

Basic rules for laboratory work at the Kristineberg Marine Research Station

For your own, others and the environments sake!

Read these instructions before you start your work in the lab!

(It's YOUR responsibility to ensure that you are properly informed, and that you have received the required information/introduction BEFORE you start your work!)

If there are any uncertainties don't hesitate to ask the chemical safety officer

Lab Work

- Make sure that you know where **emergency showers, eye showers** and fire **extinguishers** are found and **how they work**.
- Memorize **evacuation exits** and how to act **in case of emergency**.
- **Eating** and **drinking** is not allowed in the labs!
- **Risk assessment** – "In the planning of laboratory work where one or more dangerous substances are used or formed, a risk assessment shall be made" from Swedish Work Environment Authority regulations.
- Read the **risk assessment thoroughly**, if you need to make a risk assessment; instructions are found in KLARA and at the link below:
https://mi.gu.se/digitalAssets/1760/1760016_1742594_risk_assessment_contents_kmf_190919.pdf
- Make sure that you know where the **sanitation equipment** is found and how it is used.
- When planning experiments it is important to have the waste **handling routines** (see below) in mind. This way we can avoid producing wastes that we cannot get rid of.
- Always use **protective clothing** (lab coat) and covering shoes. **Eye protection** and **gloves** should always be used if there is a risk for being splashed. Make sure not to contaminate door knobs, water taps, handles and phones etc. by wearing dirty gloves.
- **Label all containers** with your name, date, substance name, concentration and symbol. Suitable labels are available from the KLARA system.
- Work with **radioactive substances and microbiological organisms** is regulated separately, see:
https://mi.gu.se/digitalAssets/1760/1760014_1742551_en_radiakarbete_kmf_190904.pdf
https://mi.gu.se/digitalAssets/1760/1760015_1742593_en_mikrobiologilab_kmf_190919.pdf
- Work with **CMR-substances** (Carcinogenic, Mutagenic or toxic for Reproduction) is regulated separately (see link [Arbetsmiljöverket-CMR](#) in Swedish only). A special analysis should be undertaken in order to decide if the substance is substitutable. If the investigation shows that the substance is impossible to replace, a separate risk

assessment is needed and the exposed personnel should be registered in the local register. Contact chemical safety officer for more information.

- **Fume hood/fume bench** should always be used when handling flammable, toxic or corrosive substances. When finished, be sure to close the fume hood/turn off the flow from the bench. At winter an open fume hood consumes enormous amounts of energy!
 - ✓ When working in a fume hood, be sure not to obstruct the air flow by blocking the entryway with instruments and utensils. An open window changes the ventilation pressure balance; this can make fume hoods work improperly. Work with smooth movements to avoid turbulence when using the fume hood.
 - ✓ The fume bench works properly only if the object is kept below 20 cm above the surface. Do not cover more than one third of the surface and leave a 10 cm wide zone at the front to achieve a good protection. Only use the fume bench for handling cold substances.
- In case you **spill chemicals**; clean up immediately to avoid that others are harmed. If necessary, use sanitation equipment, alert others to avoid injuries. Suitable sanitation methods are found in the material safety data sheet (MSDS) for each chemical.
- You are only allowed to use equipment and instruments that you are familiar with. If you are in any way uncertain; do not hesitate to ask the Chemical safety officer or someone in charge of the item. Don't forget to label the equipment with a name-tag.
- For safety reasons, working by yourself with laboratory work, practical or other potentially dangerous tasks, is not allowed after office hours.
- General regulations concerning lab work at Kristineberg should, in applicable parts, also be applied when using the labs on board the **research vessels**. The **captain always has the right to decide** whether a certain substance or activity should be allowed on board, i.e. check with the captain when planning experiments.

Storage

- **All classified substances are to be registered in the KLARA-system for handling of chemicals** upon arrival at Kristineberg. If you are not familiar with these procedures; please contact the chemical safety officer or the reception
- All stored items should be labeled with your name + the name of your group/institution. Poorly labeled things are **thrown as waste!** It's not allowed to store things in the guest-labs.
- **Only store chemicals** in designated areas, no storage in fume hoods. A small amount of waste in a suitable container can be kept in the hood, but ensure that nothing is spilled down the sewage.

