WESTFÄLISCHE WILHELMS-UNIVERSITÄT MÜNSTER

ILÖK Institut für Landschaftsökologie
Laboratory

Laboratory regulations Institute of landscape ecology

Area of validity	ILÖK-Laboratory Heisenbergstr. 2 Rooms 414, 423-428, 430, 433-435, 440, 442, 523-528, 532-534, 538, 541 ICB Building Mendelstr. 7 Room 180, 208
Laboraty administration	Dr. Tanja Broder Dr. Andreas Malkus
Staff	Ulrike Berning-Mader Madeleine Supper Daniel Brüggemann
Safety advisor	Dr. Andreas Malkus
Radiation protection	Dr. Tanja Broder Prof. Dr. K.-H. Knorr

Important Phone Numbers

Emergency:	**112**
Troubleshooting	Tel. 83 33333
First aid - Ulrike Berning-Mader - Madeleine Supper	 Room 418 Tel. 83 33692 Room 418 Tel. 83 30140
Facility Management - Mrs. Gentz - Mr. Busch	 83 33920 / 0176 18300089 83 32534 / 0176 18300079
Laboraty administration - Dr. Tanja Broder - Dr. Andreas Malkus	 Room 439 Tel. 83 30209 Room 437 Tel. 83 33927
Radiation protection - Dr. Tanja Broder - Prof. Dr. Klaus-Holger Knorr	 Room 439 Tel. 83 30209 Room 436 Tel. 83 30207
Safety advisor - Dr. Andreas Malkus	 Room 437 Tel. 83 33927
Responsible professor - Prof. Dr. Klaus-Holger Knorr	 Room 436 Tel. 83 30207
Director ILÖK - Prof. Dr. K.-H. Knorr	 Room 436 Tel. 83 30207

Laboratory regulations of the ILÖK from Nov. 2021

Introductory remarks

The organisation of work must be such that hazards are avoided or reduced to a minimum. Cleanliness and order are essential for safe working. All instructions and interests of the institute members, working group leaders and project managers vis-à-vis the laboratory are jointly decided and prioritized in coordination with the laboratory management and taking into account all safety-relevant questions and existing capacities. Compliance with the laboratory regulations is the responsibility of every person working in the laboratory. The instructions of the laboratory personnel must be followed. Analytical, laboratory and off-road equipment may only be used after consultation or instruction by the laboratory personnel (superuser). The change of the location of a laboratory instrument must be discussed. The aim is safe, careful and successful work in the laboratory. This requires time and patience. Safety is always our top priority. When handling gaseous, liquid or solid hazardous substances and those that occur as dusts, you must observe special rules of conduct and the observance of certain protective regulations. The handling of substances whose harmlessness is not beyond doubt must be the same as that of hazardous substances. The substances can be absorbed into the human body by inhalation through the lungs, absorption through the skin, mucous membranes and the digestive tract. Hazardous substances Substances or preparations which have at least one of the following danger characteristics: explosive, fire-promoting, highly flammable, highly flammable, flammable, very toxic, toxic, harmful, corrosive, irritant, sensitizing, carcinogenic, toxic for reproduction, mutagenic, dangerous for the environment. In the sense of the CLP Regulation on Classification, Labelling and Packaging of Substances and Mixtures (EC Regulation No. 1272/2008) see below. are substances or mixtures falling into at least one of the following hazard classes: explosive substances/mixtures and products containing explosive, flammable gases, flammable aerosols, oxidizing gases, gases under pressure, flammable liquids, flammable solids, self-reactive substances or mixtures, pyrophoric liquids, pyrophoric solids, self-heating substances or mixtures, substances or mixtures which emit flammable gases upon contact with water, oxidizing liquids, oxidizing solids, organic peroxides, substances or mixtures corrosive to metals, acute toxicity, Skin etching/irritation, severe eye damage/irritation, respiratory or skin sensitization, germ cell mutagenicity, carci-nogenicity, reproductive toxicity, specific target organ toxicity (single exposure), specific target organ toxicity (repeated exposure), risk of aspiration, aquatic hazard, harmful to the ozone layer or other chronically harmful properties from which dangerous or explosive substances or preparations are formed or may be released in use.

Radiation protection

In Rooms subject to radiation protection (424, 425, 426, 527, 528), the respective radiation protection instructions which are available on site at the devices apply. Radiation protection commissioners and thus exclusively authorised to give instructions in radiation protection matters within the scope of their activities are Dr. Tanja Broder and Prof. Dr. Klaus-Holger Knorr. All work in the laboratory must comply with the regulations, guidelines and rules listed here. The principle heard, read and understood applies. The laboratory accepts no liability if the instructions are disregarded.

