

MW3

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 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.

Sump cleaning: water-mix fluids

Control approach S **Respiratory protective equipment (RPE)** and **Harm via skin or eye contact**

What this sheet covers

This sheet describes good control practice to reduce inhalation of metalworking fluid mist and contact with the skin during sump cleaning where water-mix fluids have been used.

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

Hazards

- ✓ Inhalation of metalworking fluid mist can cause lung diseases, such as occupational asthma and occupational hypersensitivity pneumonitis.
- ✓ Skin contact with metalworking fluids can cause dermatitis.

Access to work area

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

Equipment and procedures

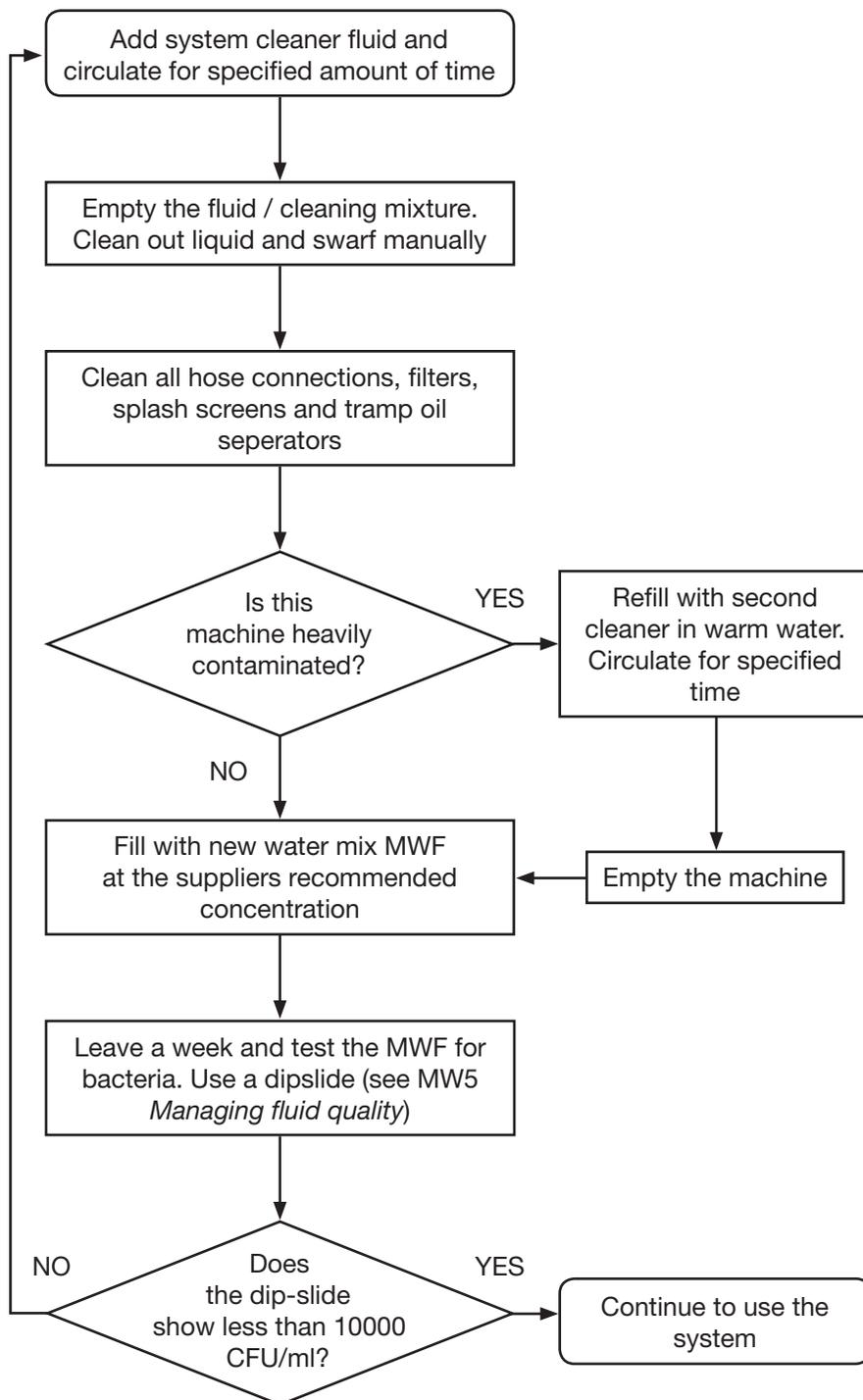
- ✓ Decide how often you need to clean your system. The frequency will depend on a number of factors including visual inspection and monitoring results. Discuss this with your fluid supplier.
- ✓ If possible, prevent skin contact. If you cannot prevent skin contact, can you limit it?
- ✓ Provide equipment to remove and replace sump fluids with minimum spillage, eg wet vacuum. Ensure that the sump is cleaned before adding fresh MWFs.
- ✓ Avoid the use of high-pressure water hoses for sump cleaning where practicable.
- ✓ Keep absorbent material to hand in case of spillages.
- ✓ Follow your supplier's guidelines for sump cleaning as well as this sheet.

