Content (DTU_Systembiologi)

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If you have further question, contact

Hanne Jakobsen

Keep things tidy
• There must be no overcoats or other inappropriate materials in the laboratories.
• Food, drink and tobacco must not be consumed in the laboratories.
• No part of any measuring instruments or permanent set-ups may be moved.
• It is vital that the workplace is kept clean and tidy every day.
• Any spillage at balances, centrifuges and other apparatus or on tables or floors must be immediately cleaned up.

Working routines

Laboratory work in general

- You must have received instruction in the use of the laboratory and the equipment.
- You must always wear a buttoned lab coat or special working clothes when working in the laboratory.
- Lab coats and working clothes must not be worn in rooms used for relaxation or eating.
- Take note of local instructions for the use of gloves, safety goggles/screens, hearing protection, etc.
- Oral pipetting is not allowed at DTU.
- Avoid the formation of aerosols in your work.

Micro-organisms

- Transport of micro-organisms between laboratories must be in closed containers.
- Disinfectants must be present before work is started (1% Rodalon or 70% ethanol).
- Tables and flow benches must be wiped using 70% ethanol solution both before and after the work is carried out.
- Use gloves when cleaning with Rodalon. Wash your hands with disinfecting soap (1% Perfektan) after direct contact with micro-organisms as well as before breaks and at the end of work.

GMOs

- You may only work with genetically modified (micro-)organisms in laboratories that are classified for such work.
- When GMOs are transported between classified areas, their containers must be identified with green labels.
- Note that these organisms must not be stored outside the classified areas.
- See DTU's general rules for work with GMOs.

Mould

- A number of mould fungi have an unpleasant smell and many of them can damage your health.
- All work with mould fungi must therefore always take place under ventilation.
- Note that some mould fungi easily spread their spores and that special precautions are therefore necessary.

Chemicals

- At DTU, we use the website http://www.kemibrug.dk/ we need data on chemicals, including data sheets, waste groups, labels with data on the chemicals and risk and safety (R & S) statements. All chemicals and substances must be labelled with contents, date, R & S statements, danger symbols, name and section.

- Even if a substance or solution is not covered by the rules governing statutory labelling, it should still be labelled, but with a label with the text "No statutory label required", so that all chemicals and solutions are labelled.

- You can use a program called OzZone to calculate the danger posed by your chemical solutions and how they should be labelled (ask your tutor).

- When disposing of waste, the guidelines in the chemical's datasheet must be followed; if in doubt, ask for instructions.

Organic solvents

- Solvents must only be used under suction systems and with appropriate personal protection.
- Make sure you know the breakthrough times for your chemicals for the gloves you have available.
- Note any special rules for e.g. work with ether, carcinogens, etc.

Apparatus

- No apparatus may be used until you have received instructions in its use.
- Be especially careful when working with centrifuges and autoclaves.
- No part of any measurement instruments or permanent set-ups may be moved without the agreement of the person in charge of the laboratory.

Radioactivity

- No work involving radioactivity may until you have received special instructions.
- See DTU's general information on radioactive substances.

Carcinogens

- Work involving carcinogens must be avoided as far as possible.
- See DTU's guidelines on such work.

Waste

- DTU Bio has a centralised system for chemical waste; it is administered by René Thrane (extension 7514, Room 112, Building 222).

- Waste containing micro-organisms must be autoclaved or have other relevant heat-treatment and/or be taken for destruction in suitable, tightly closed containers.

- Used plastic Petri dishes, plastic bags and the like, plastic syringes (without needles) and pipette points must be placed in brown bags (for hazardous clinical waste).

- Full brown bags should be sealed with metal clips and immediately placed in locked containers located outdoors. Never pour living micro-organisms down drains.

- Glassware, etc. with microbial toxins must be detoxified before they are cleaned. Instructions for this and for the extraction work with these toxins will be found in the laboratory.

- Needles may not be used before you have received a special introduction in their use and disposal.

- Needles, sharp objects and the like should be used as little as possible.

- Immediately after use, they must be placed in special yellow, closed plastic containers.

- To avoid injuries from points, the cap should not be replaced on the needle; dispose of the needle directly in the plastic container.