Since January 20, 2009, the Globally Harmonized System for Classification, Labelling and Packaging of Substances and Mixtures (GHS) in the form of the European CLP Regulation (EC Regulation No. 1272/2008) has been in force. This regulates the classification and labelling of hazardous substances anew and is based on a worldwide classification and labelling system. The CLP Regulation replaces the classification and labelling by the previously valid Substances Directive (Directive 67/548/EEC) on 1 December 2010 and by the previously valid Preparations Directive (Directive 1999/45/EEC) on 1

June 2015. In the transition phase, substances and mixtures may, but do not yet have to, be labelled according to CLP. Substances and mixtures can therefore be classified and labelled in accordance with the CLP Regulation before the end of their respective transition periods. Substances that were purchased before 01.12.2010 and are still labelled according to the Substances Directive may retain this old label until 01.12.2012. Similarly, mixtures acquired before June 1, 2015 and still labelled according to the Preparations Directive may retain this old label until June 1, 2017. In the case of labelling according to the CLP Regulation, no labelling according to the Substances or Preparations Directive may be listed. Therefore, double labelling of substances and mixtures is not permitted at any time.

The conversion to GHS involves extensive changes to the existing labelling system. Manufacturers and users have to abandon the pictograms previously used for hazardous substances, as well as the old known R and S phrases. The old hazardous substance labelling is currently still on the old containers. New containers are already marked according to GHS.

Important: From the use of the first container according to GHS, an adapted operating manual must be issued. The classification according to GHS must be documented in these operating instructions. The use of old and new markings within the same operating instructions is permitted. If the operating instructions have been changed, oral instruction is absoluTely necessary.

The new GHS contains 9 pictograms, 71 hazard statements (H-phrases "Hazard statement") and 135 safety instructions (P-phrases "Precautionary statement").

2. Basic rules

2.1 Coordination, stay, safety instructions and working hours

2.1.1 Regular meetings (usually on Wednesdays at 09:00 Room 455) are held to coordinate and prepare the laboratory work. A time schedule is displayed in the laboratory corridor for an overview and coordination of ongoing work. In order to avoid overlapping and idle times, but also to prepare any necessary measuring instruments, each user must present his laboratory work in good time in the laboratory meeting and, after consultation, enter his laboratory work in the schedule.

2.1.2 For safety reasons, all work must be agreed and discussed in person with the laboratory personnel before starting laboratory activities. In addition to occupational safety, the type, scope and financing of the analyses are also determined.

2.1.3 Only authorised persons are permitted to stay and work in laboratories.

2.1.4 No one is authorised to enter the laboratories (414, 423-428, 430, 433-435, 440, 442, 523-528, 532-534, 538, 541 and in ICB 180, 208), use technical equipment or chemicals without safety instructions. The use of laboratories, technical equipment and chemicals is regulated by special operating instructions. Before starting work and at least once a year thereafter, laboratory personnel must provide instruction to all persons working in the laboratory, drawing their attention to general and specific hazards at the workplace and familiarising themselves with the relevant rules of conduct. This must be documented in writing.

2.1.5 The regular laboratory working hours are Monday to Thursday from 08:00 to 16:00, Friday from 08:00 to 12:00. Special rules must be observed for work outside the times stated above and on public holidays.

2.1.6 Due to limited measuring times on certain equipment or for other reasons, it may also be necessary to work in the laboratory outside opening hours. For safety reasons, work may only be carried out before 8 a.m. on Mondays to Thursdays and after 4 p.m., on Fridays before 8 a.m. and after 12 noon, on Saturdays and Sundays and public holidays after consultation and with the agreement of the laboratory management. The following conditions apply to the use of the laboratory outside opening hours:
At least one other person must be available close to the call. This person must have at least a Bachelor degree and have received an up-to-date safety briefing for the laboratory.
Dangerous work must not be carried out alone.
In the context of risk assessment, it can be examined in individual cases whether additional technical and organisational measures can be taken to permit solo work. If solo work cannot be sufficiently secured, it must not be carried out.

2.2 **General rules of conduct**

2.2.1 Jewellery or clothing such as bracelets, long chains or scarves that can get caught on laboratory objects, as well as sharp-edged rings that can damage gloves, for example, are forbidden in the laboratory for safety reasons. Headphones are also not permitted in the laboratory.

2.2.2 Food, drink, smoking and make-up are prohibited in the laboratory. It is also prohibited to store, store or prepare food.