Caution: Don't remove swarf and fines from the sump by hand. Use suitable tools, eg brushes and shovels, and wear suitable cut-resistant protective gloves to prevent injury.

- ✓ Cleaning a large enclosed sump or underfloor tank may create a confined space risk. Ensure you have assessed the risk and put in place measures such as a permit to work system.

Caution: Before carrying out work in confined spaces refer to the HSE guidance - *Safe work in confined spaces (L101)*.

- ✓ Check your supplier's recommendation of system cleaner and circulation times.
- ✓ Follow the steps shown in the flow chart as the procedure for sump cleaning:



Respiratory protective equipment (RPE)

- ✓ RPE is required if you are creating a mist, eg when using a high pressure water hose.
- ✓ Provide RPE with a UK Standard Assigned Protection Factor (APF) of at least 20, eg FFP3 or powered TH2 (see sheet R3 UK Standard Assigned Protection Factor 20 (APF20)).
- ✓ If RPE is required for extended periods, eg longer than 1 hour continuously, use powered respirators or breathing apparatus.
- ✓ Fit testing is required for RPE with a tight-fitting face seal.
- ✓ Workers wearing tight-fitting RPE must be clean shaven, trained how to fit it properly and how to look after it.
- ✓ Tell workers to discard disposable RPE at the end of the shift, or sooner if their RPE becomes blocked.
- ✓ Change the filters on respirators in accordance with manufacturers' recommendations and if:
 - the shelf-life expiry date has passed;
 - they are damaged or visibly contaminated; and
 - they become harder to breathe through.
- ✓ Examine and test non-disposable RPE thoroughly at least once every month and record this.
- ✓ Tell workers to check RPE is working properly before every use.
- ✓ Keep RPE clean and store it in a clean place.
- ✓ If there is a risk of a confined space, you must select air-fed RPE.
Caution: Before carrying out work in confined spaces refer to the HSE guidance - *Safe work in confined spaces (L101)*.
- ✓ Check the quality of the air supply to airline breathing apparatus at least every three months and more often when the quality of air cannot be assured.
- ✓ Visually check the compressed airlines for signs of damage before each use.

Personal protective equipment (PPE)

- ✓ Ask your PPE supplier to advise on suitable protective equipment for work with MWFs.
- ✓ Provide suitable gloves. Use thicker gloves which provide protection from chemical and mechanical hazards, but only when machinery is switched off.
- ✓ Make suitable arrangements for maintenance, storage and replacement of PPE.
- ✓ Workers should replace gloves at recommended intervals, and discard damaged gloves immediately.
- ✓ Provide eye protection - goggles or safety glasses.
- ✓ Provide overalls and make sure forearms are covered.
- ✓ Ensure contaminated overalls are laundered before re-use.
- ✓ Use a contract laundry or a suitable equivalent to wash work clothing.

Personal decontamination and skin care

- ✓ Remove clothing contaminated with MWF immediately to reduce skin contact.
- ✓ Wash hands after contact with MWF. Provide warm water, mild skin cleansers, and soft paper or fabric towels for drying. Avoid abrasive cleansers.
- ✓ Provide pre-work creams, which will make it easier to wash dirt from the skin.
- ✓ Provide after-work creams to restore the natural moisture content of the skin.

Caution: 'Barrier creams' are not 'liquid gloves' and do not provide a full barrier.

