



Laboratory Safety Rules

Institute of Earth Sciences

Status of September 2014

In order to maintain the safe and proper course of laboratory operations, strict compliance with the laboratory safety rules are necessary! In case of infringements a temporary ban on using the lab may be imposed. If laboratory equipment is handled carelessly resulting in damages and costs, the student can be held liable.

The compliance with the lab regulations, the proper protective measures and the laboratory safety are the responsibility of the laboratory assistants and -managers on duty and the tutors during a lecture or in the course of a bachelor- or master thesis. The instructions of the laboratory assistants or tutors must be obeyed unexceptionally.

These laboratory regulations apply to all laboratories at the Institute of Earth Sciences; however, an initial training is required for the use of the mineral separation laboratory (vibrating table, magnetic separator, heavy liquids) as well as the clean-room lab.

Lab Operation Hours

In general, the students can use the laboratory from Monday to Friday between 8 am and 4 pm (regular working time). Exceptions (e.g. weekends, holidays) must be agreed upon between the student concerned and the tutor, the lab-staff and/ or the person in charge on an individual basis. Single-handed lab work is unexceptionally only permitted after a proper training by the lab staff. The lab staff is available for initial training, questions and appointments from Monday to Thursday between 9 am and 2 pm and on Friday between 9 am and 12 o'clock.



General Practices in the Laboratory

- Eating, drinking and smoking, as well as any kinds of pets are unexceptionally forbidden in the laboratory.
- Escape routes and emergency exit doors must not be confined or blocked.
- The entrance doors to the lab must always be closed and must not be kept open with wedges.
- Accident prevention is up to you. Do not count on others!
- In case of unclear working instructions, inform yourself in detail before starting your work - misunderstandings are often the cause for accidents.

Safety

- When working in the lab, a clean white cotton work coat must be worn unexceptionally. The lab coat must not be synthetic (fire hazard!). Depending on the kind of laboratory work, protective glasses, safety shoes and –gloves must be worn obligatorily. The additional safety clothes apply in particular to works in the cutting- or microsection laboratory, at the jaw crusher, as well as works in the elutriation- or chemistry lab.
- Long hair must be tied back. Jewellery, especially on hands or long necklaces must be taken off. All overcoats, jackets, bags and the like must be left at the cloakroom in the hall or at the cloakroom in the bachelor workspace and must not lie around in the lab-rooms.
- Naked flames must be avoided in the vicinity of inflammable liquids. In order to avoid explosions and implosions, the instructions attached to the operational section must be adhered to.



- Glass apparatus must always be put up safely and stress-free. Broken glass can easily cause cutting injuries. Especially when winding up hoses and during the washing procedures, caution is called for.
- As regards the dealing with any kinds of chemicals, the same meticulousness is required as with noxious substances. This calls for clean working, i.e. spilling, smudging and dust deposits (especially in the area of the scales), must be avoided; above all, however, physical contact.
- All works must be carried out with special care. The contact between chemicals and eyes, skin and mucous membranes must be avoided (protective clothing, protective glasses, see above; if necessary safety gloves are handed out by the lab assistants).
- If reagent splashes have got into your eyes, open your eyelids wide and wash the eyes with running water; then rinse them with the help of eye wash bottles for several minutes!
- On principle, chemicals must not be pipetted with the mouth. Use pipetting aid (e.g. Peleusball)
- From the skin (above all the face and hands) chemicals are rinsed off immediately and thoroughly (if necessary for several minutes) with cold water. Rinse out reagents on the clothes with a lot of water. Put off soaked clothing items immediately and remove them from the lab room! (Danger of skin absorption)
- Acid burns and smaller burns are rinsed for long with running water.
- Extinguish inflamed clothes with a fire blanket or the emergency shower (above the lab-exits)! The fire extinguishers are fixed to the door passageways.

In any kind of injury or lab accident, the lab assistant, lab manager or attendant on duty has to be informed at once and without exception.



Pregnancy, diseases and other circumstances

For safety reasons, all female employees and students, who are to carry out lab activities, are obliged to inform the supervisors or course lecturers of the beginning of a pregnancy. (§ 3 (4) MPA). As regards people who are occupationally exposed to radiation (X-ray laboratory), also the radiation protection commissioner has to be informed.

Furthermore, employees and students must notify the supervisors, the radiation protection commissioner or the lab manager of diseases and other circumstances that may endanger themselves or others (epilepsy).

Working in the laboratory and especially in the isotope - / X-ray lab has to be prohibited by the radiation protection commissioner or the lab manager - even if pregnancy, the above mentioned diseases or other circumstances (as mentioned above) are not yet confirmed.

Supervisors, radiation protection commissioners and lab managers are obliged to professional secrecy.

Fire Protection:

In rooms or work spaces, which are classified as easily inflammable or explosive, it is forbidden to use fire or open light (i.e. matches, lighters and candles) or any electric devices (so-called EX-protection). Please note that refrigerators are not intended for storing flammable chemicals. In the vicinity of open flames working with flammable liquids is forbidden, and storage bottles with these liquids must not be deposited there (with the exception of minimum quantities in the course of micro-biological work – after consultation with the lab- /teaching staff).

What to do in the case of a fire: Avoid panic! Report fire! Initiate rescue measures! Fight fire! Administer First Aid!



Workplace and Samples:

- During the work, the workplace should only contain what is necessary for the specific work to be done.
- On principle, the lab-space is to be left in a cleaned and tidy state
- After taking over a lab-space, all lab- and glass devices (see specific inventory list) ought to be locked in the appropriate places.
- Vessels stored in exhaust hoods, drying cabinets or refrigerators must be provided with the name of the user, date and description of the contents.

Laboratory Devices in general

- Scales, photometers, centrifuges, microscopes, water baths and the like must, of course, be dealt with carefully. In case of doubt, a lab assistant or the tutor is to be consulted about the proper handling of a specific lab device.
- Any damage has to be reported immediately and unexceptionally to the lab-/teaching staff or the tutor.
- All devices are to be kept clean and left clean, and they are not to be switched off until their last use.
- It is forbidden to remove any devices and machinery from the lab rooms without consulting the lab staff.
- The workplace is to be left in a clean state. In case of its use for several days or even longer, the workplace must be tidied at the end of each working day.

Scales

- Control the level (any malfunctions must be reported to the lab assistant)
- Watch out for different accuracies and measuring ranges of the scales.

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- The scales must always be kept clean and, when dirty, be cleaned at once.

Platinum Crucibles

When working with the platinum crucible and the platinum dish, utmost care must be taken (see instructions for the preparation of dissolving tablets – only issued by persons in charge)

The platinum crucible as well as the dish are issued by the staff in charge and **must** be returned afterwards. The crucible, the dish and other study tools are always subject to a thorough examination.

Chemicals

- To be kept clean at any rate – never return chemicals once taken into the original bottles.
- After use, cap the bottles with the original lid and remove spilled chemicals correctly and at once.
- Please pay attention to the hazard symbols and related information as regards potential dangers and safety recommendations.

Disposal

- The correct disposal of the accumulated hazardous waste forms part of the specific working papers and lab hand-outs.

Utmost attention must be paid to the labelling (danger classes: Inflammable, Cauterising. Toxic, Warnings and Dangers!)