

## Department of Organic Chemistry

### The general lab rules

The lab rules were formulated by the Department Board on the 11 of May 2011. Every lab is obliged to have a lab boss, a safety boss and a person responsible for environmental issues. This list regards the responsibilities of each person working in the lab.

### General Routines

In order for the lab work to be efficient and our working environment to be safe, it is necessary to establish basic routines and it is important that everybody adopts them.

*Read through the following sections carefully and make sure that you have understood them.*

As a general rule all laboratory fume hoods must be kept neat and clean. All used equipment should be cleaned immediately after use and returned to its original place. Also, all chemicals and solvent flasks must be returned to their correct shelves and not stored on the benches.

### Safety and order in the lab

#### Highlighted points

- **Lab-coats and protective glasses should be used in the lab and the rotavapor room.**
- **Do not leave your fume hood shutter open while away from the hood and work with it as low as possible.**
- **Never handle volatile compounds outside hoods or ventilated areas.**
- **Always handle silica inside a hood.**
- **Solo labwork is not permitted. There must be someone within earshot.**
- **Diploma workers and Erasmus students are not allowed to work alone in the lab at any time.**
- **In case of fire alarm, evacuate immediately (evacuation point: on the grass court outside the main entrance of the Arrhenius laboratory).**

#### Lab working environment

- If using gloves, take them off when handling stuff outside the hood in order to avoid contamination of areas that people touch with their bare hands.
- Close the door after entering or leaving the office, and don't bring lab coats, gloves, chemicals etc.
- Always set the fume hood ventilation to velocity mode when using it. When the fume hood isn't used, it should be set to "setback".
- The windows in the lab must be shut or else the ventilation will not work properly.
- Broken glass should be taken care of to avoid cutting damages.
- Cold traps are to be lifted up from the thermos when the pump is switched off.
- If you are the first to enter the lab in the morning; unlock the door.
- If you are the last to leave the lab in the evening; turn off the radio, UV-lamp, pumps, water and N<sub>2</sub> if they're not in experimental use and close and lock the door.

### **Chemicals/chemical handling**

- Always test ethers for peroxides.
- When solvents and volatile chemicals are transported, keep them in closed containers.
- Clean all balances immediately after contamination.
- When weighing smelly and/or toxic substances, make sure you either use a balance in a ventilated area or weigh in a closed container.
- Before washing dirty glass in the sink, first rinse it with acetone in the fume hood.
- Glass equipment that is not clean after washing should be put in the basic or acidic wash bath and not in the drawers.
- Switch on the ventilation when doing dishes, collect the acetone and throw it in the organic waste.
- Mark all stored chemicals with contents, your name and date.
- Sign the list for “borrowed chemicals” if you borrow something from another lab.
- New-ordered chemicals must be added to the KLARA-system within reasonable time.
- Do not keep NMR tubes outside the fume hood at any time (chloroform is poisonous and carcinogenic). Clean NMR tubes must NOT be dried in more than 60°C in order to avoid problems with the NMR spectrometer.

### **Rotavapors**

- Splash heads must always be cleaned and immediately put back after use.
- Solvent containers on the rotavaps should always be emptied and the heating always be turned off directly after use.
- When evaporating high-boiling solvents (toluene, DMF etc.)/water or acid, clean the rotavap afterwards with acetone.
- When evaporating something toxic or smelly use a rotavap in the hood. For solvents that can damage the pump (for example acids) the water suction should be used instead (switch adapter).

### **Waste disposal**

- Needles should be thrown away in an appropriate canister.
- Organic solvents waste must be stored in the ventilated cupboard in the assigned cans (halo and non-halo). It is absolutely forbidden to throw ethers in the organic waste!
- Ethers should be evaporated in the fume hood ASAP after use.
- Empty solvent (or chemical-) bottles should be completely clean and odor free before disposal, air them out for a few days in one of the fume hoods.
- SiO<sub>2</sub> and contaminated gloves, drying agents, paper etc. are thrown into the solid waste disposal kept in the ventilated cupboard in the rotavap room. SiO<sub>2</sub> waste should however be emptied in a closable container (e.g. zip-lock bag) in a fume hood before being put in the solid waste bin.
- Large amounts (> 20 ml DMF) of water-DMF mixtures from DMF extraction should be taken for destruction.
- Heavy metals are to be collected separately in separate wastes (must be plastic containers).
- Pd-C waste should be put in a plastic waste container filled with water (the Pd-C has to be in the water). The container should be taken for destruction when full.