

**Safety information at the division for Particle Physics at the Department of Physics,
LU
(English version updated 2022-09-14)**

1. General safety rules

Introduction

The institution can only provide the means by which a safe workplace can be achieved. Whether it is really safe or not will always depend on how the individual employee implements the rules and advice in practise. Therefore, in addition to following the rules, each employee is expected to analyse the working situation, identify and report possible risks to the division head and the “skyddsombud” so that potential dangers can be eliminated. A “safety first” principle should prevail i.e. don’t take any unnecessary risks and get help if you feel unqualified to perform a specific task.

The purpose of this document is to focus on safety in the work so that accidents and hazards can be avoided. In addition, many other aspects on a good working environment can be identified. This can involve the psychological and social situation, equal rights, discrimination, and harassment of sexual or other nature. In these matters the division follows the policy documents outlined for the department of Physics and the University. These documents can be found at the departments Intranet pages or in the HMS document¹.

The safety organisation and responsibilities are outlined in sections 3 and 4.

This safety note concerns work in all the rooms which belong to the division. In addition to the rooms in A400 corridor, the following rooms are also under our division’s responsibility: B115 + part of clean room in Astronomy basement. *When you work at other divisions you shall follow the safety rules devised for that division. The same goes for work at other laboratories. You must make sure that you know and follow the local rules wherever you work.*

Emergency Instruction

There are information postings at each end of the corridor with instructions how to behave in case of emergencies and alarms. All personnel should meet at the outdoor assembly area (between house A and K) if there is a need for evacuation.

The emergency telephone number to the police, firebrigade and ambulance is 0-112 (when calling from an office phone) or 112 (when calling from a cell/mobile phone)


Fire alarm buttons (red boxes) are located in all corridors.

If you call for help you must specify where, inside the institute, the emergency situation is. Help the rescue team to find their way and open the doors if it is off hours. The address to the main entrance is Professorsgatan 1 and the entrance to house A is Professorsgatan 1.

A first aid kit and instructions how to give first aid can be found on the wall at room A429.

Fire extinguisher, water hose and other fire protection equipment are available in all corridors. The places are marked with self explaining signs.

¹Hälsa Miljö Säkerhet (HMS). Documentation of systematic work on Health, Environment and Safety; copies at the department of Physics and Particle Physics (binder in Division Head Office).

1. Make sure that you understand the emergency instructions, find the postings and alarms and emergency equipment mentioned above. There are complementary instructions with illustrating pictures at the division homepage.
2. The rooms of our division are offices and laboratories. Rooms A411 and B115 are considered to be laboratories and all other rooms are offices.
3. Work with chemicals, radioactive sources, electrical equipment (with the exception of computers) and high voltage shall be performed in the laboratories. Additional safety considerations apply to laboratories (see below).
4. The safety documents are revised when needed. The current versions of the safety documents are available at www.hep.lu.se/safety/.
5. Once per month, normally the first Monday, there is a division meeting. Information about changes in the safety routines will be given there. Minutes from the division meetings are distributed.
6. Laboratories have a responsible person (name posted near the door) whom you should ask for advice concerning the safety in the room. The room responsible has detailed knowledge about the equipment in the rooms and potential hazards as well as how to operate the equipment. The room responsible has the duty to make sure that the work can be performed safely in the room.
7. Work in the offices has no immediate risks. Computers, monitors and other electrical equipment must be in good condition. Make sure not to pile up paper and other materials that can catch fire close to electrical equipment that can become overheated. Arrange your workplace in an ergonomically good way. Don't neglect long term aspects of bad sitting and inadequate illumination.
8. You may only use extension cords and distributors with protective grounding. For some electrical equipment with double insulation, the factory mounted, ungrounded power plug may be used. Such equipment is marked with a symbol with double squares. 
9. Check that all power cables are intact. Disconnect the power cable before opening the case of an apparatus.
10. The Physics department sends employees on first aid training and fire protection training. In the long run everyone should have participated in these courses. Take the opportunity to join next time.
11. Keep the kitchen area clean. The hygienic status of the kitchen and its equipment is an important safety issue.
12. In case of evacuation of the building you must stay at the outdoor assembly area (outside the main entrance near the south end of the A house). To leave before your presence has been registered may result in someone risking the life in a rescue operation.
13. When you work at other laboratories and other divisions or institutions within the Physics Department or LU you must inform yourself about the safety issues at that workplace.
14. To light candles is not allowed.