Cleaning and housekeeping

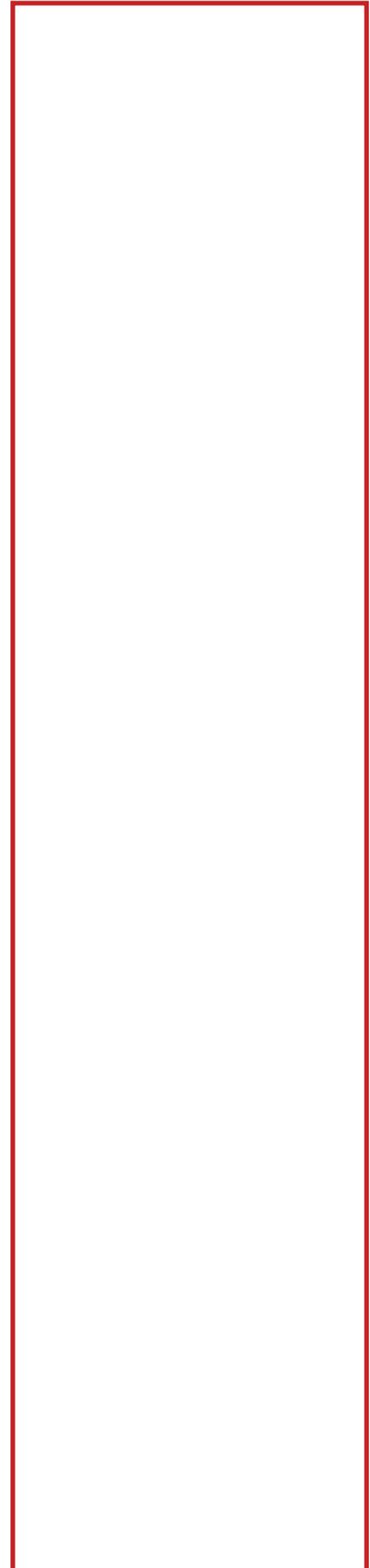
- ✓ Deal with spills immediately. Ensure leaks can be contained. Use a vacuum system and soak up residues with suitable absorbent materials. Take advice from your fluid supplier.
- ✓ Dispose of spilt MWF safely. Returning it to the machine contaminates the system and reduces the operational life of the fluid.
- ✓ Provide clean facilities for washing and taking refreshment, away from all machining activities.

Health surveillance

- ✓ Provide health surveillance where there is the potential for workers to regularly inhale MWF mists and there is a reasonable likelihood that asthma may develop (see sheet G402 *Health surveillance for occupational asthma*, for further advice).
- ✓ Provide health surveillance for dermatitis where there is a reasonable likelihood that dermatitis may occur in your workplace (see sheet G403 *Health surveillance for occupational dermatitis*, for further advice).

Training and supervision

- ✓ Tell workers about the hazards associated with their work and how to recognise the early signs of asthma, occupational hypersensitivity pneumonitis and dermatitis
- ✓ Provide workers with training on:
 - working safely with hazardous substances;
 - when and how to use controls, including how to put on and take off gloves correctly;
 - how to check controls are working; and
 - what to do if something goes wrong.
- ✓ Provide supervision – ensure that safe work procedures are followed.
- ✓ Training records are helpful to demonstrate training has taken place.
- ✓ Involve managers and supervisors in health and safety training.



Essential information

MW0 *Advice for managers*

MW1 *CNC machining*

MW2 *Control of skin risks during machining*

MW4 *Sump cleaning: neat oils*

MW5 *Managing fluid quality*

G402 *Health surveillance for occupational asthma*

G403 *Health surveillance for occupational dermatitis*

R3 *UK Standard Assigned Protection Factor 20 (APF20)*

Further information

Good practice guide for safe handling and disposal of metalworking fluids UKLA 2018 www.ukla.org.uk/wp-content/uploads/UKLA-HSE-Good-Practice-Guide-for-Safe-Handling-and-Disposal-of-Metalworking-Fluids.pdf

Working safely with metalworking fluids: A guide for employees INDG365 HSE 2011 www.hse.gov.uk/pubns/indg365.pdf

Managing skin exposure risks at work HSG262 HSE 2015 www.hse.gov.uk/pubns/books/hsg262.htm

How to put on and take off Reusable chemically-resistant gloves www.hse.gov.uk/skin/posters/reusablegloves.pdf

Respiratory protective equipment at work: A practical guide HSG53 (Fourth edition) HSE 2013 www.hse.gov.uk/pubns/books/HSG53.htm

Confined spaces: A brief guide to working safely INDG258 HSE 2013 www.hse.gov.uk/pubns/indg258.pdf

Safe work in confined spaces: Confined Spaces Regulations 1997: Approved Code of Practice and guidance L101 HSE 2015 www.hse.gov.uk/pubns/priced/l101.pdf

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

British Occupational Hygiene Society (BOHS) www.bohs.org/find-expertise/find-an-occupational-hygienist/

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

For information about health and safety visit <https://books.hse.gov.uk> or <http://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@wlt.com.

Employee checklist

- Do you understand the health hazards associated with your work?
- Always follow the standard operating procedure.
- If you notice an unusual odour or appearance to the MWF inform your supervisor.
- Make sure you know what to do if there is a fluid spill.
- Use, maintain and store your PPE in accordance with instructions.
- Wash your hands before eating, drinking, smoking or using the toilet.
- Co-operate with health surveillance.