

Laboratory Regulation

BOKU Core Facility MS

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1. Emergency numbers

Fire department	122
Rescue / emergency doctor	144
Euro - emergency call	112
Poisoning information center	+43 1 4064343
Portier	+43 1 47654 37335 (Muthgasse 18, Muthgasse II, EG)

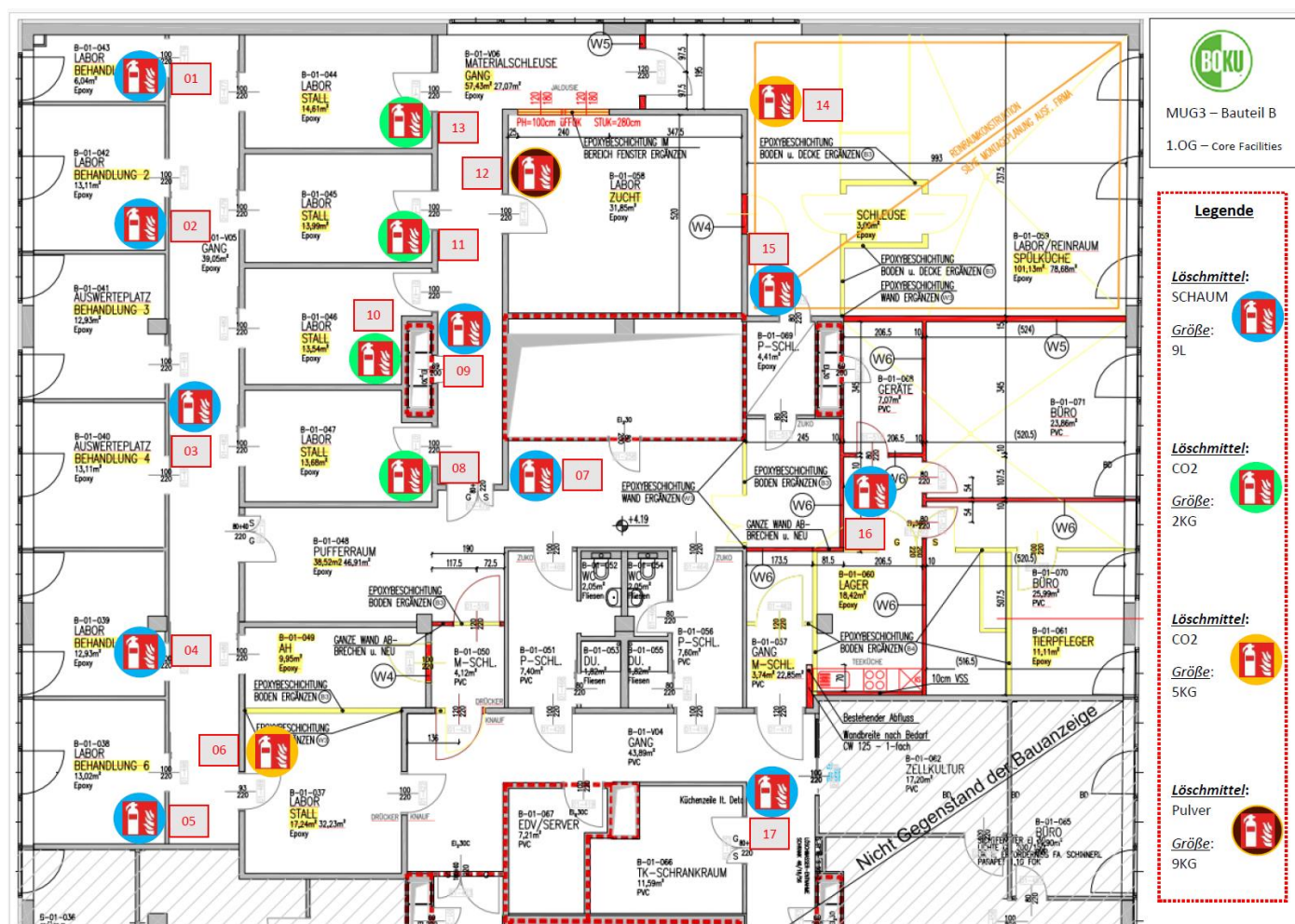
2. Scope of validity

These laboratory regulations are valid in all areas of the BOKU Core Facility Mass Spectrometry (CF MS, see Fig. 1). They apply to all employees, users, trainees, students, interns, guests, external company representatives, service technicians, etc.

All users of the CF MS must read and accept these laboratory regulations/safety guidelines before using the laboratory areas. All users of the CF MS must follow these laboratory regulations/safety guidelines.

The laboratory regulations can be found after creating an account in the PPMS booking system (<https://ppms.eu/boku/start/>) and are also posted in the laboratory areas.

3. Rooms of the BOKU CF MS



4. Safety facilities and the security

Each person working in the laboratory area must be informed about the location and operation of the safety equipment, e.g.

