

The **microlubrication** is a mean to bring an **accurate quantity** of a liquid in a process. It's also named **MQL, Minimum Quantity Lubrication** or **microspraying**

Use

The microlubrication (MQL) or microspraying is used to proceed operations as:

- machining (sawing, drilling, deep drilling tapping, milling, broaching, turning)
- cutting and stamping (sheet metal lubrication, lubrication inside the tool)
- forming (tube bending, diameter reduction)
- forging and molding
- anticorrosion protection
- lubrication of conveyors
- lubrication of machine parts
- assembling, fitting of rubber parts
- marking
- sticking
- food processing

Advantages

Reliable and adjustable, the microlubrication allows to reduce the consumption of lubricant to the required value.

The cost reduction of machining operation may be very important:

- oil-in-water suppression
- suppression of power plant of watering
- suppression of machine chip treatment
- The cutting performances and the useful life of the tools are often increased.

The lubricant consumption reduction may be very important in cutting and stamping operations.

A powerful microlubrication device allow to uses a wide range of lubricant.

A well configured MQL device brings the lubricant at the strategic points. So the useful life of the tool is increased.

The working stands are cleaner and the washing operations are reduced or removed.

Technologies

There is an important difference between the microlubrication or microspraying systems and the spraying system.

The flow of a liquid spread by a **spraying** system is adjusted by an **adjustable jet**.

The spraying technology is often used to cover wide areas or when the flow must be important.

It's a **volumetric micropump** which delivers the flow of liquid in the **microlubrication, minimum quantity lubrication, MQL, microspraying** technology. The capacity of the micropump is often adjustable. The flow may be set by the micropump capacity or its rhythm. The flow may be in the range of 77 mm³ to 1.4 litres by hour.

The calibrated liquid quantity may be:

- carried by a tube at a point to soak a felt-tip or to flow drop by drop
- sprayed by a nozzle
- sprayed in the centre of a spindle or in a tube.

A tube or a hose is set between the micropump and the nozzle. It may be:

- a single tube which carries an oil mist. A micropump can feed several nozzles
- coaxial to separately carry out the liquid and the gas. A micropump feeds a nozzle.

In this last case:

- the size of the drop sprayed is adjustable
- the liquid flow of each nozzle is accurate
- **the atmospheric pollution is normally non-existent.** It's exceptional to have to create a mist.

Equipment

These are some links:

- [Microlubrication, minimum quantity lubrication, microspraying, MQL devices](#)
- [Spraying devices](#)
- [Microlubrication nozzles](#)
- [Spraying nozzles](#)