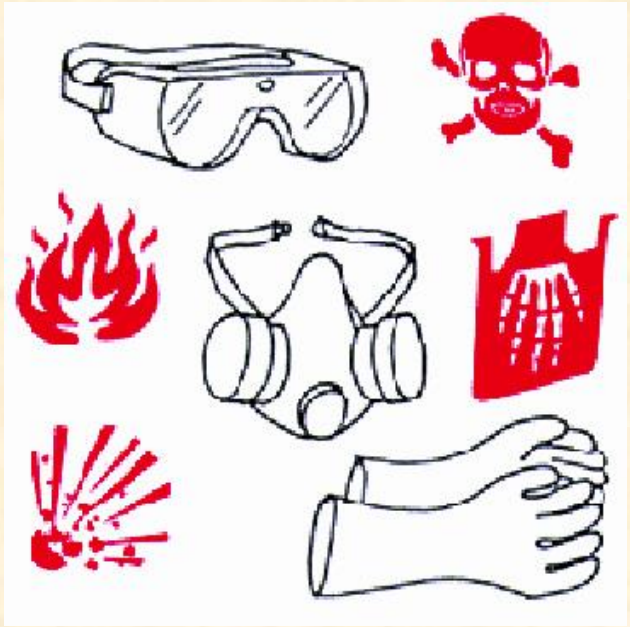
Sicherheitsbelehrung – Praktikum
Safety Instructions – lab courses

2023/24



Original slides by: H. Zähres,
Modified by M. Vennemann,
T. Feggeler and R. Meckenstock

Emergency kits in the physics lab

Example: ME142

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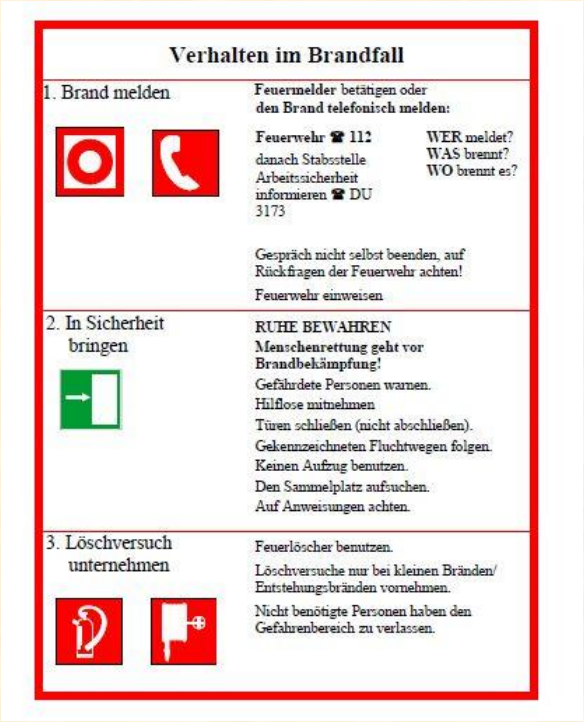
Safety installations and regulations

- fire – safety regulations
- fire – extinguishers
- emergency exits



Instructions about different cases of emergencies

Accidents:

The most important phone numbers are those of the **national emergency services**.

Direct dialing their numbers is always possible from ***any phone*** in the university ***at any time*** :

Police	**110**
Fire-brigade and ambulance	**112**

Calling the national emergency services:

Be prepared to answer the following questions:

- Who are you ?
- What happened ?
- Where did it happen ?
- How many persons are hurt ?

Important: Do not hang up !
Wait for further questions !

Emergency by fire

If something caught fire and you can not extinguish it directly with our fire-fighting equipment:

- hand fire extinguisher
- and/or the fire hose (opposite to elevators)

call the national emergency service **112**.

In addition press one of the *active* fire alarm buttons.

They are located right to each elevator and in the middle of the staircase on each floor.

- the buttons are protected by a thin walled glass
- you must brake it with any tool before you can press it
- but take care of your hands and eyes

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Safety installations

Emergency by Water

The second and third kind of water supply is used in laboratories and are called

Brauchwasser and Kühlwasser

Both are:

- not intended for drinking,
- can be polluted and are prepared with chemicals
- so: both could threat your health

Another type of an electricity network only exists in the labs. It is connected to mixed power sockets for different current classes and line voltages, the sockets are labelled with numbers and fused at the so called *Laborverteiler*.