Eyewash und emergency shower



Escape route



Fire-extinguisher



First aid kit



Fire blanket



Fire assembly point
(Plaza Muthgasse III)



- Escape and traffic routes must be kept clear of objects of all kinds under all circumstances. Safety equipment such as emergency showers, eyewashes, first aid kits, fire-extinguishers, etc. must not be obstructed and must be visible and accessible at all times.
- Accidents, near-misses and injuries must be documented. Accident reports should be reported to the BOKU Health and Safety officer.
- Obvious safety deficiencies must be reported immediately to the CF MS personnel. In this case, the work must be interrupted or stopped.

5. General

All users will be instructed about security rules by Core Facility personnel. Unauthorized persons are not permitted to enter the laboratory areas.

Pregnant and nursing persons are not allowed to come into contact with hazardous substances (maternity protection evaluation required).

Eating, drinking and smoking is prohibited in the laboratory areas. Food, drinks and tobacco may not be brought into the laboratory. Working with headphones is also prohibited in the laboratory areas.

The (MS) devices may only be used after training or assignment as an “Autonomous” user in PPMS. The respective operating instructions must be followed.

6. Personal protective equipment (PPE)

As a rule, sturdy, closed shoes must be worn in the laboratory. In addition, depending on the work material or work procedure, protective goggles (corrective goggles are not considered protective goggles!), protective gloves, lab coat and, if necessary, mouth protection (e.g. dust mask) must be used. The PPE can be provided by the CF MS if required.

To prevent accidental carryover of hazardous chemical and biological agents as well as personal exposure, protective gloves must not be used to handle objects that never come into contact with chemicals or biological agents (e.g., laboratory notebook, books, telephone, door handles, etc.). In addition, laboratory clothing and protective equipment must be removed before leaving the laboratory areas. All instrument PCs and user PCs (for data analysis and data transfer) may only be used without gloves.

A permanent obligation to wear PPE applies in the sample preparation rooms and the ICP-MS clean room (B-01-043, B-01-042, B-01-039, B-01-038 and B-01-059) - in all other rooms there is no PPE obligation, except when handling chemicals (e.g. solvent change HPLC).

7. Organization at the workplace and labeling of chemicals/samples.

All persons working in the laboratory must ensure order and cleanliness. The workplace and all communal facilities must be kept in an orderly condition. Chemicals must always be closed and properly labeled. Containers with hazardous substances must be labeled with the appropriate hazard symbols.

Chemicals/samples may be temporarily (max. 3 month) stored in the CF MS refrigerator, freezer (-20°C) or freezer (-80°C). All chemicals/samples must be labeled with the following:

- Product name
- Full name of the user
- Filling date
- In case of potential danger: Hazard note!

Unlabeled chemicals/samples will be discarded by laboratory personnel.

8. Access rules, working at night, weekend and on holiday

Access to the laboratories of the Core Facility MS is regulated by an electronic locking system, only Core Facility staff and some selected, trained BOKU staff have free access to the premises. Therefore, the use of the facilities is only possible after making an appointment/booking the equipment.

In addition, however, there is also the possibility to access the facility outside these normal working hours on weekends and holidays. To ensure the personal safety of the users, working alone in the facility is not permitted.

9. Hazardous work - Hazardous substances labeling, poisons and CMR substances

9.1. Hazardous substances

- Hazardous substances must be stored in accordance with the applicable regulations
- Hazardous work must always be carried out under special protective measures (e.g. under laboratory hood)
- Before working with hazardous substances, all users should be informed about possible dangers and instructed in the appropriate emergency measures.
- When transferring hazardous substances into other containers (e.g. for hand use), these must be labeled (name of hazardous substance, hazard symbol)
- CFMS users must not bring hazardous substances into the CFMS premises. If these are essential for the analyses, exceptions can be granted by CFMS employees, but this must be announced in advance (by email, including a current safety data sheet).

Hazardous work includes all work with substances that have the following properties:

GHS hazard symbols (Hazardous Substances Ordinance - GefStoffV i.V.m. Verordnung EG Nr. 1272/2008 valid from 1.12.2010)

(GHS = Globally Harmonized System of Classification and Labelling of Chemicals)

								
GHS01 Explosive	GHS02 Flammable	GHS03 Oxidizing	GHS04 Compressed gas	GHS05 Corrosive	GHS06 Toxic	GHS07 Harmful	GHS08 Health hazard	GHS09 Environmental hazard

9.2. Poisons and CMR substances

All poisons are chemicals that have dangerous properties, such as a toxic or a very toxic effect on the human or animal organism (hazard symbol H300, H310, H330, H301, H311, H331 und H370). CMR substances are chemicals that exhibit either carcinogenic, mutagenic or reproductive toxicity (H340, H350, H360, H341, H351, H361) as a hazardous property. Due to their acute toxic effects all poisons fall under the Chemical law 1996 and Poisons Order 2000. The purchase of toxic substances is only possible with a toxin purchase license. Each newly acquired poison must be entered into the poison book. It is mandatory to store poisons and CMR chemicals in a lockable cabinet or in the appropriate lockable refrigerator. It is mandatory to record each removal of poisons in the Poisons Book.

