*Die Kommentarspalte sollte nach dem Einfügen der notwendigen Änderungen gelöscht werden.*

**General laboratory regulations**

**Operating instructions according to § 14 of the
„Gefahrstoffverordnung”**

Institute:

Group:

Date:

These general laboratory regulations lay down basic behavior in the lab, point out specific dangers, and regulate dealings with hazardous materials. They are obligatory and must be known by and easily accessible to all the employees. The latter should strictly follow and adhere to each of these regulations.

Specifically the following texts concerning laboratory work are also binding and have to be followed:

* **Unfallverhütungsvorschrift (DGUV Vorschrift 1)**
* **working safely in laboratories (DGUV Information 213-850 bzw. TRGS 526)**
* **the use of the chemical database CLAKS is mandatory**

*Alle Bereiche sind für die Erstellung bzw. die Anpassung von Mustern selbst verantwortlich. BAs sind durch Unterschrift in Kraft zu setzen. Sicherheitsdatenblätter sind entweder bereits in CLAKS vorhanden oder können auf „Antrag“ vom Admin eingefügt werden.*

* **Specific instructions for higly toxic materials**
* **Instructions for substance classes**
* **Current safety data sheets**
* **Special instructions for instruments and procedures**
* **Rules for waste disposal**
* **FU Berlin fire protection guidelines**

Special accident prevention rules and instructions or important safety tips should also be considered for various substances used in the laboratories.

*entsprechende Raum-Nr. eintragen*

All these rules, instructions, current safety data sheets, as well as the lists of substances and waste disposal directions, etc., can be found in a **lab safety folder** in room ......................

The lab safety folder provides the general laboratory rules and regulations as well as basic information for the safety instructions which should be held at least once a year.

**Behavior during dangerous situations**

**People should be protected before objects are.**

**Stay calm** and avoid hasty, senseless acts.

**Warn endangered people** and if necessary, get them to evacuate.

A doctor must be visited in case of **injuries**, nausea, skin reactions, as well as contamination with infectious substances.

Secure **information for the doctor**. Use the lab safety folder to prepare the information that must be given to the doctor. (safety data sheet, individual instructions, vial labels, etc.)

The lab safety folder proviedes advices on first aid measures (First Aid Sheet [Merkblatt Erste-Hilfe])

*Zutreffendes auswählen*

**or**

See the first aid notices hanging in the laboratory for first aid measures.

An accident report must be filled out for every accident and the completed form must be sent to the Dienststelle Arbeitssicherheit (DAS). A superior must sign the accident report. The document must be stamped with the institute’s name.

**Emergency number for toxic substances: 19240**

**The following numbers must be immediately called in the case of loss of limb, very serious accidents, or death:**

**- LAGetSi** phone: **9021-5028** fax: 9021-5315

**- Unfallkasse Berlin** phone: **7624-0** fax: 7624-1109

**- Arbeitssicherheit** phone: **838-54495/96** fax: 838-454495

**- Arbeitsmedizinisches Zentrum (AMZ)** der Charité,Campus Benjamin Franklinphone: **450-570775** fax: **450-570971**

**Fire**

If a fire breaks out, the university’s fire protection regulations and the locally established rules are to be paid attention to and followed.

It is particularly important to

1. call the **emergency number** **Tel**. **112** or **55112** or, if appropriate, press the emergency call button.
2. If it is possible to do so without endangering anyone, fight the fire with the available fire extinguishers until the fire department arrives.
3. Have someone meet the fire department vehicles at the street and show the way to the fire.
4. Everyone not involved in extinguishing the fire or first aid measures must leave the endangered area.
5. Keep windows and doors shut.
6. Do not use elevators.
7. Put out fires on clothing with fire extinguishers and/or emergency showers.
8. If possible, warn endangered people in adjoining areas and tell them to evacuate.
9. Inform the responsible group head or class leader.

**If dangerous gases escape**

Close valves and provide good ventilation if it is possible without self- endangerment. Stay away from the source feeding combustible gases and do not use switches for electrical current.

Inform your superior.

