

Hazards of Metalworking Fluids

What are metalworking fluids?

Metalworking fluids are used to cool, lubricate and reduce corrosion during machining operations. The four kinds of metalworking fluids are

1. straight oils
2. water-based oils
3. synthetic fluids
4. semi-synthetic fluids

Only straight oils are not mixed with water before use.

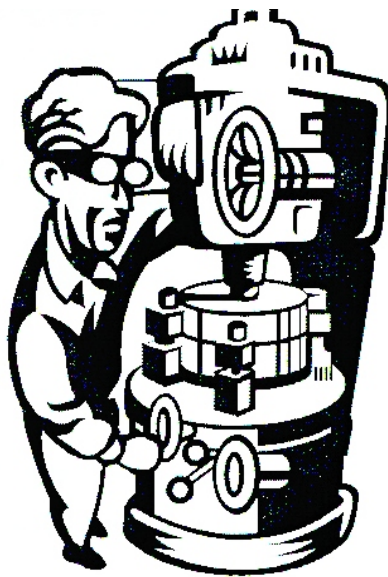
Metalworking fluids are complex mixtures and some of the ingredients can be toxic. Without proper care, bacteria and mould can start growing inside these mixtures, especially when the fluid has been reused over a long time. As well, heavy metals can build up and become more concentrated over time.

Can metalworking fluids cause health problems?

Health problems can occur if your skin comes in contact with the fluid or mist, or if you breathe in the mist. The severity of the health problem often depends on what is in the fluid, the way you come into contact with

the fluid, and for how long you are in contact with it.

Skin contact happens if you dip your hands into the fluid or handle objects covered with the fluid, without wearing gloves. Fluids can also splash on you if machines are not properly enclosed. When there is skin contact with the product, your skin may become red



How can you tell if the fluid is not safe?

Metalworking fluids may not be safe to use if you notice any of the following:

- ✓ a change in its appearance
- ✓ foul smell
- ✓ floating matter on the surface
- ✓ excessive foam
- ✓ dirty machines or trenches
- ✓ workers with skin irritation
- ✓ workers with breathing problems

especially if the fluid is water-based, synthetic or semi-synthetic. Pimples may occur on body parts that have been in contact with straight oils.

The mist of metalworking fluids can cause irritation to your eyes, nose, throat and lungs. You may experience symptoms such as shortness of breath, wheezing or coughing. If you already have a disease such as asthma or bronchitis, it may become worse when you are exposed to metalworking fluids.

Some studies have found a relationship between exposure to metalworking fluids and a variety of cancers. These cancers may not become evident until many years from the time of exposure.

What is the best way to protect workers?

Employers are responsible to provide a safe and healthy environment for their workers under the *Workplace Safety and Health Act*. **Limiting the amount of metalworking fluids workers are exposed to is the best way to protect them.**

Some ways to do this are:

- Select new equipment that encloses and ventilates the mist directly to the outside when machining tasks use metalworking fluids.
- Adapt (enclose and ventilate) existing equipment to minimize the release of mist.
- Prevent openings in the enclosure so that the fluid does not escape.
- Provide splash guards to prevent fluid from spilling onto the ground.

What else should your employer do?

In addition to limiting exposure to metalworking fluids, employers should also do the following:

- Select a person to be responsible for all aspects of metalworking fluid use in the workplace.
- Obtain Material Safety Data Sheets (MSDSs) from the supplier. These provide information on how to handle the products safely. Find out if the metalworking fluids are part of a *Product Stewardship Program*. Some suppliers can provide both detailed health and safety information, and services about their products.

- Provide training on the safe use, storage and disposal of metalworking fluids before workers begin using them. Straight oils can ignite so workers must be trained to deal safely with the risk of fire.
- Test the air to determine if there are harmful levels of metalworking fluids in the workplace.
- Provide appropriate gloves, aprons, eye protection and respirators if enclosures and exhaust ventilation are not enough to keep exposure to fluids within safe limits.
- Safely dispose of the used products according to government regulations.

What can you do?

To reduce the chance of eye, skin and respiratory irritation caused by metalworking fluids you can:

- Wear face shields or goggles, protective sleeves, aprons, trousers and caps as needed.
- Wear respirators during tasks that may expose you to high concentrations of metalworking fluid mist. However, respirators should not be the main way to control exposures.
- Limit the use of barrier creams to tasks where gloves cannot be worn safely.
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- Change your work clothing if you get metalworking fluid on your clothes during the work shift. Water will evaporate from clothing soaked with water-based metalworking fluids and leave behind a concentrated residue. Make sure that stained work clothing is washed.
- Change from your work clothes into street clothes before leaving work.
- Wear clean work clothing for each shift.
- Report any health symptoms such as skin irritation or breathing problems to your doctor. Tell your doctor you work with metalworking fluids!
- Talk to your workplace safety and health committee or representative if you have any questions or concerns.

For more information contact the

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102-275 Broadway
Winnipeg, Manitoba R3C 4M6
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or

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