General, Chemical and Laser Safety at Chemical Physics

This guide is to aid you **remember** the most important facts when reading the health and safety information from the Chemistry Department at LU. These can be found at:
https://www.kc.lu.se/english/employee/general-safety-regulations/
This document will then also be used to discuss health and safety routines when you are introduced into lab-specific safety routines at our department by the lab-responsible.

Safety responsible persons:

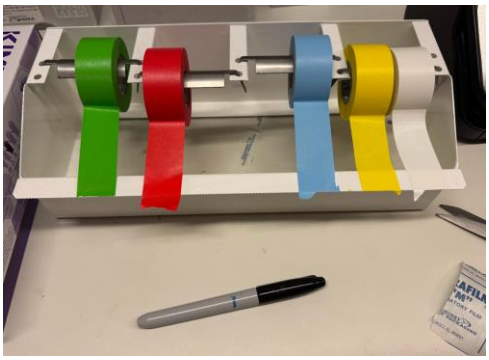
General Safety:	your supervisor (PI)
Chemical Safety:	Dmitry Baranov
Laser Safety:	Jens Uhlig (temporary)
Divisional Safety Representative:	Jens Uhlig

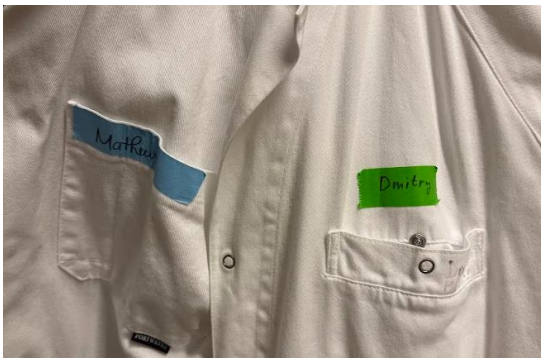
Lab responsible persons:

Wetlab Lab:	Dmitry Baranov
Millenia Lab:	Jens Uhlig / Zehan Yao (temporary)
Streak Camera Lab:	Zehan Yao
Ultra Lab:	Arkady Yartsev
SMS Lab:	Ivan Scheblykin
2D Lab:	Donatas Zigmantas
Spectroscopy Lab:	Zehan Yao

First after having read and understood all the safety information provided by LU and the additional Safety Rules and Regulations on Laser Safety and WetLab Rules (such as completing the online Basic Chemical Safety Training), you will be allowed to perform unsupervised work in our laboratories. You are only allowed to work in laboratories that you have been introduced to.

At the start of the work in WetLab, name your labcoat using a colored sticky tape:





Please use the email list wetlab-users@chemphys.lu.se to communicate wetlab-related issues, suggestions, or updates. Wetlab is shared by >30 users annually, so clear communication and adherence to basic rules are essential for the lab function.

Nobody at the Department of Chemistry is allowed to work alone in the laboratory. In individual cases, the head of the division can make a special decision after conscious assessment of the risk when allowing to work alone in the laboratory.

Things to know about working in WetLab

- **KLARA** is the chemicals database at LU and Chemical Physics. It contains chemical-specific information about risks, general regulations, and inventory
- **Label** reactions or processes running for extended periods with your contact information
- **Do not leave** open containers (beakers, vials, bottles) unattended without a note explaining the ongoing process
- **Return tools** to their proper place after use to maintain order
- **Keep shared pipettes** (marked "*ChemPhys wetlab*") clean and return them to the stand after use
- **Store hydrogen peroxide** (H_2O_2, <60%) in a separate tray, away from flammable materials
- **Use of non-denatured Ethanol** (CAS 64-17-5) must be logged in the logbook
- Avoid storing loose vials with liquids in the drawers. Use compatible secondary containments (e.g., a plastic box for water-based solutions). This is an issue that consistently shows up during recurrent Departmental safety checks.

Complete Risk Assessment

Before every new experiment, you need to fill in a risk assessment form and discuss it with either your supervisor or the lab responsible. See complete instructions at https://www.chemphys.lu.se/internal/work-planning-and-safety/risk-assessment/

Tips:

- Check the available information about safety hazards in KLARA and Safety Data Sheet (SDS) to help you judge how and where the chemicals should be handled and disposed of.
- Check if you have adequate personal protection (e.g., chemical permeability of the nitrile gloves, correct filters of the dust/gas mask) in our laboratory to handle the chemicals you will be using. Consult information such as the chemical resistance chart available from manufacturers or on the internal webpage of the division, chemical resistance chart).

General Safety Rules

Chapter 1: Emergencies

What do you do in case of an emergency in our lab?

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_____

What do you need to remember when making emergency phone calls from an internal phone at our department?

What is the number to call in Sweden in case of an emergency?

Which information do you have to provide when calling in an emergency?