The big red button labelled with

NOT AUS („Emergency Stop”)

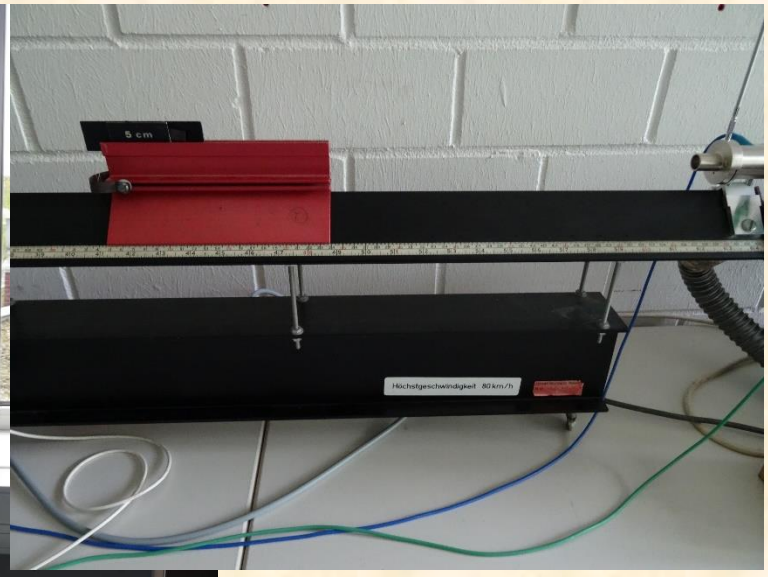
It is a part of the built in safety circuit: If you press it, the knob will snap in and all the electrical equipment is switched off!

To reactivate it turn the **NOT AUS** button to the right, it jumps out, but now you must press a nearby button labelled with **‘EIN’**.

Risks in the physics lab – Mechanical Devices

Lab experiments: A01, A03, A04, A05, A08, A09, A13:

Be alert: People can be hurt by weights, pointed objects, high velocity objects etc.



Risks in the physics lab – Light sources 1

Lab experiments: D01, D02, D04, D05 D07, D08, D09, D11, D12, D13:

It is strictly forbidden to remove any protective shielding of any light source.

Risks in the physics lab – Light sources 2

Lab experiment: D08:

Be alert that students use the corresponding filters with the pyrometer.

Risks in the physics lab – Light sources 3

Lab experiment: D14:

Be alert that students use laser goggles while the laser is online. Everyone should pay attention while using the laser.

Class 3B (IIIb) laser safety information

WHAT IS A CLASS 3B LASER?

Class 3B lasers are hazardous for eye exposure. They can heat skin and materials but are not considered a burn hazard. For visible-light lasers, Class 3B lasers' output power is between 5 and 499 milliwatts.

Class 3B is the same as the Roman numeral "Class IIIb" you may see on some lasers' labels. At this website, we primarily use the Arabic numerals, for convenience.

SAFE USE GUIDANCE - GENERAL

Class 3B visible-beam lasers are medium powered, from 5 to 499 milliwatts. **A Class 3B laser can cause eye injury.** The more powerful the laser, the greater the chance of injury.

Use of laser protective eyewear is suggested or recommended (depending on the laser's power level), as discussed elsewhere on this page.

A Class 3B laser can be a distraction, glare or flashblindness hazard for pilots and drivers. **NEVER aim any laser towards an aircraft or vehicle that is in motion.** This is unsafe and is illegal -- you could be arrested and jailed.

Always be aware of the beam location. Keep it away from people's eyes and heads. Watch out for reflected beams from glass and shiny surfaces. When outdoors, you must avoid aiming at or near aircraft.

ONLY ALLOW USE BY RESPONSIBLE PERSONS

This is not a toy. Children should not be permitted to use Class 3B lasers.