2.2.3 No activities may be carried out under the influence of alcohol or other drugs.

2.2.4 The doors of laboratories must always be kept closed and must not be locked with wedges (see below). This is necessary for reasons of fire protection and sufficient air exchange in the Room.

2.2.5 Interventions on electrical laboratory equipment and electrical cables may only be carried out by the responsible tradesmen.

2.2.6 Before starting new laboratory work, the laboratory management or the head of the respective working group shall be responsible for determining the hazards and defining the protective measures.

2.2.7 Emergency exits, escape routes, passageways, stairs and access to fire extinguishers, emergency showers, eye wash and first aid facilities must not be obstructed. Unnecessary fire loads must be removed. Blocking and wedging fire doors is not permitted.

2.2.8 In laboratories, the constant wearing of DIN-compliant safety glasses is an absolute obligation. Spectacle wearers must wear optically corrected safety glasses or DIN-compliant safety goggles over their own glasses. Eye protection can exceptionally be dispensed with if the work processes and activities can be safely and permanently prevented from endangering the eyes. This must be documented in the risk assessment.
When wearing contact lenses, there is a fundamental risk of chemicals getting behind the lens and damaging the eye. Contact lens wearers must refrain from wearing lenses in the laboratory and use correction goggles instead.

2.2.9 In principle, protective clothing (laboratory coats) corresponding to the work must be worn in the laboratory. Personal street clothing is not permitted as protective clothing. The body must be covered on arms and legs. Only sturdy, closed and non-slip shoes may be worn. For temporary and permanent employees, personal gowns are procured on request. Students and guests can borrow a coat for the duration of their stay.
When handling (e.g., weighing) mutagenic substances, specially provided protective gowns (blue) are worn, which may only be used for this purpose.
The storage of streetwear (e.g. winter jackets) and other personal items (e.g. backpacks) in the laboratory is prohibited.

2.2.10 Personal protective equipment such as face protection or suitable gloves as specified in the safety instructions and special operating instructions must be used. Skin protection and skin care creams are available in the laboratory.

2.2.11 No laboratory coats and protective gloves may be used in break Rooms, writing workplaces, etc. outside the laboratory. Disposable or chemical protection gloves must be taken off when making phone calls, opening doors of all kinds or when using media taps, etc.

2.2.12 The workplace must be kept tidy and clean. This applies in particular when working with the laboratory mills if increased dust generation occurs. The disposal of hazardous substances on floors must not be left to the cleaning personnel.

2.2.13 Night-time or endurance tests shall be clearly marked. The following minimum information is required:

- Substances used and expected products with hazard designation
- Temperature of reaction and need for cooling
- test duration
- Contact person and Telephone number
- Behaviour in the event of malfunctions (e.g. loss of cooling water, failure of electricity or special gas) and in the event of danger (fire)

2.2.14 If experiments with automatic control of any kind (temperature, gas, water, etc.) are carried out in the absence of the experimenter, the latter shall ensure that no damage to property or personal injury can occur if this control fails.

2.2.15 After opening hours all laboratory doors shall be closed. Users who work in the laboratory outside opening hours (see 1.1.6) must ensure that all laboratory doors are closed, when they leave the laboratory.

2.2.16 For safety reasons, the Rooms in the nearby ICB-Building (climatic chambers/glovebox or wavebasin) can not used alone, as no staff is present there for supervision.

3 General protection and safety instructions

3.1 Manipulation of the safety devices in the laboratories (e.g. digesters) is strictly prohibited.

3.2 Before handling hazardous substances, the user must identify the risk group to which the substance belongs on the basis of the list of dangerous substances and preparations according to § 4 GefStoffV on the basis of safety data sheets or manufacturer or dealer catalogues or with the aid of Internet databases. According to § 20 GefStoffV, operating instructions must be drawn up for these substances.
The identified special dangers and the safety instructions are binding as an integral part of these operating instructions.

3.2 All hazardous substances must be entered in a list of hazardous substances to be updated at least once a year. The EMU's DAMARIS hazardous substances register is available for this purpose. At the same time, the update should be used as an opportunity for a revision of the chemicals inventory.

3.3 Hazardous substances must not be stored or stored in containers which may cause confusion with foodstuffs.

3.4 The availability of chemicals in laboratories shall be limited to what is strictly necessary. Hazardous liquids and containers containing hazardous substances may only be stored in cabinets and shelves so high that they can be safely removed (guideline: eye level of the person removing them).

3.5 In the laboratory, only the quantities of flammable liquids necessary for carrying out the test on the working day may be used. Quantities in excess of this are considered storage and may only be stored in special storage cabinets for hazardous substances. (Deductions not to be used for storage!) The maximum quantities valid according to VbF/TRbF 20 must also be observed here.

