

## Annex 9: Laboratory Rules for BSL 1 and 2

### 1. General

- The rooms are kept neat and tidy. Work surfaces are cleared of any unnecessary equipment and materials. All supplies are stored in designated areas or cabinets.
- Doors and windows are kept shut while working.
- Eating, drinking and keeping beverages and food in laboratory rooms in which work with biological materials is conducted or biological materials are stored is prohibited.
- When working with toxic or carcinogenic materials or with microorganisms, a lab coat or other prescribed protective clothing must be worn in the working areas. Specifically, this means:
  - Clean or change contaminated gloves immediately.
  - When wearing gloves, it should be made certain that no organisms or harmful substances are spread when telephoning, opening all types of doors, using water faucets, etc.
  - Safety glasses with side protectors and, if possible, with upper shields must be worn in working areas with hazardous biological or chemical materials; persons who wear glasses can either use corrected safety glasses or safety goggles that fit over their own glasses. Wearing protective glasses for operations in a safety cabinet is not required.
  - Protective clothing must be removed when leaving the working area.
  - Gloves may not be worn outside the laboratory.
- Do not touch mouth and eyes while working and until after you have thoroughly washed your hands.
- Contact lenses may not be worn.
- Cosmetics may not be used.
- Before leaving the laboratory rooms, hands must be washed (Level 1) / decontaminated (Levels 2 and 3).
- Pipetting by mouth is strictly forbidden. Suitable mechanical pipetting tools are used.
- All procedures should be performed in a way that prevents splashing or the formation of aerosols.
- Safety glasses must be worn while working.
- Work surfaces are cleaned and decontaminated at regular intervals and after use.

- All biological material is marked and kept in appropriate containers. Containers are always kept closed, except for the immediate use of the biological material.
- The use of needles and syringes should be kept to an absolute minimum. They must be properly disposed of after use.
- It is important to avoid the formation of aerosols, as far as possible, during all activities.
- The identity of the microorganisms used is checked if there is a certain probability of contamination by pathogenic organisms or if they are necessary for risk assessment.
- The use and placement of personal possessions (e.g. bags, cell phone, etc.) in working areas should be limited.
- Prior to taking up any activity involving microorganisms, employees must be instructed on their handling (in relation to their previous knowledge) and in relation to the task.
- Pest control must be undertaken periodically.
- Contaminated tools must be autoclaved or disinfected prior to cleaning.
- Waste containing pathogens must be collected as specified in the waste disposal concept and inactivated through autoclaving or disinfection.
- If infectious material is spilled, the contaminated area should be cleared and decontaminated immediately. Incidents in the laboratory which are relevant to safety are reported to the BSO.
- First aid instructions in case of accidents with pathogenic organisms must be immediately at hand in the working area. All accidents are to be reported to the responsible supervisors and the biosafety officer.
- Pregnant and nursing mothers may not handle infectious human pathogenic microorganisms or materials which contain such. Exceptions are explained in the regulations governing maternity protection.
- Prior to working with harmful chemical substances and before conducting experiments in which hazardous materials could possibly be released, the potential risk must be determined and the necessary protective measures taken. For activities with dangerous chemicals, the respective safety precautions listed in the safety datasheets must be followed and the rules of conduct for working with these substances (e.g. ethidium bromide, cytotoxins, etc.) defined precisely in the individual operations manual.
- Work with ill-smelling or toxic substances and highly flammable gases are carried out exclusively under the fume hood. Any additional protective measures required must be taken.
- Cold-store, flammable liquids as well as extremely and highly flammable substances are stored exclusively in refrigerators or freezers, the interior of which is explosion-proof.

- Compressed (gas) bottles must always be secured or chained to prevent them from falling. They may only be transported on carts intended for this purpose.
- When handling radioactive isotopes, the respective laboratory regulations for working with ionizing radiation must be complied with.

## 2. Specific instructions for BSL 1

### Personal protective equipment (PPE):

- A laboratory coat must be worn when working. Do not wear the laboratory coat open.
- Laboratory coats should not be worn in offices, seminar rooms, toilets and in rooms where food and drink is stored or consumed.
- Nitrile gloves must be worn for all activities that involve a risk, such as handling harmful chemicals or radioisotopes, or when hands have cuts or lesions.
- Do not wear gloves outside the laboratory.

### Working with GMO:

- A suitable disinfectant should be used to clean and decontaminate all work surfaces.
- If genetically modified microorganisms are spilled, the contaminated surfaces must be decontaminated.

### Waste

- Biological waste can be disposed of with regular household waste provided that it has NOT been genetically modified, does not concern an animal carcass, is not odor-intensive or nauseating and does not contain any harmful chemicals or radioisotopes.
- Genetically modified (micro)organisms, animal carcasses, material that smells strongly or is particularly nauseating or contains chemicals or radioisotopes must be treated according to the instructions in Document 17-01, Disposal of solid and liquid waste.
- Sharp and pointed objects are disposed of in closed, solid containers.

### Working with harmful chemicals and radioisotopes

- When harmful chemicals or radioisotopes are also involved in working with biological materials, practices to protect against these substances must be respected, in addition to the work practices for biological safety. Generally, the protection against biological material can be combined with the protection against chemicals and radioisotopes. If this is not the case, the protection against harmful chemicals and radioisotopes should be given priority.

### 3. Specific instructions for BSL 2

**Access:**

- Access to the Level 2 rooms is restricted to employees who have received authorization from the group leaders.

**Personal protective equipment (PPE):**

- A laboratory coat must be worn when working. Do not wear the laboratory coat open.
- Wearing laboratory coats is limited to Level 2 rooms. These laboratory coats may not be worn outside Level 2 rooms.
- All activities with Group 2 biological material that could lead to the formation of droplets or aerosols must be conducted in a biological safety cabinet. For activities with Group 2 biological material that cannot be carried out in a biological safety cabinet, authorization from the federal authorities is required (see Document o8-01).
- Nitrile gloves must be worn when handling Group 2 biological material.
- Gloves must be removed prior to leaving Level 2 rooms.
- For specific procedures, it may be advisable to wear two pairs of gloves.
- Gloves must be replaced when they are wet or have been contaminated and when they have holes or tears. Always wash or decontaminate hands before putting on new gloves. Always disinfect hands prior to leaving the laboratory.

**Working practices:**

- Work surfaces must be decontaminated and cleaned at regular intervals and after use with a suitable disinfectant. All work surfaces and objects that have come into contact with biological material or could have must be properly decontaminated.
- The use of sharp and pointed objects should be avoided. Plastic should be used in place of glass.
- If biological material needs to be removed from a Level 2 room, it must be double packed (primary receptacle and a closed, break-proof secondary receptacle); it must also be marked with a biohazard warning label in addition to the normal labeling.

**Waste:**

- All contaminated or potentially contaminated material (Group 2 biological material, glassware, supplies, equipment) must be decontaminated before it leaves Level 2 rooms.
- All waste composed of Group 2 biological material or contaminated with such is to be treated as infectious waste.
- “Sharps” containers with a biohazard warning label are to be used for sharp, pointed objects.

**Working with harmful chemicals and radioisotopes:**

- When harmful chemicals or radioisotopes are also involved in working with Group 2 biological materials, practices to protect against these substances must be respected, in addition to the work practices for Level 2 biological safety. Generally, the protection against biological material can be combined with the protection against chemicals and radioisotopes. If this is not the case, a special risk assessment must be undertaken to determine the most suitable procedure. This should be discussed with the SSHE-BSO.