**If hazardous liquids escape**

*Raum eintragen*

Binders for hazardous liquids are readily available in room.............

For flammable liquids

Avoid the source of the fire, do not use electrical equipment or switches, and provide ample air ventilation if possible without self endangerment. Soak it up using suction or binders and take it outside or put it in a tightly shutting collective container and inform your superior. See that the chemical waste is disposed of.

For corrosive liquids

Ventilate well, pick up the corrosive liquids with the appropriate binder, and inform your superior. Make sure waste is disposed of.

If you have to leave the area, shut down the apparatus if possible (except for coolants).

**Emergency equipment**

Emergency equipment consists of emergency showers for employees, eye-wash stands, hand fire extinguishers, main switches for electrical current, valves for shutting off gas, first aid kits, etc.

All emergency equipment must be clearly visible, recognizable, and easily accessible. It may not be covered or removed.

All employees must know where the emergency equipment is located and how to use it.

*Prüfdatenblatt erstellen und ggf. in die Labormappe einheften. Einmal jährlich übernimmt die Techn. Abt. die Prüfung.*

Emergency showers, eye-wash stands and safety closets for flameble liquids are to be tested once a month by the employees. They may not being sealed. The examination dates should be listed or marked on the 3-years badge.

*örtl. Stelle und Tel.-Nr. eintragen*

Hand fire extinguishers, which have been used or opened (even including damaged seals), must be immediately exchanged and reported to the appropriate office:....................

First aid kits must be regularly checked for completeness. One of the trained first aid helpers should do this (see the fly-sheet with important telephone numbers). Replacement material can be obtained from UniKat.

**General rules**

**There are special rules to protect youth under 18 and pregnant and nursing mothers.**

**If any of these people work in the lab, the company's doctor, phone no. ……….., must be notified and consulted.**

*entsprechende Punkte auswählen, z. B. Aufent-haltsraum eintragen*

**Eating and drinking** is

 a) not allowed in the lab

allowed

 b) in rooms.......... only

 c) in designated areas only

***- Smoking is prohibited in the laboratory -***

Each person must keep his or her work place **clean** and **orderly**.

**Passages and escape routes** must kept clear. It is forbidden to obstruct them with objects of any sort.

**Fire doors** are to be kept shut. The self-closing mechanism may not be hindered or blocked.

**Unauthorized persons** are not allowed in the labs.

*entsprechende Zeiten einfügen*

There must be a second person present for **hazardous** tasks outside normal work hours (........ to ............).

**Lab coats and shoes**

A lab coat of not easily flammable material (i.e. cotton blends) should be worn. Street clothes may not be kept in the lab. Shorts and skirts are not allowed. Clothing can be stored in room ........... Only closed, non-slippery shoes may be worn.

**Goggles**

Goggles must always be worn in the lab.

(People wearing glasses for vision should have a pair of optically corrective goggles or a pair of larger goggles to wear over their own.)

**Safety hoods**

Should prevent inhalation hazardous substances while working and provide protection from splashing hazardous substances or flying pieces of broken glass.

Safety hoods may only be used if their safety inspection is up to date.

Hoods can only function properly, if the front and side panels are shut. When working in the hood, the front panel should not be opened more than necessary. It must always be kept down enough to protect the head of the user and shut when the work is over.

There should be no more chemicals in the safety hood than necessary for the actual work. Shelves may not be put in hoods.

Harmful substances should be only released, even in the hoods, by accident or while filling an apparatus. Excess reaction gases, vapors, aerosols, or dust, which occur during normal work, should be contained by special measures (i.e. by appropriate arrangements of gas-washing bottles or specific filters).

Substances, which might give off very toxic, toxic, carcinogenic, mutagenic, reprotoxic, harmful, corrosive, or flammable gases, vapors, aerosols, or dust may only be used within hoods.

*entsprechende Zeiten eintragen
oder
falls nicht zutreffend streichen*

In order to save energy the hoods will be shut off from ....... to ........ It is not permitted to work in the hoods, if they are turned off. See the notice on the hoods for when this will be.

