Instructions for the use of coolants

Labelling

- Coolants in general do not have to be labelled. However, if drums or other containers are labelled nevertheless, please note the instructions.
- The supplier is compelled to point out risks regarding the handling of coolants and to give safety advices.

Storage

- Coolants must be stored in such a way that possible leakages cannot reach the ground water.
- Leaked concentrate can be absorbed by using oil absorbents and then be disposed of.
- Extreme temperatures must be avoided (ideal temperature range 12–30 [°C]).
- The storage management has to ensure that a coolant concentrate storage time of 6 months is not exceeded, if possible.

Handling

- When handling concentrate, wear gloves and safety goggles.
- If the concentrate contacts your skin, immediately rinse with a lot of water.
- Keep away from food
- Be aware of supplier instructions and request safety data sheets

Mixing

- Always add the oil into the water, never the other way round!
- Add the concentrate to the water slowly, in a thin stream and while stirring. It is best to use a mixing device.
- Ideally the water and concentrate should have the same temperature.
- Have the water quality checked by the supplier of the coolant.

Monitoring

Regularly check the used emulsion and record the measuring results to:

- prevent downtimes
- prevent unpleasant odours
- increase the sump life
- reduce concentrate costs
- reduce disposal costs.

Please note:
The coolant is an important and valuable resource for the cutting process.
It should be functional at any time and as long as possible.

The following parameters should be monitored:

- Appearance
- Odour
- pH-value

- Concentration (with refractometer)
- Water hardness
- Nitrite content.

For methods and results, please contact your coolant supplier.

MECHANICAL CARE

Foreign substances lead to a physical and microbiological contamination of the used emulsion. Therefore, they should be avoided or removed mechanically regularly.

- Tramp oil (hydraulic /slide way oil)
  Removal via
    - Skimmer
    - Centrifuge
    - Separators

- Solids (Metal abrasion)
  Removal via
    - Filter units
    - Magnetic separators

Please note:
Waste does not belong into the emulsion!

CHEMICAL CARE

In case of adequate maintenance, constant and sufficient concentration and mechanical care, it is generally not necessary to add any additives.
There is the general possibility to increase the sump life of emulsions or to influence characteristics through the use of additives.

Additives, among others:

- Surface-active agents
- Gel preventer
- Anti-foam agent
- Corrosion protection agents
- Biocides

Modern coolants do not contain biocides in the concentrate.
Biocides should only be used purposefully and if required.
Your coolant supplier will be happy to advise you and will tell you in which cases the use of an additive is helpful and efficient and how to use it.

HEALTH AND SAFETY

Follow the instructions of your department, safety engineers and company doctors and protect your health.

Please comply with the following instructions:

- Do **not** throw waste such as food, cigarettes or other waste into the emulsion.
- Characteristic smells of the coolant must be compatible and tolerable. However, avoid intensive contact with emulsion mist.

- Skin contact should be reduced to a technically practicable minimum. **Never** use emulsion to clean your hands.
- Clothes soaked with emulsion (skin contact) must be changed immediately and must be cleaned before wearing them again
- Cleaning cloths and wipes in order to clean the machine parts and workpieces must **not** be used to clean hands and arms. Disposable paper towels should be preferred. Do **not** put soaked cloths into the pockets of pants or jackets.
- Before starting work, apply skin protecting agents to your hands and lower arms. The application must be repeated every time you wash your hands.
- Before breaks and after work, clean your hands and lower arms with warm water and a gentle, non-scrubbing cleaning agent.
- After work, use a skin protection cream for the regeneration of the skin.
- If possible, do **not** eat, drink or smoke at your workplace.

PREPARATION AND DISPOSAL

If the characteristics of the coolant emulsion are no longer sufficient in order to ensure a proper use or if this can only be ensured with a high effort, a replacement of the emulsion is recommended.
A reduction emulsion-waste can reduce costs significantly.
By physically separating the water from the emulsion (ultra filtration), a reduction of the oil containing waste of approx. 90% is possible. The subsequent disposal is linked to legal regulation. Your coolant supplier will be happy to provide advice.