A few basic rules concerning chemical storage are found below, more information at: <https://medarbetarportalen.gu.se/service-stod/for-arbetsgivare/arbetsmiljo/arbetsmiljo-a-till-o/kemikalier/>
(Swedish only)

- ✓ Toxic substances should be locked up, but NOT together with flammable goods.
- ✓ Very oxidizing substances should NOT be stored together with flammable substances or organic material.
- ✓ Acids and bases should be stored separated.
- ✓ Cyanides and sulfides should NOT be stored together with acids.

- **Stored samples** should be clearly labeled with owner, date and content. If you are uncertain about what to store where; ask the chemical safety officer. Unlabeled samples will be thrown away. You may lose valuable material; it is also a hazard for the person cleaning out your stuff, other scientists and the environment.
- **Gas bottles** should be stored chained to a trolley in order to simplify evacuation transport in case of fire. Warning signs should always be posted at the door to an area where gas bottles containing flammable or oxidizing gas are stored. If a leak is detected; shut off gas supply, vent fumes from room, restrict access to the area and alert emergency services if the leakage is large. If the gas is cold or liquid – check gas concentration in low grounds.

Waste handling routines

- **The general approach when handling chemicals at Kristineberg is that nothing that differs from normal household waste should be distributed to the sewage or garbage.**
 - **Chemical waste** is collected in a suitable container. Empty bottles and jars are found in the basement across the hall to the room for hazardous and chemical waste (room 035). Label the container with substance name (labels with substance name, symbols and risk phrases are available in the KLARA system) approximate concentration, your name and date. Place it on the designated shelf in the room for hazardous chemical waste.
 - **Do not mix different chemicals** in one container unless you are absolutely sure that it is safe and appropriate from a waste-handling point of view.
 - If you have any doubts about whether a dilute solution or a relatively harmless substance can be poured out in the sea or sent down the drain to the sewage treatment plant; dont hesitate to ask the chemical safety officer. It is always better to be safe than sorry, so if you are uncertain put it in a waste container!
 - **Hazardous waste**, as for example:
 - ✓ **Contaminated sharps** are placed in a special sharps-container (available in room 144). When full, placed in a special yellow box, labeled "riskavfall" (hazardous waste), with an internal plastic bag. Label the box with "contaminated sharps" your name and date.
 - ✓ **Contaminated lab waste**, eg pipette tips, gloves, bench guard paper, empty chemical containers etc; is placed in a special yellow box, labeled "riskavfall, with an internal plastic bag. Label the box with "contaminated lab waste", your name and date and which substances can be found in the box. Boxes are available from the Chemical safety officer.
- Regulations concerning handling and packing of biological waste, contagious waste, GMO-waste, microorganisms and pharmaceuticals are found (in Swedish only) at the link below:
https://medarbetarportalen.gu.se/digitalAssets/1405/1405390_riskavfallsreglery1.pdf
- **Recycling of consumers packaging** (plastic and glass containers) can only be applied to lab containers if they have contained harmless (not classified according to the EU regulations) chemicals, or if you are certain that the container is absolutely clean! For other such containers, that cannot be considered clean; refer to the texts above concerning contaminated lab waste.

If you are responsible for students, guests or others!

Supervisors are obliged to supply the information that is necessary in order to perform the work in a safe manner!

The work must not be started before YOU have given information about; first aid, emergency showers, fire extinguishers, where to find telephone and emergency exits, and (if necessary) have read the risk assessment!

Preparation for supervisors

- Supply legible protocols for lab work and safety routines
- Make sure instructions are available for instruments and other equipment and that they are used properly
- Do you need any special permissions; medical examination, education or registration etc.
- Check if any dangerous substances are used or formed in the work that you are planning; in that case a risk assessment should be performed
- Prepare a sanitation plan; find out how to clean spillage from your substance, and check that there is sanitation equipment available
- Do you have knowledge about what work environment regulations you are to follow
- Inform how to use fume hoods and benches properly

Inform about protection equipment; lab coats, gloves and goggles

Receipt

I have read, and I agree to respect the text "Basic rules for laboratory work at the Kristineberg Marine Research Station".

Date

Signature

Clarification of signature

The receipt is handed in to the Chemical safety officer