If the used air is not being drawn out of the hood, stop working and turn off the apparatus (coolants should be allowed to continue). Inform your superior.

***- It is absolutely forbidden to pipette with your mouth. -***

**Electrical appliances**

Electrical appliances must be inspected before every usage for signs of outer damage.

Defective or damaged appliances may not be used anymore and should be

 reported to the local superior,

 given to the work shop for repair, and,

 if not reparable, disposed of properly,

 (taken off the inventory list)

***-* Repairs should only be done by electrical technicians. *-***

*Prüfturnus auswählen (nach Art der Strapazierung),
Namen oder Werkstatt einsetzen.*

**Inspection of electrical appliances (according to DGUV Vorschrift 4):**

The month and year in which the last inspection took place is shown on the inspection sticker.

Inspection are performed every 6, 12 or………….. months by ........................................

If the date of safety inspection has been exceeded, the electrical appliance must be inspected immediately.

**Drying ovens**

The safety thermostats on drying ovens must always be used. They must be checked regularly for function ability.

**Autoclaves**

Read and pay attention to the information on their usage and possible hazards in the operating instructions.

**Experimental autoclaves**

*Autoklavenraum eintragen*

*Person angeben, die die Prüfungen nach der Druckbehälterverordnung durch-führen darf (Sachkundenachweis)*

Experimental autoclaves must be done in autoclave room ............... Nobody must be in the room during the experiment and a warning must be prominently posted on the door that a test is taking place.

After every usage test autoclaves have to be checked by Mr. / Ms. ............... (expert). Additional importance information can be found in the operating instructions.

*Merkblätter für Autoklaven und Zentrifugen können bei der DAS angefordert werden.*

**Centrifuges**

The accident-prevention regulations DGUV Regel 100-501, chap. 2.11, part 3, and special operating instructions are to be followed.

*Die UVV kann über die Homepage der DAS eingesehen werden.
Beauftragte Person ein-setzen*

The centrifuges should be serviced according to the regulations by...........

A space of at least 30 cm must be kept clear around the centrifuges.

Ultracentrifuges

Watch out for a possibly reduced maximum number of revolutions for the rotary!

**Lasers**

*Laserbeauftragten mit Sachkundenachweis einsetzen.
Die UVV kann von der DAS bezogen werden.*

The laser representative ........... .................. is responsible for safe operation of the laser.

Pay attention to DGUV Vorschrift 12 „Laser radiation“ (Laserstrahlung) and GUV-I 832 (only for information) respectively which should be kept near by, and follow the operating instructions hanging up in the room.

Make sure that unauthorized persons do not enter the room, when the laser is being operated.

**Sterile workbenches**

Please read and follow the information on usage and possible hazards from the operation instructions available.

*Falls eine Prüfung nicht vorgeschrieben ist, streichen.*

Sterile workbenches can only be used if the test sticker is still valid.

**Distillation instruments**

Make the proper arrangements so that the heater automatically turns off, in case of water failure.

Measures to avoid delayed boiling should be taken. Follow the posted instructions.

**Working with evacuated equipment**

For protection from flying pieces of glass resulting from implosion, glass containers should be covered with a protective adhesive film, shrink wrap, basket, or shield.

Work with a rotary evaporator should be likewise done in a closed hood or behind a protective shield.

**Long-term experiments**

**are only permissible as an exception**

All lab experiments need constant supervision. Long-term experiments running without supervision must be set up safely so that no damage or accidents can occur if there is an unexpected energy, water, or other kind of failure. Experiments that run after work hours or overnight should be equipped with a cut-off plan and registered with the superior in charge.

*Vorschriften für besondere Räume sind zu formulieren und hier einzufügen (Stink-, Exräume, Nachtlabore usw)*

**Special rooms**

**Safety instructions**

Attendance at the annual safety instructions is obligatory and should be confirmed by signing the attendance list.

Additionally, each person must inform him or herself where the escape routes and exits are, as well as how to shut off gas, electricity, and water, and where the fire extinguishers are located.

**Compressed-gas cylinders**

If possible, only small pressure cylinders should be used. Their number must be held to a bare minimum.

