

LABORATORY REGULATION

§1 Laboratory use

- 1.1. The laboratories A065 / A069 / A335 / A147a / C311 serve the implementation of practical exercises in the context of student training, to carry out statutory work and internships, as well as R & D projects.
- 1.2. In principle, the laboratories may be used / accessed only by the persons mentioned in § 2.
- 1.3. The time of the beginning and the end of work and absence must be entered independently in the provided list (A065 lab book) of the persons concerned.

§2 Access-authorized persons

- 2.1. Persons who have right to access are:
 - Lab supervisor, lab engineer, project partners of department II: pharmaceutical and chemical engineering
 - Bachelor, Diploma and Master Students of department II: pharmaceutical and chemical engineering
 - Ph. D. students of department II: pharmaceutical and chemical engineering
 - Students in regular practical training, research assistants
 - Visiting scientists
 - Interns
- 2.2 The permission for using the laboratory is basically provided by the lab supervisor.
- 2.3 The accession to the laboratory of visitors is authorized only after prior approval of the lab supervisor / lab engineer.

§3 Working time

- 3.1. Bachelor, Diploma and Master Students as well as Ph. D. students and interns have a main working time from Monday to Friday 9 am – 3 pm.
- 3.2. In absence (also activities in other institutions or homework) the lab supervisor **and** the lab engineer have to be informed by e-mail or phone.
- 3.3. The working time of research assistants and visiting scientists are individual.
- 3.4. Timetables are directed at students during the regular training. A stay outside these hours is not permitted.

§4 Authority

The direction and guidance of the lab supervisor / lab engineer must be followed. The authority of the project staff / custodians is defined by the lab supervisor.

§5 Briefing and safety instruction

- 5.1. An instruction on the safety devices and applicable safety regulations must be carried out before taking up an activity in these laboratories.
- 5.2. The laboratory regulation must be read completely and must be acknowledged with signature in the list provided at the lab supervisor that this laboratory regulation has been read, understood and obeyed.

- 5.3. In the laboratory, the consumption of food and beverages is prohibited.
- 5.4. During practical work, always wear shoes, long leg clothing (trousers), a lab coat and if necessary wear protective clothing and protective goggles. It's necessary to wear a nameplate. This applies all in the 1.1 mentioned laboratories, especially A335.
- 5.5. For direct contact with the products, protective gloves must be worn. Gloves must not be worn outside the laboratory and must be taken off when come in contact with all kinds for instance phone, computer keyboard, doors, tap.
- 5.6. Electrical hardware must **NEVER** been cleaned with water! If necessary use a damp cloth **AFTER** switching off and disconnecting the main plug!

§6 Management of chemical and hazardous substances

- 6.1. Substances of solid, liquid or gaseous form, including mixtures and solutions (so-called: preparations / mixtures), are considered to be hazardous according to the regulation on hazardous substances (Gefahrstoffverordnung-GefStoffV) if they carry:





- a risk of explosion and/or fire
- a direct or indirect impairment of human health
- a threat to the environment.




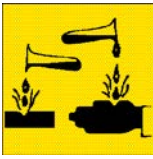








The inclusion of substances in the human body can be done by inhalation, by absorption through the skin, by mucous membranes or by ingestion.

Persons handling with such substances must be informed of their properties, effects, protection measures, behaviours in case of danger and possible first-aid measures. The particular person also needs to know how to dispose the substances properly.

- 6.2. The handling of hazardous substances is to be discussed with and authorized by the lab supervisor.
- 6.3. The use of substances whose harmlessness is not granted needs to be handled in the same way as hazardous substances.
- 6.4. Hazardous substances can belong to one or more of the following property groups. They must be labelled. For some of them, the Hazardous Substances Regulation requires identification and labelling with the symbols listed below:

The new classification and labeling system for chemicals according to GHS hazard pictograms (Gefahrenpiktogramme). By 2015, both types of labeling may occur side by side. Further information about it and about work safety are available at <http://www.beuth-hochschule.de/657/>.