3.6 Very toxic and toxic substances must be kept permanently under lock and key. Suitable closure options are available in the laboratory.

3.7 If exposure cannot be excluded, work must always be carried out under the fume cupboard.

3.8 Substances liable to spontaneous combustion shall be stored separaTely from explosive, oxidising and flammable substances in a safe place.

3.9 Flammable liquids may only be stored in refrigerators or freezers whose interior is explosion-proof. Such refrigerators and freezers are marked with a yellow sticker.

3.10 Drying of substances which may generate hazardous or explosive vapours is prohibited in drying cabinets due to the risk of explosion.

3.11 All vessels must be marked in accordance with GefStoffV; large vessels (> 1 litre) must be fully marked. For safety reasons, fragile receptacles with a volume of more than one litre should be avoided. When transporting hazardous substances in fragile containers, a transport container must always be used.

3.12 When handling particularly hazardous substances, a respirator with a suitable filter must be provided at the workplace in accordance with the risk assessment in the event of an accident. An occupational health examination according to G 26.3 is required before starting work.

3.13 Women who handle hazardous substances are particularly at risk during pregnancy. In order to avoid additional risks during pregnancy, laboratory work must be carefully discussed and checked during this time.

3.14 Since the corridors of the building are open, any transport of chemicals, samples or equipment through the corridors must ensure that solid or liquid materials cannot fall down.

4. Handling compressed gases

4.1 Compressed gas cylinders represent a high risk potential. Premises in which compressed gas cylinders are located must be marked with an appropriate symbol.

4.2 Compressed gas cylinders (filled and empty) may only be transported:
with screwed on protective cap,
on bottle transport trolleys with folded safety chain,
in elevators generally not together with persons.

4.3 For fire protection reasons, compressed gas cylinders must always be installed outside the laboratories and the gases supplied to the workstations through technically tight, fixed pipelines. If this cannot be done, pressurized gas cylinders may only be stored under the following conditions:

By accommodation in cabinets according to DIN EN 14470-2
If such protective measures are not possible, compressed gas cylinders must be taken to a safe place after daily work.
Compressed gas cylinders must be secured against falling over by chains, pipe clamps or adjusting devices.

4.4 Gas cylinders with very toxic/toxic, corrosive and carcinogenic gases must be permanently vacuumed (e.g. in a safety cabinet) if they are set up in the laboratory for tests.

4.5 The valves of compressed gas cylinders must be closed after use and after emptying.

5. General protective and safety equipment

5.1 The sashes of the fume cupboards must be kept closed. The functionality of the fume cupboards must be checked regularly. Defective fume cupboards must not be used. The laboratory personnel must be informed immediaTely.

5.2 Everyone shall inform themselves about the location and operation of the emergency shut-off devices for gas and electricity. Interventions in the power, gas, water and ventilation supply may only be carried out by technical service personnel. In case of malfunctions with immediate danger, please inform the malfunction acceptance department at Tel. **33333**. If there is no immediate danger, contact the laboratory personnel. If an emergency stop switch is accidentally operated, one of the caretakers must be informed immediaTely.

5.3 Emergency showers and eye showers must be checked monthly for proper functioning. This shall be documented in an inspection book. The emergency and eye showers are tested by the laboratory personnel.

5.4 Fire extinguishers, extinguishing sand containers and containers for absorbent material must be refilled after each use. Used fire extinguishers and those with a damaged seal must be handed in to the caretakers.

5.5 Floor drains and pelvic siphons must be kept filled with water in order to seal the sewage pipes against the negative pressure prevailing in the laboratory.

5.6 Check the position of the first aid boxes. Since first aid kits must always be provided in their entirety, they must be regularly checked for completeness by the designated first-aiders and supplemented accordingly. First aid material can be requested from Mr. Paßmann Dep. 4.5. When first aid material is removed from the first aid kit, appropriate entries must always be made in the first aid manual for insurance reasons.

5.7 In the event of an accident, Britta Büttner-Koch (see below) Dep. 3.2 must be informed immediaTely. In addition, an accident must be reported by the workgroup leader/internship leader. Forms are available from Mrs. Büttner-Koch. The accident reports will also be forwarded and processed further:

Britta Büttner-Koch Tel.: 0251 83 22185

6. Waste reduction and disposal

6.1 Preference shall be given to reuse and reprocessing, e.g. of solvents, over disposal. Reactive residues, e.g. alkali metals, peroxides, hydrides, Raney nickel, must be properly converted into less hazardous substances. Information on this can be found in the material-related operating instructions and in the disposal regulations for hazardous waste of the University of Münster.