***Storage is not permitted!***

Compressed-gas cylinders may only be placed in areas where clamps are available. The clamps must be located on the cylinder's upper third, but not near its valve.

The cylinders should only be taken from a permanently installed fixture at the work place for usage. If this is not possible, the superior in charge must approve any other arrangement for their placement.

*Zutreffendes auswählen*

The cylinders must be kept in heat insulated safety closets (**or** brought into a storage room or heat insulated safety closet after usage)

*evtl. besondere örtl. Lösungen eintragen (z. B. Etagenlager)*

*Zutreffendes auswählen*

Compressed-gas cylinders with especially hazardous contents (combustible, especially flammable, very toxic, toxic, carcinogenic, mutagenic, impaired fertility, or any other health hazards) may only be employed in forced ventilation cylinder closets. Small cylinders may be placed in lab hoods for usage during work but must be brought back to the storage/heat insulated closet afterwards.

The air in the experimental setup has to be exhausted as well after using very toxic and toxic gases (work under safety hood).

Compressed-gas cylinders may only be transported with the protective cap screwed on. They may not be transported in elevators together with people.

If the cylinder's valve cannot be opened by hand, it must be returned to storage or the supplier. Do not use pliers or other tools on it.

**Liquid nitrogen**

Pay attention to the operating instructions. Use protection device provided for the body like goggles, face protection, and gloves. When dealing with larger amounts, also when decanting, make sure there is enough ventilation.

Liquid nitrogen may not be transported in elevators together with people.

*Abfallbehälter kennzeichnen*

**Further information**

Broken glass is to be disposed of using the corresponding waste container.

Chipped glass vials should be smoothed along the broken edge by melting.

Equipment must be thoroughly cleaned first before sending it (even if only on the premises) to be repaired.

The user must do a thorough job cleaning containers or equipment before passing them on to other people for cleaning.

Membrane pumps should be used instead of water-jet ones if possible.

**Personnel from outside the laboratory**

*Ansprechpartner festlegen und den Reinigungskräften mitteilen*

Cleaning personnel:

Cleaning personnel may only work in the labs if they have received special instructions in the presence of their foreperson and have been advised on the hazards involved. These instructions should be repeated sufficiently often. Keep in mind that there will be **fluctuation** in the work force.

They are not to clean the laboratory benches or any other lab setups. People who use these areas must clean them themselves.

Cleaning personnel may only clean laboratory rooms under supervision of the laboratory personnel.

*Räume benennen*

Halls, office areas, toilettes, and the rooms ...................... may be cleaned even in the absence of the laboratory personnel.

**or**

*nicht Zutreffendes ist zu streichen*

Cleaning personnel may clean laboratory rooms in the absence of laboratory personnel. This means that after work:

*nur möglich bei deutsch sprechenden Kräften;
geeignete Personen bestimmen, Tel.- Nr. bekannt geben*

all very toxic, toxic, carcinogenic, mutagenic, and reproductively toxic substances must be locked up;

corrosive and inflammable liquids must be stored so that they cannot be knocked over by cleaning personnel (i.e. in cabinets).

*ggf. einfügen; nicht zutreffende Absätze weglassen.****Die erste Lösung wird empfohlen.***

The cleaning personnel must be given one or more phone numbers to call for expert advice for correct behavior in case of an accident.

**or**

if needed, further solutions.

Workmen:

If workmen have a job to do in the laboratory, the lab personnel must free a large area of any chemicals for them to do their work without risk of endangerment. The workmen may not do this themselves. Workmen must be informed of any possible dangers and be sufficiently supervised.

**Handling hazardous substances**

**Hazardous substances identification**

Every container in the laboratory must be clearly marked for its contents.

*Erhältlich über die Homepage der DAS:* [*www.fu-berlin.de/das*](http://www.fu-berlin.de/das)

The identification signs of hazardous substances must include, in addition to the substances, names, their hazard icons and the signal words (Danger, Warning) and the H- and P-phrases. A list of the H- and P-phrases and their explanations must be hung in every laboratory.

