

8. APPENDIX 1 – LABORATORY COURSES

When attending a laboratory course, please familiarize yourself with these topics for working in a laboratory.

8.1. GOOD LABORATORY PRACTICE

There is some general rules and guidelines for working in the lab;

- Keep the laboratories tidy.
- Leave jackets and bags outside the laboratory. When not used for teaching purposes you may store items temporarily in the lockers in front of lab 1672-242. There are also lockers available for students in the basement of building 1675.
- Strictly no food or beverage of any kind are allowed in any laboratory.
- We do not recommend wearing jewelry, watches or other accessories.
- Avoid wearing loose clothes or long, free-hanging hair when working in a laboratory.
- Always use a lab coat in the laboratory.
- Wear appropriate footwear for the type of work to be carried out in the lab: If you work with chemicals, closed shoes are important. If you work with heavy items, steel capped shoes are necessary.

Samples and unattended experiments

In connection with laboratory work running over several days or an experience left unattended for some time, all materials, samples etc. must be provided with a message informing

- estimated period of time the experiment will run/occupy the space
- who is responsible
- how to contact the responsible person (e-mail address and mobile number).

Sediment traps

If possible, we use the preparatory laboratories for any dirty work, to avoid contamination of the chemical labs and running analyses.

Most washbasins in the preparatory labs have sediment traps to catch sand etc. The unwanted material is washed into the washbasin and caught in the trap.

Washbasins with sediment traps should be checked regularly and emptied into the black buckets to avoid clogging the drain and flooding the floor. **Never** pour chemicals into the zincs with sediment trap.

Errors, consumables, shortage, loans

Contact a technician immediately, if you

- experience errors on any instrument, regardless of the situation.
- borrow equipment or use the last unit of chemicals etc.
- want to purchase chemicals, gas or glass-/plastware: Ask in advance, some consumables have long delivery time!

Cleaning

When you have finished your job – or leave for the day please clean your work area (eg. table, zinc, scales etc.)

If you have glassware:

- Never leave dirty glassware etc. for the next day.
- Remove labels, tape and other markings when finished.
- Rinse dirty glass and plastic items using regular tap water (green or blue taps, sometimes labelled WPC) and demineralized water (green taps, sometimes labelled WDI or WCC) before placing them in the dishwasher trolley.

8.2. PERSONAL PROTECTIVE EQUIPMENT

Keep yourself informed about which protective equipment is necessary for your situation. You will find information on the different chemicals in the work place description (APB) and the Safety Data Sheet (SDS).

If needed the technologist will show you where the protective equipment and tools are stored and will help you choose gloves, helmets, safety goggles, safety shoes, ear muffs, vests, face shield and dust masks.

Use **gloves** when needed and choose the correct type. Gloves are produced for various purposes and with different sustainabilities. If wearing gloves, you must not touch equipment, door handles etc. used by other people without gloves.

Safety goggles are required if you or other persons working nearby do work requiring goggles.

Always pay attention to work carried out near you.

8.3. WASTE HANDLING

You must learn how to dispose of the waste you produce – typically, electronics, batteries, glass, soil/rock, paper or chemical residues:

- *Soil, rocks and sediments* (and all remains from the sand traps): Use the specially marked container at the car elevator (1674, basement). Note: To be filled only $\frac{3}{4}$! No metal, paper, plastic or other materials allowed in this container!
- *Glass waste*: Discard using the normal waste system: Pack the glassware gently into kitchen towel and put it into a cardboard box, then dump the box in the container in the parking lot. Check all glassware and pipettes for chips, cracks or “stars” before use.

Some of it can (and must) be repaired and should not be discarded. Ask the lab technician in each case.

- *Electronic waste*: Use the bin at the car elevator (1674, basement).
- *Batteries*: Use the station at the elevator in front of the workshops (1674, 1st floor).
- *Material from non-EU countries*: Note that special procedures apply for handling: Waste must be warmed to at least 500 degrees Celsius or use autoclave to neutralize biological remnants.

Special procedures for discarding chemical waste

Always follow the instructions for proper handling of each chemical.

If in doubt, contact Birte Eriksen: 51 44 49 55 / birte.eriksen@geo.au.dk, who is responsible for chemical waste.

8.4. EMERGENCY SITUATIONS

Make you self aware of the emergency and evacuation procedures (see notices around the buildings).

In every laboratory, a list of the 3 most important phone numbers is available:

- Emergency 1-1-2 (police, fire department, ambulance)
- Medical helpline 70 11 31 31 (if you think you need immediate medical attention by a doctor but not need to call an ambulance)
- Poison control 82 12 12 12 (In case of chemical injuries -hotline for guidance - around the clock)

In case of fire

Fire fighting according to the RACE principle:

Rescue people that are in immediate danger. Using eg. fire blankets.

Alarm people in the building (activate the internal alarm) and call 1-1-2, ask for the fire department.

Contain the fire by closing windows and doors.

Extinguish the fire if the fire is small and you feel confident. You can use appropriate fire-fighting equipment (fire blanket, extinguisher). Make sure that you have a safe escape route. Stay away from any fire that involves chemicals or gas flasks, or fires that may develop rapidly!

Use of fire blankets

If no water available, use fire blankets or other cloth material (i.e. a lab coat) to extinguish fires on a person:

- Get the person to lie down (to avoid flames reaching his/her head. Flames go up).

- Pat on the blanket from head down to the legs.
- Remove the blanket immediately when the fire is out. Otherwise the heat cannot get away, and the damage may worsen.

Carbon dioxide extinguisher

Can be used at fires in solvents, oil, technical appliances and electrical installations – NEVER against people!

NB

- Putting water in water-repellent liquids will spread the fire and may cause explosions.
- Mind the risk of suffocation in rooms without ventilation.
- All accidents (also small ones) must be reported to the local health and safety organization.

8.5. PERSONAL INSURANCE

Check that you, if you are student or non-employed PhD, have a personal insurance that covers accidents in the lab or during fieldwork/excursions. Aarhus University insurance ONLY covers staff members (including employed PhD students, emeriti and foreign visiting guests).

Check out the department website dealing with health and safety issues:

<http://geo.medarbejdere.au.dk/en/work-environment/> .