6.2 Collection containers must not be left open.

6.3 Incidental residues which cannot be reused and which, due to their properties, are classified as hazardous waste must be packed, labelled and declared for disposal in accordance with the disposal regulations for hazardous waste. The applicable transport regulations must be observed. They can be found under Transport of Dangerous Goods or can be obtained from the Office for Occupational Safety and Environmental Protection. It must be avoided in all circumstances that substances containing hazardous substances get into the waste water.

Contact person in the laboratory
Mrs **Madeleine Supper** Tel. 83 33692
Contact in the Occupational Safety and Environmental Protection Unit
Mrs. Krikke Tel. 0251 83 25790.

7. Behaviour in dangerous situations

7.1 The laboratory is equipped with a gas warning system which monitors the concentrations of hazardous gases in the ambient air. Even if the values are slightly above or below the standard values, an optical alarm is triggered first, which can be recognised by a **red flashing light** in the laboratories and a red "gas alarm" warning sign above the entrance door. At this early warning stage there is still no acute danger, however, the Room must be left immediaTely, ongoing dangerous attempts should still be stopped, if necessary the gas, electricity or water supply must still be interrupted. At least one person responsible for laboratory safety must be informed to take appropriate action. The affected Room may only be entered again once an independent measurement has established beyond any doubt that the gas concentrations in the Room air no longer exceed the alarm limit.
An **acoustic warning signal** sounds if the gas concentration in a laboratory significantly exceeds or falls below the standard values. In this case the building must be left immediaTely! If necessary, inform other persons when leaving the building and ask them to leave the building.

7.2 In the event of damage to equipment or facilities in the laboratory, the laboratory personnel must be informed immediaTely. It is not permitted to continue to operate defective devices until they have been repaired.

7.3 Obvious safety defects must, if possible, be remedied immediaTely or reported to the person responsible for remedying the defect.

7.4 The following documents are available in the laboratory (Room 423) and must be observed during laboratory work:

- Guidelines for laboratories (BGI 850-0)
- GUV rules: Working safely in laboratories - basics and aids to action
- TRGS 526: Technical rules for hazardous substances: Laboratories
- The general accident prevention regulations (BGV A1 or VBG 1)
- Safety manual of the Westfälische Wilhelms-Universität Münster
- Disposal regulations for chemicals of the WWU Münster
- Fire protection regulations of the Westfälische Wilhelms-Universität Münster
- house rules
- and other special operating instructions in accordance with the Ordinance on Industrial Safety and Hazardous Substances for particularly hazardous substances, groups of substances and activities

7.5 A low gas indicator is installed in the laboratory corridor. This glows permanently blue if one of the connected gas cylinders in the gas cylinder store (next to the building) has only a small reserve. As soon as a new cylinder is connected, the low gas indicator goes off.

7.6 First Aid in the laboratory: **Ulrike Berning-Mader** , **Madeleine Supper** Room 418

7.7 Accident/emergency report

Emergency 112
According to the following scheme:
Where did the accident happen? location
What's the matter? Fire, chemical burns, falls, etc.
What injuries? Type and place on the body
How many injured? quantum
Wait! Never hang up before the rescue directing center ended the conversation: Important

questions to answer.
Who's reporting? give names
If the signal system sounds, the building must be left immediaTely and the assembly points must be visited. Do not block the entrances or access roads for rescue vehicles when leaving the building!

7.8 Keep calm and avoid rash, imprudent action!
Warn persons at risk, if necessary ask them to leave the Rooms. Helping the injured, taking care of your own safety.
Notify the supervisor and/or the person responsible.

7.8 Conduct in case of accidents / first aid
Pay attention to your own safety in all assistance! Make an emergency call (112) as soon as possible. If necessary, call for help by shouting.
Ensure information for the physician. Information on chemicals, if possible with information from the substance-related operating instructions or safety data sheets. A Telephone number of the contact person must be provided for any queries. vomit and chemicals.

7.9 Fire behaviour

The requirements of the fire protection regulations must be observed!
If a fire is not automatically detected, the next fire alarm (on the corridors, in the stairwell) should be activated by breaking the glass and pressing the button and the emergency call should be placed under 112 by Telephone.
When leaving the building, follow the escape route signs and use marked escape routes. The lifts must never be used in the event of fire.
The instructions of the fire brigade must be followed.
Extinguishing attempts only in case of incipient fires. Self-protection must be strictly observed.
Personal protection goes before property protection!!!

8. Coming into force

These laboratory regulations were adopted by the board of the Institute of Landscape Ecology on 3 June 2015 and will enter into force on this date.