*örtliche Lösung auswählen*

Labels with hazard symbols can be obtained from the chemical materials stores or appropriate technical companies or can be printed by using the CLAKS-system (windows client).

*Strahlenschutzbeauftragte auf dem Vorsatzblatt eintragen*

Special regulations, Radiation Protection Ordinance (Strahlenschutzverordnung / StrlSchV), apply to radioactive substances.

*Projektleiter und Beauftragten für Biologische Sicherheit auf dem Vorsatzblatt eintragen*

Special regulations of the Ordinance on Biological Agents at Work (Biostoffverordnung / BioStoffV) apply to biological substances (i.e. infectious ones).

Special regulations, Genetic Engineering Safety Ordinance (Gentechniksicherheitsverordnung / GenTSV), apply for handling genetically modified organisms.

**List of hazardous substances**

All the hazardous substances present in the laboratory must be documented in the CLAKS-system. There should be a constant control of whether any of the hazardous substances can be omitted or substituted for less dangerous ones.

**Storage of hazardous substances in the laboratory**

**Storage** of hazardous substances in the lab is **forbidden**. Only the amount of hazardous substances needed for working may be present in the lab.

Hazardous substances may not be kept in containers which might be confused for food. Containers should be of an appropriate material for storing the corresponding substance.

**Flammable liquids for hand usage** should not be stored in containers able to hold more than 1 liter. The entire amount in each lab should not exceed 10 liters. In case even larger amounts are necessary for working they must be kept in a safety closet.

**Flammable liquids** may not be put innormal refrigerators (including freezer compartments or freezers). If flammable liquids have to be kept cool, then the appliances have to be adapted. The insides of converted refrigerators must be protected from explosions and there must be a blue warning sign on the outside of these refrigerators and freezers. A warning sign with a red edge should be on the outside of non-converted ones.

All substances and preparations which are very toxic, toxic, may cause cancer, may impair genetic damage, may impair fertility are to be kept **under lock and key [Giftschrank]**:

Each laboratory employee must be informed of the special hazards of the substances before he or she uses them.

**Operating instructions**

Pay strict attention to the operating instructions of the substances, which the superior have signed and marked in the list of hazardous substances, and of potentially very hazardous procedures.

**Personal protective equipment**

The safety tips (S-phrases) and given means of protection for the body (i.e. face protectors, goggles and gloves, hand creams) are to be available at all times and used.

*Bezugsquelle angeben*

They can be obtained in room ............................

**Waste reduction and disposal**

The amount of chemicals and solvents used should be kept to a bare minimum as much as possible.

Here it is a matter of "recycling is better than dumping”.

Avoid polluting sewage with water contaminating substances.

Dept. NE 4/NE 41 organizes and carries out waste disposal.

The rules about keeping collected solvents separated from each other must be strictly followed.

*spezielle bzw. weitere Regelungen erfragen und eintragen
nicht Zutreffendes streichen*

In particular, waste-containing liquid halogens must be collected and kept apart from halogen-free liquid waste.

Collective containers can be found in ................................ Wastes can be left off during the hours of ......... to ............

Waste disposal of solvents should occur once a ............. If more than ............ liters of waste accumulate, than disposal must occur more often.

*Zeiten und Menge festlegen*

Dept. NE 4/NE 41 will provide containers for waste disposal. It also has the accompanying forms necessary for waste disposal. The containers must marked as specified in the regulations.

Additional need of or disposal of chemicals must be requested from Dept. NE 4/NE 41.

**Additional advice about special dangers**

*hier bitte unbedingt spezielle örtliche Gegebenheiten berücksichtigen*

Pay attention to these additional tips and rules of behavior:

*Diese allgemeine Labor-ordnung ist vom verantwortlichen Laborleiter zu vervollständigen, zu unterschreiben und im Labor auszuhängen oder in die Laborsicherheitsmappe einzulegen. Sie dient auch als Grundlage bei den regelmäßigen Sicherheitsgesprächen vor Ort.*

 **Laboratory head in charge**: .............................................................

Office telephone number: .............................................................

Private telephone number: .............................................................

 .............................................................
 (date, signature)