Chapter 2: People to know

Who is the safety representative (skyddsombud) at the division of Chemical Physics?

Who is the responsible for laser safety at Chemical Physics?

Chapter 4: General rules

You *are the main responsible for your own and others' safety when carrying out chemical experiments in the wetlab. Please ask if you are unsure about how to handle chemicals, set up reactions, handle equipment, etc.*

Which fire extinguishers do we have in the lab, and what are they suitable for?

What do you have to keep in mind when carrying out experiments overnight/when you are not in the laboratory?

Chapter 5: General rules for working with chemicals

What is the purpose of the risk assessment we ask you to fill out for any reaction you do or chemical you handle in our laboratory?

Which categories of chemicals are not compatible and cannot be stored in the same cupboard?

How should you carry chemicals and samples outside the Chemistry lab (e.g., from/to purchasing office, between chemistry lab and laser lab)?

How do flammable poisons need to be stored?

Chapter 6: First aid and accidents

What do you do if a fire alarm goes off in our department?

Chapter 8: Waste Handling

You are responsible for disposing of the chemical waste produced in your experiments. If you are unsure how to handle your waste, please consult the chemistry laboratory responsible.

What waste categories do we have in our lab?

Which category of waste do the following examples belong to?

□ gloves contaminated with an organic dye □ gloves contaminated with perovskite

□ glass (Pasteur) pipette □ plastic pipette □ empty paper box from the gloves

What is the issue with unlabeled chemicals?

What information do you need to state on the labels of materials synthesis or solutions?

What shall you consider before ordering new chemicals?

Which elements are considered heavy metals?

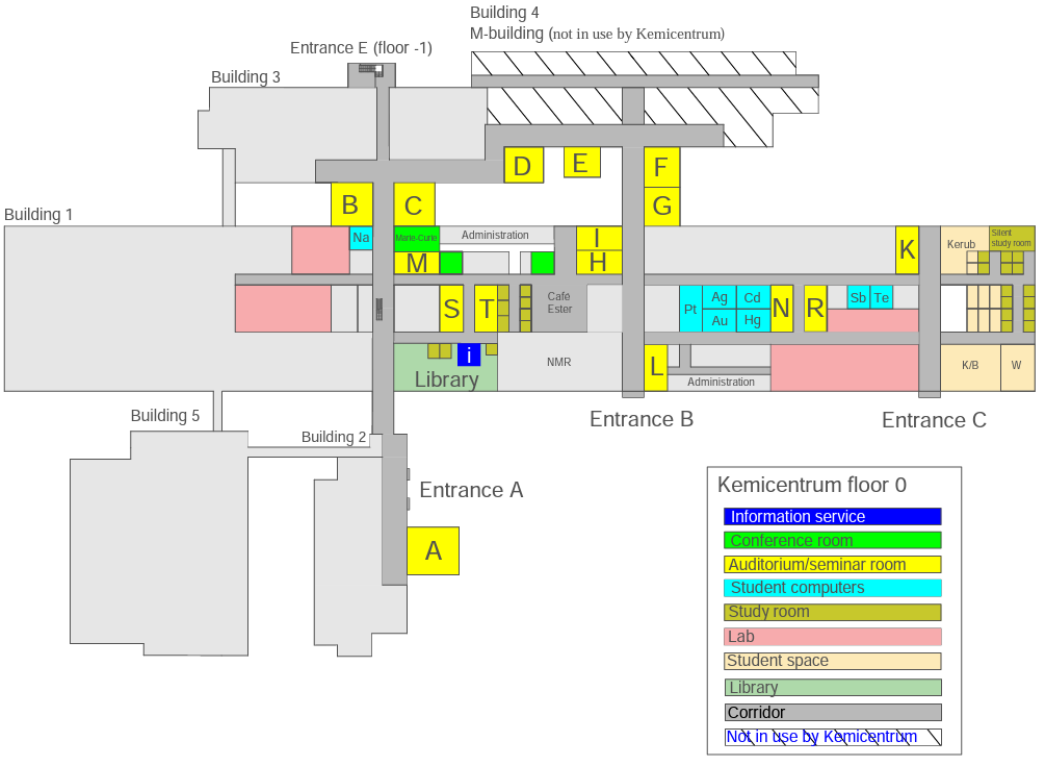
In the map of the building below, mark:

□ the location of the chemistry lab;

□ the route for carrying chemicals to/from purchasing/caretaker's office;

□ the nearest evacuation route;

□ the assembly point where Chemical Physics meets in case of an emergency;



Chapter 7: Signs and symbols

Where do you find the following warning signs and what do they indicate:

Chemistry Lab – Safety specifics

In the sketch of the chemistry lab below, mark emergency exits, showers, eye showers, fire extinguishers, fire blankets, spill kit, personal safety equipment, first aid kit