

# Beck's laboratory safety instructions

## General

- In case of emergency, scream for help, and report by calling the phone number – 03-640 8222. Use your judgment to decide if you can handle the problem or need to evacuate immediately.
- If you are not sure about anything – ask before you do. For any malfunction or problem, report immediately to the lab manager Gil.
- Proper clothing – long pants, closed shoes. Robe is required to avoid transferring toxic materials outside the lab.
- Unauthorized people are not to be left alone in the lab.
- Know where the fire extinguishers are located: in the wet lab near the exit door and in the x-ray room near Gil's office. There are additional ones in the corridors of the nano-center.
- Know where the first aid kits are located – in the wet lab, near the Acta, in the x-ray room near the UPS station and tools, and another one is located in the nano dining room.
- Do not work with malfunctioning equipment.
- Know where the nearest emergency exit is located for each lab in the building. Each lab has two exit doors.
- If a fire gets out of control, disconnect the electrical power using the main switch outside the X-ray room near Gil's office.

## Wet-lab specific

- Specific safety gear is located in the wet lab underneath the small centrifuge. It contains thermal insulating gloves (for cold, such as liquid nitrogen, and hot, such as removing things from the autoclave), a spill jacket, and a respirator.
- Use liquid nitrogen in a specific container and avoid direct contact with your body parts. Make sure the room is aired to avoid suffocation.
- Work with gloves when using toxic and dangerous material. Before leaving the lab, dispose of the gloves.
- Don't eat, smoke, or drink hot drinks inside the lab.
- Working with dangerous material is only permitted during working hours (8-18) and with another person in the lab.
- Use an eye shield when working with dangerous materials such as strong acids or strong bases.
- Use a mask when working with dangerous powders such as sodium azide.
- Use headphones while working with the sonicator device.

- Try to avoid transferring dangerous material in unsealed containers. If needed, use a secondary bucket to avoid spills in case the container is broken during the transfer.
- Don't place glass bottles on high shelves.
- Broken glass and sharp needles should be stored in a specific container.
- Don't pour water into acids. Always Add Acid (AAA) to water.
- Don't smell materials.
- Keep your workplace clean and tidy.
- Write down your name, date of preparation, and content on each new tube you are using.
- Use dangerous material only inside the chemical hood, and ensure the hood is functional before using it.
- If a chemical gets splashed into your eye, immediately wash for at least 15 min with eyes open and call 8222.
- If a large amount of dangerous materials is spilled over your clothes, use the shower in the corridor outside the wet lab. Take off all your clothing and scream for help.
- Don't autoclave closed bottles.
- Know the location of the fire alarm button – near the wet-lab corridor.
- Don't throw chemical or biological waste into the sink. Use specific containers for specific waste. Make sure you are using the right container. Don't throw different kinds of waste into the same container.
- Read the specific MSDS when working with a new material you never worked with before. If this is a new material to the lab, read and print a copy of its MSDS to keep in the lab. The MSDS folder is located on the shelf in the wet lab near the x-ray room's door.

## X-ray specific

- Only an authorized person can use the x-ray machine. Authorization is given by Prof. Roy Beck alone.
- You are not required to be "radiation personnel" to normally operate the system.
- Make sure all doors are shut before operating the safety shutter. When all shielded doors are shut, the indicator will turn green near the computer above the rails.
- When the X-ray is operating, yellow and red lights are turned on.
- Do not open the X-ray shielded doors while operating the X-ray. Close the x-ray shutter before opening these doors.
- Do not place unused samples, food, or unneeded liquids inside the x-ray table.
- The X-ray generator produces a dangerously high voltage. The presence of the cooling system nearby presents a safety challenge. If you see leakage from the cooling system or other liquids near the electrical system, immediately shut down the X-ray generator.

- Ensure all vacuum gauges are at their lowest pressure value and the water cooling system is at a temperature of 21 OC before operating the x-ray generator.
- Make sure there is enough chilling liquid in the cooling system and that the two vacuum pumps are working properly.
- Make extra care to check the pressure gauges after changing the slits' position.
- The Eiger detector is connected to a dry air system at low flow when measuring in air (WAXS), and the airflow is closed when measuring the detector in a vacuum.

I \_\_\_\_\_, ID number: \_\_\_\_\_, read the specific safety instructions, understood them and will operate accordingly.

Signature: \_\_\_\_\_ date: \_\_\_\_\_