Material **Safety Data Sheets** (MSDS) for each toxin or CMR chemical must be available in both electronic and paper form in the laboratory.

Before using a toxin/CMR chemical, users must have read and understood the safety data sheet for the corresponding toxin/CMR substance. In case of questions and uncertainties, users must contact the laboratory personnel. The instructions in the safety data sheet must be followed.

10. Disposal of waste and/or laboratory chemical residues

All types of waste must be properly disposed in accordance with the AA Waste Disposal. When disposing liquids, care must be taken to avoid unintentional chemical reactions when emptying them together (it is prohibited to empty liquids together). Containers with liquids must be clearly labeled and stored in a safe place (collection tray, safety cabinet). The storage of waste canisters in the sink is not permitted. Solvent waste must be collected in the solvent canisters provided for this purpose and these canisters must be disposed separately. Hazardous substances must not be emptied into the sink. Residues or residual solutions containing methanol and heavy metals must be emptied into canisters provided for this purpose and those will be disposed separately by the CF laboratory staff.

Cleaning of non-contaminated glassware and plastic vessels (for multiple use).
Vessels for cleaning must be placed in the appropriate areas.

Disposal of biological waste

Biological waste and anything that has been in contact with biological material must be autoclaved prior to disposal.

11. Operating instructions for working with liquid nitrogen (LN2)

Danger of cold burns and frostbite, especially in poorly ventilated rooms, danger of suffocation due to air displacement during evaporation (decanting!) of the liquid nitrogen! Do not close unpressurized containers tightly! Never leave vessels containing liquid nitrogen open for an unnecessarily long time to avoid oxygen depletion! Prevent water from penetrating!

Filling of liquid nitrogen from the tank and transport through the building only after instruction by a competent person! Pressureless filling!

- The elevator must not be used if liquid nitrogen is transported with it!
- Filling liquid nitrogen dewar vessel: wear protective clothing, safety goggles or a protective shield, leather gloves. Do not use latex gloves!
- Metal objects such as rings, watches, bracelets must be removed while handling liquid nitrogen. When filling, the weight of a larger storage dewar vessel must be taken into account! Boiling nitrogen can splash!
- Check the fill level of the dewar vessel with liquid nitrogen and refill it if necessary. The filling level of the Dewar vessel must not be tested with a hollow rod!

Disposal

Do not pour back, let it evaporate in the open air.

Behavior in case of emergency

Leave the room immediately; if possible provide plenty of fresh air until normal oxygen atmosphere is restored. Remove damaged containers and leaks. In case of leakage/ spillage of liquid nitrogen, leave the room immediately, leave the door open and warn other persons. If possible ensure fresh air supply and prevent any further leakage of liquid nitrogen.

First aid

- In case of body contact with liquid nitrogen, move injured person to a warm place. Do not apply direct heat. Any clothing that obstructs blood flow to the injured skin has to be removed. Pour large amounts of lukewarm water over the affected areas of the skin and then cover loosely with sterile bandages.
- Eye contact: Rinse immediately with water for at least 15 minutes.
- Bring unconscious persons out of the danger zone into fresh air!
- Call an ambulance! Perform chest compressions continuously on unconscious persons with no or no normal breathing until professional helpers take over. If necessary provide artificial respiration!

12. In case of emergency

In case of emergency (e.g. evacuation alarm) work must be stopped immediately. You have to exit via the escape routes to the designated assembly point.

12.1. In case of dangerous situations

In case of dangerous situations, e.g. fire, leakage of gaseous substances or leakage of hazardous liquids, the scene of the accident must be secured immediately. Immediate measures must be taken, including an emergency call if necessary.

The following instructions must be followed:

- Keep calm and act in a considered manner!
- Pay attention to your own safety during all assistance!
- Warn endangered persons, if necessary, request to leave the danger zone. Stop or cancel operating processes immediately!
- In the event of a fire, the fire department must be alerted immediately.
See also the fire protection regulations:
https://boku.ac.at/fileadmin/data/H01000/H10090/H10400/H10490/Sicherheitsfachkraft/Brandschutz/Brandschutzordnung_BIOTECH_Zentrum.pdf
- Fight incipient fires with the fire extinguishers present. The simultaneous use of several extinguishers is more effective than their subsequent use. Because of the risk of re-ignition on hot objects, extinguished fire sources must be monitored until they cool down.
- After eye or skin contact with chemicals, always rinse with plenty of water (e.g. emergency eyewash shower).
- In case of accidents with hazardous substances that have led to an injury, indisposition or skin reaction, a doctor must be consulted.

12.2. Making an emergency call

When making an emergency call, make sure that you include the following information:

- Who reports?
- Where did it happen?
- What happened? (Type of accident, fire, etc.)
- How many injured?

Waiting for further inquiries!

13. First aid

- In all cases of assistance, please pay attention to your own safety. An EMERGENCY CALL must be made as soon as possible!
- Persons in danger must be warned as soon as possible.
- Rescue persons from the danger zone and bring them out into the fresh air.
- Extinguish of clothing fires.
- Check and monitor breathing and circulation.
- Injured persons must not be left alone until the rescue service arrives.