- All chemical waste must be collected in the 5-litre or 25-litre plastic containers provided and then transported to Kommunekemi for disposal.

- Sort the chemicals in appropriate categories – ask your tutor or René Thrane for advice if you are in doubt.

Transport

Organisms & chemicals

- When moving large quantities of organisms and chemicals, use table, cylinder, sack, autoclave or other trolleys. Use the lift and avoid the stairs during such transport.

Pressure cylinders

- Always use trolleys designed for the purpose when transporting pressure cylinders.
- Always remove manometers before transport and mount any loose safety caps.
- When gasses are transported in lifts, people must not be transported with them.

Liquid nitrogen

- Liquid nitrogen may only be transported in containers with equipped for pressure equalisation.
- Pay special attention to any risk of spillage from the container.
- Never stay in a lift that is transporting liquid nitrogen.
- Always wear suitable gloves and even safety goggles or visors when working with liquid nitrogen.

Lifts

- In addition to the rules given above, you must never use the lifts after working hours.
- Never use the lifts as an escape route in the event of fire.

PERSONAL PROTECTION

Lab coat

- A lab coat or working clothing must always be worn during laboratory work. Note that there are special rules for working in classified laboratories.

Gloves

- Gloves are only used if required by the work.
- Take special care to choose the right gloves, so they don't give you a false sense of security.
- Latex gloves should be avoided.

Safety goggles & screens

- Everybody must have their own safety goggles.
- Use them when there is any risk of spillage or spraying in the eyes or when instructed to do so.
- Note: If you use contact lenses, wear a badge to this effect on your lab coat so they can be taken out in the event of an accident.

Ventilation system

- Make sure you use the right ventilation for the work you are doing.
- Some systems are designed to protect you, while others are designed to protect the organism you are working on.
- Remember to keep your fume cupboard, suction cupboard or flow bench tidy to ensure optimal ventilation.

Working alone

- Working on your own should be avoided – see DTU's rules about working alone.
- If you are working outside normal working hours, make sure you can call DTU's security for assistance – extension 1248 or mobile 23386019.

Tools & resources

Kemibrug http://www.kemibrug.dk/

Download chemical instructions

- Before you use a chemical, download and read the instructions for the chemical from the website Kemibrug website.

Labelling chemicals

- Kemibrug and the OzZone labelling system can be used to create labels for chemicals and solutions.
- ALL chemicals and solutions must be labelled even when marked with "No statutory label required".

Chemical APVs

- Before setting up a new experiment, a chemical APV (risk assessment) must be drawn up and approved by the local safety group.
- In connection with the chemical APV, a substitution statement must be drawn up for hazardous substances.
- A template for the chemical APV can be found here.

Chemical stocks

- You can see local stocks of chemicals by logging in to the website Kemibrug. Information about the log-in is available locally.

DTU's safety video

- DTU has made a video about laboratory work.

In the event of accident

- WATER - WATER - WATER for burns, acid burns, and eye injuries.
- When working in a laboratory you should always find out where the emergency showers, bottles of eyewash, and fire extinguishers are located, and you should have studied the evacuation plan.
- In the even of accident (large or small), a laboratory assistant or teacher must be summoned.
- Information about the accident must be given to the safety representative, who reports all working accidents and the events that lead up to them.

First aid

- At DTU, there are people trained in first aid in every building.

Fire-fighting

- Most laboratories have fire extinguishers and there are fire hoses in marked cupboards in corridors.
- There are also fire blankets in a lot of places.

Alarm 1-1-2

- In the event of a fire that cannot be immediately brought under control, explosion, or injury to people, the fire brigade/ambulance services must be called.

- Call 1-1-2 from the nearest telephone.
- Remember to give your exact position at DTU.

Evacuation

- When you start to work in a building, you must study the evacuation plan.
- This plan hangs at the entrance on every floor.
- Note in particular the rooms and corridors you must use and the meeting point for an evacuation.
- If the ventilation system is not functioning properly (a red cross will light over the doors in the corridors), you must stop working, leave the building, and wait for further instructions at a car park.
- If evacuation is necessary, turn off gas supplies, switch off the electricity where appropriate, and leave the building.
- Alert other people in the building.

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