Any teenager using a Class 3B laser should be continuously supervised by a responsible adult. A number of teenagers have caused eye injuries to themselves or others by misusing Class 3B and Class 4 lasers.

http://www.lasersafetyfacts.com/3B/

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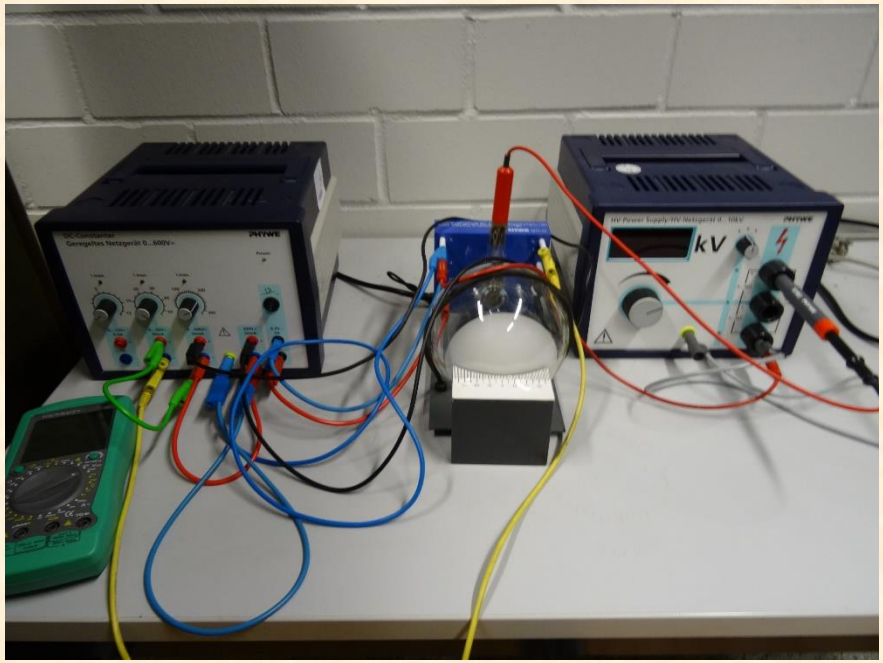
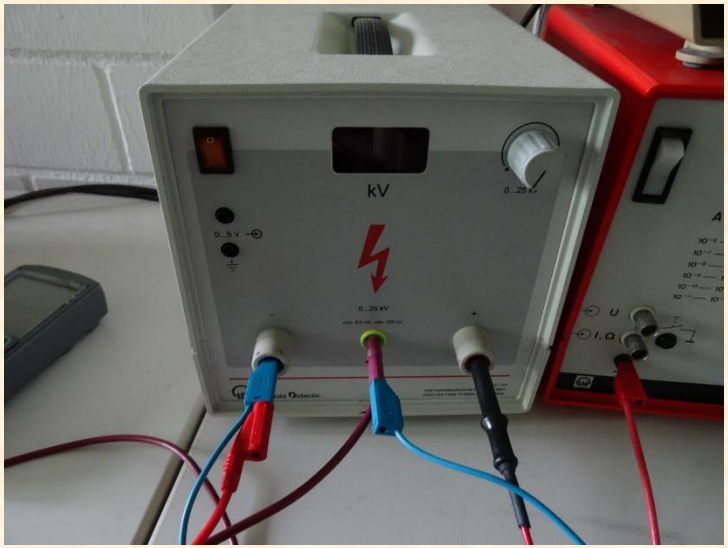
Risks in the physics lab – Voltage/High Voltage

Lab experiment: All experiments with power supplies: HV: B11, C17

Always check the cabling of the corresponding experiments before you turn them on. Pay attention to the proper grounding.

Regard the electricity safety information displayed before.





Risks in the physics lab – Gases, esp. He

Lab experiment: A06

Only the assistants of the experiment are allowed to handle the He gas bottle.

Always check the condition of the bottle and the valves.

Handle with care!

