

In new surroundings, especially in laboratories, **orient yourself** - so find out of where the emergency stop for electricity is located, where the nearest fire extinguisher is and the possible routes for leaving the laboratory/building in an emergency.

Be careful to clearly mark **defective equipment** and send it for repair.

Never trust that an appliance is not defective. For example, never plug a high voltage cable into a detector with voltage on - if the cable is defective it can be you who receives a shock!

In the handling of **radioactive sources**, the following generally applies:

ALARA - As Low As Reasonably Achievable.

Unnecessary danger from radiation can be avoided by:

1. increasing the distance to the source and
2. limiting exposure time.

There are other hazards which may be encountered, such as when working with **vacuum chambers** (high pressure differences can 'squeeze' or set things in motion), from **lead bricks** (wear gloves/ wash hands), and **oxygen-displacing gases** (from e.g. liquid N₂ in large quantities).

Always ensure **tidiness**, especially in the laboratory - clutter breeds more clutter and can hide potential hazards, and may also increase the risk of fire.

Responsibility

During your stay at IFA, you will probably have to perform work where special care must be taken. It can, for example, be working with *high voltage, high current, cryogenic liquids, lasers, radioactivity, radiation, flammable gases, chemicals* and much more.

It is first and foremost **your own responsibility that this work is carried out in a completely safe and healthy manner.**

This folder is intended to help you make your work more safe.

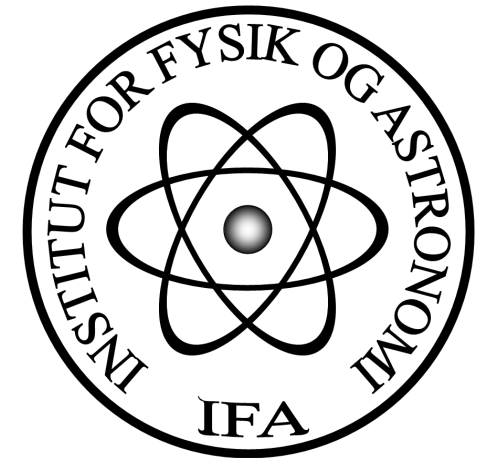
Legal requirements

Students are not usually covered by the University's insurance policy. Therefore as a student you must take out "full-time" insurance (fuldtidsforsikring) yourself.

It is now possible for the Danish Working Environment Authority to hand out fines, starting from DKK 2,500, to persons who obviously and intentionally violate safety measures.

Just as in the private sector, IFA requires good safety to optimize the working environment in the department and to avoid accidents and subsequent sanctions.

An introduction to laboratory safety for students and new arrivals at IFA



The Health and Safety Organisation at IFA



Safety signage

There are a variety of safety signs that are generally categorized by colour:

Prohibition Signs: e.g. danger, alarm, do not operate, stop...

Warning Signs: e.g. caution possible hazard, be aware, testing, checking...

Instruction Signs: specific behaviour or action required, use of personal protective equipment (gloves, goggles, etc.)...

Safe condition signs: Rescue measure, first aid, escape routes, assembly point...

The most common safety signs at IFA can be found in this leaflet. Most of the signs are self-explanatory and just a few typical examples of how they may appear are mentioned.

This leaflet **does not replace the need** for a thorough review of the topics mentioned, such as dealing with radioactivity, electricity, chemicals or lasers.

You can find more information here <https://phys.medarbejdere.au.dk/en/work-environment-and-safety/> (Accessible only from the AU network)

If in doubt about any aspect of safety, contact an employee or IFA's safety manager:

Claus Grosen, mobile: (+45) 2338 2119



"Pressurised cylinders to be removed in fire"
Gases under pressure, e.g. N₂, O₂, C₂H₂, CO₂



"Strong magnetic field"
Superconducting and accelerator magnets



"Beware"
Machines e.g. cranes



"Flammable material"
Ethanol, acetone, cleaning fluids



"Corrosive material"
Acids and bases used for e.g. targets



"Ionising radiation"
Electrons, protons, x-rays, gamma rays



"Radioactivity"
Radioactive sources



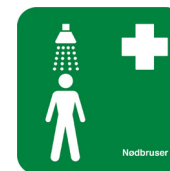
"Low temperature"
Liquid nitrogen, helium



"Laser beam"
Visible as well as invisible lasers



"Hazardous voltage"
High voltage for e.g. detectors



"Emergency Shower"
In e.g. the chemistry lab.



"Eye rinse"



"First aid"
In e.g. the workshop



"Emergency exit"



"Smoking and open flame forbidden"

Rygning og åben ild forbudt

"Fire extinguisher"
Several types available in labs and corridors



"Eye protection mandatory"



"Protective gloves required"

In an emergency

Fire: Dial **112** and
Call Ove Fjordside, mobile: 2899 2013

Water damage/power failure
Call Ove Fjordside, mobile: 2899 2013

IFA Operations technician
Per Kühnel, mobile: 2899 2035

The Head of Department should also be informed
When using a University landline phone to call, prefix the numbers with "0" for an outside line.