2. Special rules for laboratory work

1. Each laboratory has a responsible person (see section 3) who knows the safety details and also the handling and operation rules for the equipment in the room. Follow the instructions given by the room responsible. The division head (avdelningsföreståndare) replaces the room responsible when he/she is not present.
2. Laboratories shall be locked and as much of the equipment as possible should be switched off when the lab is not manned.
3. Experimental work, that could produce accidents, must not be performed alone. This is particularly important if the work involves handling of radioactive sources, chemicals, or electricity.
4. Broken or malfunctioning equipment shall not be used. Mark it and notify the room responsible.
5. An analysis of risks shall be done when a new work situation comes up. Do the analysis together with the room responsible. Report to the division-head who will initiate changes in safety and operation routines if necessary.

Based on a risk analysis the laboratory work has been divided in the following groups:

Work with chemicals which may take place in all the laboratories
Work with electronics which may take place in all the laboratories.
Work with radioactive sources which is allowed in B115 only.

Work with chemicals:

-At present, the use of chemicals is on a low level. No particular handling precautions are necessary other than the instructions given by the manufacturer on the container. If you buy chemicals, other than what is allowed for household use, you should consult with the room responsible or the division head so that the need for permissions and additional handling instructions can be evaluated.

-Store chemicals in the original container so that the content, handling instructions and warnings follow the chemical. Follow the instructions given by the manufacturer. Watch out for allergic reactions which may show up even at extremely low exposure. Plan your work for short exposure and adequate ventilation.

- Long time storage of chemicals are in A310 (Atomic Physics). Chemicals should be documented on the list on the cabinet. An inventory of chemicals will take place during the annual safety revision in January.

- Chemicals which are not in use any longer shall be destructed through the channels of LU or the physics dept. Details are found in the Department of Physics HMS document.

- Our division has presently no permission to handle flammable gases and chemicals. Normally a liter of flammable liquid can be handled without permission. We can obtain permission but count on a long lead time if we need to go through the administrative formalities.

Work with gases:

- We have a (non-flammable) gas bottle, in B115. Only Anders Oskarsson is allowed to handle it.

Work with electronics and electrical apparatuses

- Do only such work with electricity that you have sufficient training to perform. Work on the 220V system of an apparatus may only be done by Lennart Österman.
- If the protecting cover of an apparatus is to be removed the equipment must be deenergized by unplugging the power cable.
- Extension-cords and distributors must have protective grounding.
- Custom built or imported equipment without proper CE certification may be used in laboratory environment under special circumstances. It must however be checked, by personnel with special competence. Ask Lennart Österman to make a judgement.
- Check the electrical safety of old equipment, in particular power cables, connectors etc. in the 220V parts of the apparatus.
- Follow the usage instructions given by the manufacturer.
- Use ground fault circuit interrupters (jordfelsbrytare) as often as possible and at least when you develop, test or repair electrical equipment or operate custom built or other uncertified equipment.
- When the robot is running, a notice will be on the door to A411 or clean room and people without proper training may not enter the room.
- All work with HV shall use power supplies with current limitation adapted to the apparatus in use. Presently, a maximum current of 3mA is sufficient in all HV-applications at the division. If this limit needs to be exceeded, consult the room responsible. An electrical accident at this current may not be very dangerous in itself, but secondary effects like dropping things or falling may be harmful. Make sure that HV parts are insulated, protected and marked so that they can not be accidentally touched.

Work with radioactive sources:

- radioactive sources shall only be used in B115. *A special instruction* is available. It is posted on the wall in B115.
- Eating and drinking is forbidden in connection with work with radioactive sources.
- The most commonly used source is a ⁹⁰Sr beta source with 3.7 MBq activity. It is owned by the division. The source is sealed and placed in a thick walled steel cylinder. A small collimator hole, limits the activity outside the cylinder by a large factor. The cylinder may only be opened by David Silvermyr.
- The source (including steel cylinder) shall be stored in room H210 as soon as it is not in use and looked after in B115. The source, including steel cylinder, must be placed in the small aluminum box, which is marked with content and owner, before placing it in the safe. David Silvermyr has access to the storage.
- The ⁹⁰Sr source may only be handed-out by David Silvermyr. The usage instructions should be copied and follow the source.
- If a source is borrowed from others, make sure to get the usage instruction along with it.
- Read the advices from the radiation protection regulation at LU: <http://www.staff.lu.se/organisation-and-governance/rules-and-decisions/rules-and-regulations/work-environment-sustainability-and-safety>
- The annual occupational dose that you are exposed to is the accumulated value from all laboratories in which you have worked. There are no administrative routines to collect these data. You should be able to

obtain your accumulated dose from the labs in which you have worked if such measurements have been judged to be necessary.

