
- ✓ Consider keeping training records.
- ✓ Have a procedure to check that control measures are in place and being followed.
- ✓ Involve managers and supervisors in health and safety training.
- ✓ Working in the right way and using the controls correctly is important for exposure control. Train and supervise workers.



Essential information

COSHH essentials for machining with metalworking fluids: Advice for managers COSHH Guidance Sheet MW0 HSE 2006 www.hse.gov.uk/pubns/guidance/mw00.pdf

Fluid control: skin risks COSHH Guidance Sheet MW2 HSE 2015 www.hse.gov.uk/pubns/guidance/mw02.pdf

Sump cleaning: water-mix fluids COSHH Guidance Sheet MW3 HSE 2015 www.hse.gov.uk/pubns/guidance/mw03.pdf

Sump cleaning: neat oils COSHH Guidance Sheet MW4 HSE 2015 www.hse.gov.uk/pubns/guidance/mw04.pdf

Managing sumps and bacterial contamination COSHH Guidance Sheet MW5 HSE 2015 www.hse.gov.uk/pubns/guidance/mw05.pdf

Further information

Health surveillance web page: www.hse.gov.uk/health-surveillance/index.htm

Controlling airborne contaminants at work: A guide to local exhaust ventilation (LEV) HSG258 HSE Books 2011 www.hse.gov.uk/pubns/books/hsg258.htm

Working safely with metalworking fluids: A guide for employees Leaflet INDG365(rev1) HSE 2013 www.hse.gov.uk/pubns/indg365.pdf

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, or to report inconsistencies or inaccuracies in this guidance, 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.

Employee checklist

- Are you clear about the procedures for doing the job?
- Always follow the standard operating procedure.
- Is the LEV switched on and working properly?
- Look for signs of leaks, wear and damage to LEV systems before every job.
- If you find any problems tell your supervisor. Don't just carry on working.
- Co-operate with health surveillance.
- Tell your works nurse, doctor or supervisor about any breathing problems.

© Crown copyright If you wish to reuse this information visit www.hse.gov.uk/copyright.htm for details. First published 09/16