OLD			NEW (GHS)		
Description	Description letter	Symbols	Description	Description coding	GHS-Symbols
Explosive	E		Exploding bomb	GHS01	
Extremely flammable	F+		Flame	GHS02	
Highly flammable	F				

Oxidizing	O		Flame over circle	GHS03	
<i>No equivalent</i>			Gas cylinder	GHS04	
Corrosive	C		Corrosion	GHS05	
Very toxic	T+		Skull and crossbones	GHS06	
Toxic	T				
Harmful	Xn		No direct equivalent		
Irritant	Xi				
<i>No equivalent</i>			Exclamation mark	GHS07	
<i>No equivalent</i>			Health hazard	GHS08	
Dangerous for the environment	N		Environment	GHS09	

- 6.5. The handling of hazardous substances must be preceded by an investigation of materials, safety data sheets, manufacturer, distributor catalogs, or chemical list of laboratories, or based on the determination of their transformation products.
- 6.6. Safety Data Sheets are located in the appropriate folder in office A65 and/or can be downloaded from <http://www.eusdb.de/> and the various manufacturer websites.
- 6.7. When dealing with toxic, very toxic, health hazardous, carcinogenic, corrosive and irritant hazardous substances employment restrictions apply for young people as well as expectant and nursing mothers and women of childbearing age.

§7 Performance of work / internships generally

- 7.1. Working (theses, etc.) in the laboratories is only allowed if a supervisor / contact person is present in the building: Lab supervisor, laboratory engineer or supervisor (-> prior consultation!)
- 7.2. For the presence in the laboratory and the performance of work during the internship, a supervisor / contact person must be **in the laboratory**.
- 7.3. While working /during an internship, ensure a **tidiness and cleanness of working place**. After finishing work, used equipment and chemicals are immediately to be cleaned up and put away.
- 7.4. Working with organic solvents, dust-forming substances, etc. is to be performed under a fume hood (turn on and windshield close!).
- 7.5. For a safe transportation of chemicals/equipment, carrying baskets or trolley must be used.
- 7.6. A stand-alone operation of equipment is permitted only with a previous admission and after reading the corresponding SOP.
- 7.7. The use of the equipment must be documented in the respective logbook, **before use**.
- 7.8. The equipment must be checked before commissioning. Damages or defects of equipment must be reported immediately to the laboratory engineer.
- 7.9. Waste and excess products are disposed in the appropriate pharmaceutical-waste containers. For solids and liquids, separate containers are available
- 7.10. During the internship, bottles with chemicals/substances must be clearly labelled.
- 7.11. If the chemical reservoir is empty or nearly empty, this has to be reported to the laboratory engineer. The empty bottle/containers should not be put back on the shelf. Taking something without permission from the storage is not allowed.
- 7.12. Many of the used materials such as weighing boats, slides, cover glasses, plastic containers, plastic card sheets etc. can be cleaned and used again. Disposal of these materials only after consultation with the lab supervisor or laboratory engineer.
- 7.13. After finishing work / an internship, the working place must be thoroughly cleaned. All used equipment (laboratory glassware, bowls, etc.) are to be thoroughly cleaned (if necessary, hot water and **small amount** of detergent) **and dried**. Captions/labels must be removed **completely**. The equipment is placed properly at the appropriate places and the original state of the training is to be reconstructed; see also suspended images (CRTL/CUTL).
- 7.14. In case the experiments run longer than normal working time (overnight etc.), the following must be properly labelled:
 - What is done here
 - What chemicals are used
 - In what period of time the experiment is run
 - Who is responsible for the experiment
 - How to reach the person in charge (mobile number)

If some equipment / chemicals can or should not be cleared, the user needs to discuss this with the lab supervisor or lab engineer. Also the correct and complete labelling has to happen. . Please also label the substances stored in the refrigerator!

§8 Keys and Key responsibility

- 8.1. Students working on their bachelor or master thesis, Ph. D. students, visitor scientists and interns can possibly receive a separate key for the laboratory (A65) and also possibly for the key box.
- 8.2. Persons with their own key have a special **responsibility**.
- 8.3. Make **always** sure that the laboratory in the absence of people (even if only a short absence such as for toileting, etc.) is completely closed (all doors!). The consultation with persons without personal keys has to be performed before locking the door. This also applies to the rooms A069 / A335 / A147a / C311.
- 8.4. Persons who take a key from the key box have to return the key to their **original place**, immediately after its use.
- 8.5. The keys for the cupboard containing the pharmaceutical agents are only in the possession of the lab supervisor and lab engineer.
- 8.6. After finishing work, it is the **responsibility** of the last person with a personal key to close and check the laboratory A65 (and other laboratory rooms).
- 8.7. All electrical equipment must be switched off. After shutting down the computer, the corresponding power strip/cable has to be turned off, this also applies to all office computers (-> save energy / surge protector).
Exception: In case of properly specified and performed long-term experiments.
- 8.8. The key box must be checked for completeness and completely closed. All the lights are off, **ALL** laboratory doors are completely closed.