3. Certificates for radiation work

We follow the Swedish legislation and rules from the Swedish Radiation Safety Authority (Strålsäkerhetsmyndigheten), and not the CERN-specific rules.

This means that everyone at our division that will have, or already have, dosimeters, should be monitored by the Lund University Occupational Health Service (Företagshälsövården), FHV, according to the Swedish rules. These rules are:

- (1) A full medical examination with blood test every three years
- (2) In between those, annual self-declarations submitted to FHV on a special form

In addition, you should have passed the radiation protection course at CERN or at Lund University

For all those that are in the monitoring of FHV, have passed the first full medical examination, and have made the required course, the head of division can issue the Institute Certificate to CERN:
http://www.hep.lu.se/safety/doc/InstituteCertificate_EN.pdf

after FHV has given the head of division the green light for this and has received a paper from you that the radiation protection course has been passed.

To enter FHV's register, everyone who need a dosimeter from CERN, should fill in the form:
https://www.hr-webben.lu.se/sites/hr-webben.lu.se/files/blankett_medicinsk_kontroll.pdf

and get it signed by the head of division. Then you should send it to ingrid.ekelund@fhv.lu.se. This will enter you into FHV's register of people being monitored, and will prompt you when a new self-declaration have to be submitted and when it is time for a new full medical examination.

4. The safety and environment organization

Function		Name	Duties
Avdelningföreståndare (division head) (AF)		Peter Christiansen	To provide the means needed for a safe work. (work delegated from the prefect)
Bitr. avdelningsföreståndare (deputy division head) (BAF)		Else Lytken	Assists and replaces AF when absent. Works out the safety rules
Brandskyddsansvarig Responsible for fire safety		David Silvermyr	Performs the local control of fire hazards and implementation of protective measures.
Stf. Brandskyddsansvarig Replaces Brandskyddsansvarig		Balazs Konya	Dito
Room-responsible	A411 B115 Cleanroom (Astronomy)	Lennart Österman David Silvermyr David Silvermyr	Makes sure that the lab work is done safely and according to the rules and regulations.. Participates in risk analysis together with AF and BAF and provides feedback to safety rules.
Documents	Archive	Division Head	

There is a separate safety organization for the employees from where you can get assistance if there is a safety issue that you think has not been dealt with adequately. The local functions within this organization are the safety representative “skyddsombud” , the deputy skyddsombud and the main skyddsombud.

Skyddsombud	David Silvermyr	The employee representative in safety matters
deputy skyddsombud	Lennart Österman	
Main skyddsombud	Bengt Meuller	(Solid state physics)

More information at:

<http://www.staff.lu.se/employment/work-environment-and-health>

<http://www.staff.lu.se/organisation-and-governance/rules-and-decisions/rules-and-regulations/work-environment-sustainability-and-safety/>

<http://www.fysik.lu.se/intranat/organisation/service-info/hlsa-milj-skerhet-hms/>

5. Information security

Users must be familiar with the guidelines for using computers and network at the university. You can find information about the IT services at the department and division via https://www.hep.lu.se/staff/paganelli/doku.php/it_services
For any questions regarding IT, please contact Florido Paganelli.

Staff must be aware of the usage of mail at the division:

- * Mails sent in our roles as employees should be sent and received using the Lund University email system. It is understood that we have a lot of communication linked to the international collaborations where this is not possible. Nevertheless, mails about internal university business, mails to funding agencies etc, should be done using hep.lu.se

- * We can send and receive private mail with hep.lu.se, and these should be filed in a folder labelled Private.

- * It is not allowed to have autoforward from our hep.lu.se account, to another server.

Students are not allowed to have a mail account at hep.lu.se, they should use their student mail account at the university.

6. Signing sheet

I have today taken part of the English version of the document

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and I have had a discussion about the document with the signed representative of the division. I declare that I will follow the instructions to the best of my ability and keep myself informed about future changes in the document.

Lund

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Signature

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Signature (printed)

I have today had a safety briefing with the above mentioned employee.

Lund

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To be archived in the office of the Division Head.