

# MW1

## COSHH essentials for machining with metalworking fluids



This information will help employers (including the self-employed) comply with the Control of Substances Hazardous to Health

Regulations 2002 (COSHH), as amended, to control exposure and protect workers' health.

It is also useful for trade union safety representatives.

Metalworking fluid mists can cause lung diseases such as asthma.

This sheet describes good practice using engineering controls to reduce exposure to mists.

It covers the points you need to follow to reduce exposure.

It is important to follow all the points, or use equally effective measures.

### Main points

- Inhalation of mist can cause asthma and other lung diseases.
- Keep exposure low using all the controls in this sheet.
- Make sure all the controls work.
- Health surveillance for asthma is usually needed. See sheet G402.

See [www.hse.gov.uk/metalworking](http://www.hse.gov.uk/metalworking).

# Mist control: Inhalation risks

## Control approach 2 Engineering control

### Access and premises

- ✓ Provide clean facilities for washing and taking refreshment, away from all machining activities.

### Equipment

- ✓ Can you prevent exposure, for example by dry machining?
- ✓ Talk to your supplier about using less hazardous and/or low misting fluids.
- ✓ Can you 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 mist extraction. On enclosed machines use a time delay between the machine stopping and opening the doors.
- ✓ You need an inward air speed of at least 0.5 metres per second into enclosed machine openings.
- ✓ Fit a manometer, pressure gauge or tell-tale to show that the extraction 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. Check the HSE website - see 'Useful links'.

**Caution: Don't alter, add or remove extraction without specialist advice. See sheet G406.**

### Maintenance, examination and testing

- ✓ Keep all equipment in effective and efficient working order, in accordance with the manufacturer's instructions.

### Mist extraction systems

- ✓ Daily, look for signs of damage to ducting and fans. Noisy or vibrating fans can indicate a problem.
- ✓ At least once a week, check that the extraction system and gauges work properly.
- ✓ You need to know the manufacturer's specifications to check extraction performance.
- ✓ If this information isn't available, hire a competent ventilation engineer to determine the performance needed for effective control.

- ✓ Get a competent ventilation engineer to examine the extraction thoroughly and test its performance at least once every 14 months. See the HSE publication HSG54 - see 'Further information'.
- ✓ Keep records of all examinations and tests for at least five years.

#### *Fluid quality*

- ✓ See sheet MW5.
- ✓ Check water-mix fluids for bacteria. Dip slide testing once a week is one way of doing this.

#### **Personal protective equipment (PPE)**

##### *Respiratory protective equipment (RPE)*

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

#### **Health surveillance**

- ✓ There is a chance of asthma or other lung diseases developing wherever mists occur. Health surveillance is needed. See sheet G402.
- ✓ Consult an occupational health professional - see 'Useful links'.

#### **Cleaning and housekeeping**

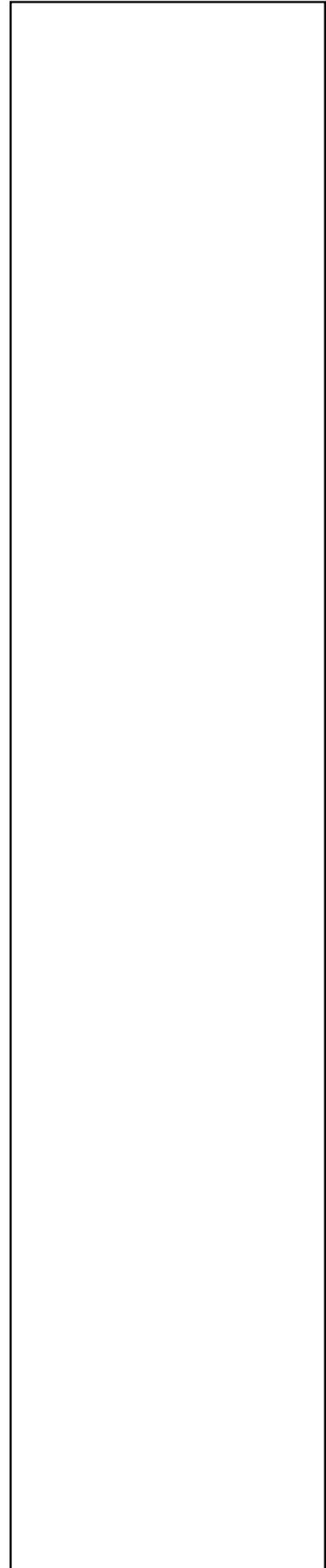
- ✓ Dispose of spilt fluid safely. Returning it to the machine contaminates the system and reduces the fluid's operational life.
- ✓ See sheet MW3 for cleaning water-mix sumps.
- ✓ See sheet MW4 for cleaning oil-based fluid sumps.
- ✓ Use a suction device to clean away excess fluid and swarf from machined parts. Never use compressed air.

#### **Training and supervision**

- ✓ Tell workers about the risks of lung disease.
- ✓ Working in the right way and using the controls correctly is important for exposure control. Train and supervise workers. See sheet MW0.

#### **Further information**

- *Maintenance, examination and testing of local exhaust ventilation* HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *Working safely with metalworking fluids: A guide for employees* Leaflet INDG365 HSE 2006 Web only version available at [hse.gov.uk/pubns/indg365.pdf](http://hse.gov.uk/pubns/indg365.pdf)



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### Useful links

- HSE priced and free publications are available from HSE Books  
Tel: 01787 881165 Website: [www.hsebooks.co.uk](http://www.hsebooks.co.uk).
- See [www.hse.gov.uk/metalworking](http://www.hse.gov.uk/metalworking).
- For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Textphone: 0845 408 9577 e-mail: [hse.infoline@natbrit.com](mailto:hse.infoline@natbrit.com).
- Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at [www.bohs.org](http://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](http://www.nhsplus.nhs.uk).

### Employee checklist

- Always follow the standard operating procedure.
- Is the extraction switched on and working properly?
- Look for signs of leaks, wear and damage.
- 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.

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.