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Risks in the physics lab – Heat, heating plates

Lab experiment: B01, B02, B03, C01

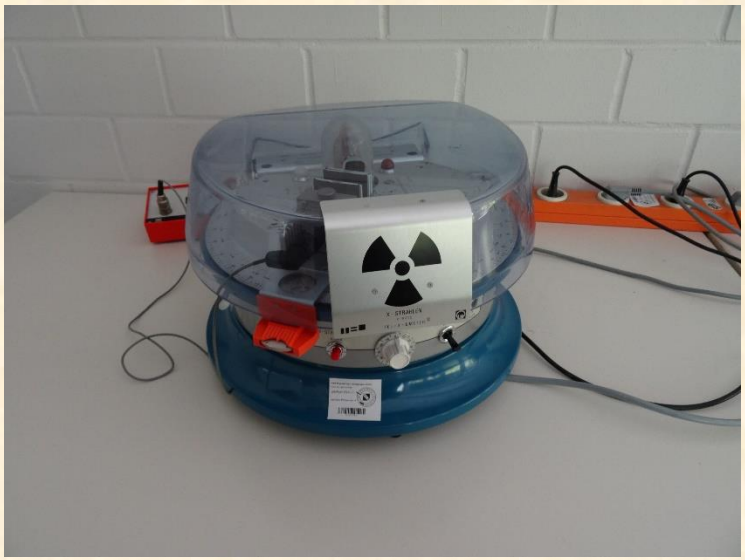
Be alert, students can burn their hands, etc.

Risks in the physics lab – X-ray devices

Lab experiment: B10, B16

Only the assistants of the experiment are allowed to turn on the x-ray devices.

It is not allowed to open any x-ray device while it is turned on under any condition.



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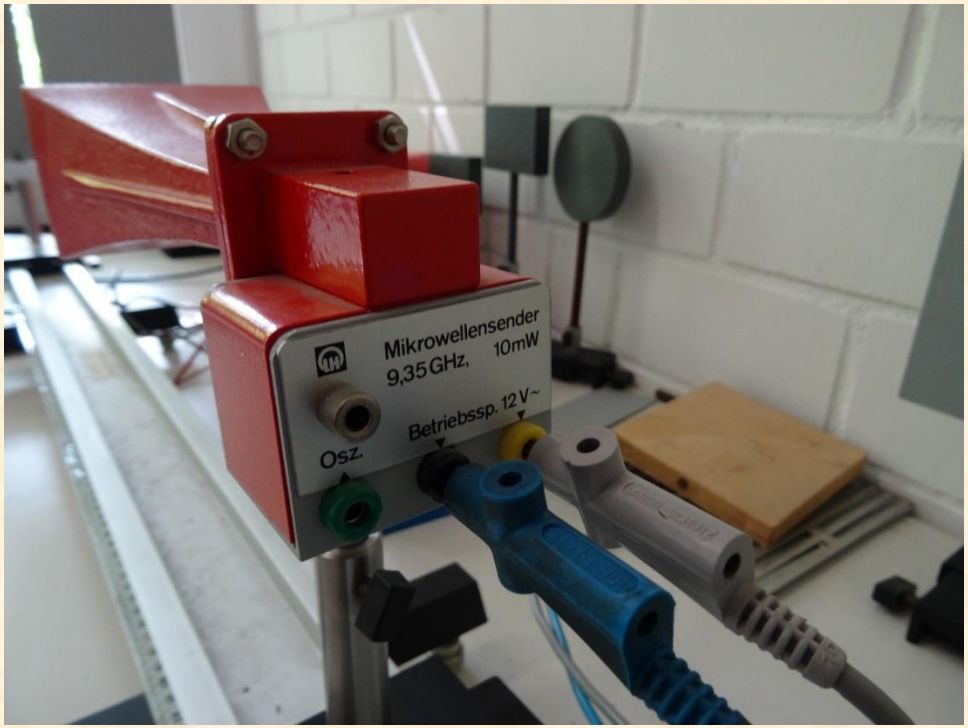
Risks in the physics lab – microwave devices

Lab experiment: D16, D16 “neu”

Stay alert while using the microwave diode at experiment D16.

Regard proper shielding with microwave goggles and experimental shielding at experiment D16 “neu”-.



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Allways follow the lab guidelines

http://www.uni-due.de/agfarle/grundlagenpraktikum/Praktikumsordnung.php

http://www.uni-due.de/agfarle/grundlagenpraktikum/Laborordnung.php

Thanks for your ATTENTION

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