§9 Actions in dangerous situations

- 9.1. Upon the occurrence of dangerous situations, for example: fire, leakage of gaseous substances, leakage of hazardous liquids, the following instructions must be performed:
 - Stay calm and avoid hasty, thoughtless action.
 - Warn the endangered person, if necessary, ask to leave the rooms. Follow the principles of first-aid performance.
 - Stop the experiments directly. Turn off gas, electricity and water (do not turn off the cooling water!).
 - Do not use the elevator / lift during dangerous situations.
 - Notify the supervisor and / or lab engineer immediately.
- 9.2. In case of an accident with hazardous liquids that cause injuries, sickness or skin reactions, a doctor must be contacted. The notification of the accident is to be reported in an appropriate form as quickly as possible (within 3 days) and signed, then forwarded to the management.

§10 Principles of proper first-aid performance

PROTECTION OF PERSONS PRIORITY OVER PROTECTION OF PROPERTY!

- 10.1. Deal as quickly as possible to the EMERGENCY call. Follow all assistance to your own safety!
- 10.2. Rescue immediately the wounded person from the danger zone. Do not underestimate the danger (wear disposable gloves, respiratory protection).
- 10.3. If necessary, activate the emergency services. Do not leave an injured person alone until the arrival of the rescue service. The rescue service has to be received at the front door to guide them to the injured.
- 10.4. Extinguish the fire from the burned dress by using a fire extinguisher, also by pouring over it, by wrapping the affected person in blankets or rolling on the ground. Apply cold water (immersion of the limb in a bucket of water or pouring over water) until pain relief. Aseptic coverage of burn wounds.
- 10.5. In case of a contamination with chemicals: remove clothing. Rinse skin. If necessary, use safety shower. Clean uninjured skin with soap and water. For poorly water-soluble substances wash with polyethylene glycol (BASF or Roticlean E from. Roth), then wash-out from skin and rinse with water (no gasoline, or solvents).
- 10.6. In case of eye injuries, rinse eyes, i.e. **with the fixed eye wash**. Wash the injured eye from the inside (nose) outward in spread-eyelid 10 min or longer. Go to an ophthalmic hospital.
- 10.7. Check and observe state of consciousness (response to speech / touch?), Respiration (motion of breathing) and cardiovascular system (pulse, skin color).
- 10.8. In case the injured person is conscious: If necessary, bring the person in a shock position by raising his/her legs by 20-30 degrees (placing the legs on suitable objects).
- 10.9. If the injured person is unconscious and still has sufficient spontaneous breathing, put him/her in the recovery position. If the injured person cannot breath freely, keep the respiratory system free (clearing out the mouth and throat, head stretch over), and do mouth-to-mouth or mouth-to-nose ventilation.
Breathing masks / aids are located in A65 (office compartment) and room A145 (Mr. Thomas` office)
- 10.10. In case of breathing and cardiovascular arrest: Apply CPR (cardiopulmonary resuscitation). Inform the first-aider.
- 10.11. Provide information to the medical doctor (for example, description of the chemicals, if possible also with the information from the GESTIS Bank (material databank), poisoning information, etc.). Take the vomit and chemicals and hand them over to the doctor. Give the information sheets of the substances (e.g. safety data sheets) to the doctor, if available.
- 10.12. In case of **serious injuries**, an immediate and careful transport into a hospital must proceed with the involvement of emergency services or an ambulance.
In case of **minor injuries**, the transport can be done by taxi (costs are reimbursed by the accident insurance).
- 10.13. When you need a doctor because of an accident during working time or on the way to the working place, you have to fill in the accident report form (Unfallanzeige) and send the form to the SI / CFW (Safety and Environmental Engineering) at the Beuth Hochschule.

EMERGENCY NUMBERS

Fire and rescue service, accident	112
Police	110
Toxin Emergency Berlin Emergency call and consultation	Tel.: (030) - 19240 (day and night)
Dr. Anette Böttcher Company Medical Officer BeuthHT	Tel.: (0 30) 45 04 - 25 01 or (0 30) 75 62 - 16 00 House Bauwesen, Room 107
<i>Next Hospitals, doctors:</i>	
Campus Virchow-Klinikum Surgical ward (e.g. in case of accident)	Tel.: (030) 450 552 000 Adress: Mittelallee 3, gateway Südpassage 2
Campus Virchow-Klinikum Internistische Notfallversorgung (z.B. in case of cardiovascular diseases)	Tel.: (030) 450 553 534 Adress: Mittelallee 11, gateway Nordstraße 2
<i>Doctors near the campus:</i>	
Prof. Dr. Norbert Haas Charite-Universitätsmedizin	Tel.: (030) 450 552 012 Campus Virchow-Klinikum Augustenburger Platz 1, 13353 Berlin
Dr. Wolfgang Kunith	Tel.: (030) 453 70 70 Kiautschoustr. 10, 13353 Berlin

§11 Working instructions for research assistants (consortium Prof. Dr. Vollrath), Bachelor, Diploma, Master and Ph.D. Students and interns in the field of pharmaceutical engineering

- 11.1 During the regular practical courses for students, the use of laboratory A065 is restricted. If necessary, consult the lab supervisor or lab engineer.
- 11.2 The use of the laboratories A69, A335, A147a and C311 is possible during the regular practical courses. Necessary equipment and chemicals should be organized before the start of the courses.
- 11.3 The removal of chemical substances from storage, the agent cupboard, the chemicals cupboard and from the solvent cupboard has to be recorded in the logbook.
- 11.4 If substances have to be transferred or divided, it has to be labelled properly in accordance with the legal safety regulation (classification and labelling system for chemicals according to GHS). **Handwritten labels are NOT acceptable.**

- 11.5 Consumable materials have to be ordered early enough. For this purpose, the exact name of the article / chemical, the order number, the quantity / number and the corresponding net price have to be written down as a list and sent to the lab supervisor and the lab engineer in digital form (Excel). Ordering from the suppliers Carl-Roth or VWR is preferred.
- 11.6 All during work obtained samples must be clearly labelled (**content/substance and name of the student**). Each person is responsible for the proper disposal and thorough cleaning of the containers and glassware by the end of their work in the laboratory.
- 11.7 Everyone has to have their own logbook for all work in the **field of pharmaceutical engineering** (consortium Prof. Dr. Vollrath). The logbook must be bound, a ring binder is not allowed. The logbook must always be carried with the person and all data has to be recorded immediately. The results and analysis have to be completely recorded or glued in the logbook. Notes on a different medium are not allowed! (Notepad, Post-it, etc.)
- 11.8 For all chemicals used during a thesis, the Safety Data Sheets must be available or have to be organized, respectively. These must be attached to the logbook and kept in the according folder (a folder for keeping MDS of all substances) in the A065 and digitally archived on the lab computer.
- 11.9 The office area in A65 and the computer / printer / scanner as the same manner as in the laboratory are available for use. The access can be requested.
- 11.10 The printing of documents should be **economical**; not all information from the internet must be printed, mostly saving as a PDF file (print as PDF!) is sufficient. **Private prints are not allowed!** However, exceptions may be authorized by the lab supervisor or lab engineer. **All** print jobs must be documented in the printer logbook.
- 11.11 For all research assistants (consortium Prof. Dr. Vollrath), Bachelor, Diploma, Master and Ph. D. students and interns in **the field of pharmaceutical engineering** the „Special Operating Procedures AG Prof. Dr. Vollrath - pharmaceutical engineering“ applies and could be received from Prof. Dr. Vollrath.

§12 Correspondence

- 12.1 The communication of Bachelor, Diploma, Master and Ph. D. students, interns and research assistants with external institutions has to be copied and sent to the lab supervisor / lab engineer (e.g. cc: e-mail).
- 12.2 Written correspondence should be done via e-mail address of the Beuth University of applied science: ["your name"@beuth-hochschule.de](mailto:your_name@beuth-hochschule.de). If such email address is not available an account can be requested via the user administration of the university computer center.
- 12.3 All emails in **the field of pharmaceutical engineering** have to have the following signature:

Mrs. / Mr. „your name“
Laboratory Chemical and Pharmaceutical Technology
AG Mrs. Prof. Dr. Mont Kumpugdee Vollrath
Beuth University of Applied Science Berlin
department II: Mathematics-Physics-Chemistry
Luxemburger Str.10 , D-13353 Berlin
Tel. 030 4504 xxxx
e-mail: " your name"@beuth-hochschule.de

§13 Concealment

In some cases of thesis or projects a written concealment must be signed by all involved persons.

Berlin, 11. September 2014

gez. Prof. Dr. M. Kumpugdee Vollrath

- Laboratory supervisor -

I have read and understood the laboratory regulations completely. With my signature, I undertake to confirm and obey the regulations:

No	version	First name, last name	Date / signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			