

# Safety instructions at the Department of ?

Faculty of Science and technology

Approved by (head of Department):

Date:

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Fields or areas in the text highlighted with **yellow** are revised for each lab/lab area



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## 1 Background and aims of the safety instructions

The aims of these safety instructions are to prevent accidents, injuries (short and long term) or damage to buildings, equipment, or surroundings. In our laboratories many tasks, instruments and hazardous factors make it essential that everybody know and follow the existing instructions, and that everyone has a high level of conscientiousness on safety while working/studying in the labs.

If accidents happen the instructions provide guidance on how to reduce the consequences/damage. The instructions also focus on reduction of long-term effects upon exposure.

An understanding of safety is also an important part of the education our departments give.

## 2 Responsibility help make this chapter more practical, describe/list tasks!

- **Head of Department (Instituttleder)** - has the ultimate responsibility for ensuring that the activities of the Department are pursued safely and responsibly, and that laws and regulations are followed.
- **Head of Administration (kontorsjef)** - has a delegated responsibility for safety protection in the Department and is responsible for the daily pursuit of safety protection.

- **Lab managers (laboratorieansvarlig)** - are given responsibility for safety, daily operation, safety training, maintenance, and development in their laboratories ([Lab manager routine](#)).
- **Project managers, supervisors, and course managers** - have responsibility for the daily training and follow up of employees and students in their group. They are also responsible for ensuring safety training is completed and necessary protection equipment is used.
- **Safety representatives (verneombud)** The health, environment, and safety (“HSE/HMS”) representatives take care of all employees’ interests regarding all types of working environment issues. They have the right, if necessary, to stop all work.
- **The individual employee/student** – Are responsible for
  - ensuring that they carry out their work in accordance with the safety instructions, guidelines and working procedures.
  - undergoing necessary and mandatory training
  - their own use of protective equipment
  - safe working practices
  - reporting of incidents/non-conformities.

### 3 Safety training and access to laboratories

Before you are allowed to be in or work in NT-fak laboratories, mandatory safety training level 1 and 2 must be completed.

#### 3.1 Access to labs

All labs or lab areas are closed with digital locks (Salto/security lock (some requiring a PIN)). Only leaders, operation managers and engineer’s or scientists working in the labs are given access. Access is granted only after completing safety training described below. Access to labs is given in our digital key system by the department administration.

#### 3.2 Safety training

Safety training for laboratories is given in three levels and must be confirmed in Canvas before access is granted. Reading this instruction is part of level 2 safety training.

1. All employees, master's students and visiting researchers who wish to work or be present in our laboratories must complete UiT mandatory safety training HMS 0500 (more info on which modules see [intranet](#) / [HR-portalen](#))
2. All new employees, students and visiting researchers who wish to work in NT-fak labs must, before starting such work.
  - a. Read the safety instructions for the relevant lab area
  - b. Fulfill the safety course in Canvas for the relevant lab area
  - c. Participate in a [guided and structured lab safety tour](#) **listen/malen må utvikles videre** (by laboratory manager/supervisor)
3. All new employees, students and visiting researchers shall, before starting new and potentially hazardous work, be given the appropriate safety training for this work. This includes training required for using specific equipment or procedures in labs where the individual already has access but has not been trained on that specific equipment or procedure.

Level 2 safety training has to be repeated every fifth year.

#### 3.3 Mandatory lecture on hazardous health factors, health examination, and exposure registration

All employees/student working in NT-fak labs will be invited to a mandatory lecture about hazardous health factors in their work environment. What are they, how are they hazardous and how to avoid them?

In addition, UiT as an employer is obliged to, once a year, register exposure among employees to:

- carcinogenic and mutagenic chemicals (H340, H350, H350i)

- lead
- biological factors (class 3 and 4)
- ionizing radiation.

The registration is done through the secure digital form “Occupational exposure register registration”. It is mandatory to answer the form and an invitation will be sent by e-mail directly to the relevant employees and students.

For more information see “UiT routine for health examination and exposure registration”

## 4 Risk assessments

Risk evaluation must be done before any work is done regarding:

- Use of new chemicals classified as hazardous (CLP).
- New potentially hazardous working methods/procedures.
- Significant changes in the risks associated with an existing working method/procedure.

The risk assessment must be written, approved by leader/supervisor, and saved to the Teams/SharePoint «O365-?». – each lab area should have its own Teams/SharePoint

For more information on risk assessment see “[Risk assessment](#)” in HR-portalen or contact faculty [HSE-advisor](#).

## 5 General safety regulations in labs

### 5.1 Language skills

At UiT Norwegian is the main language and if possible, should be used.

English is often the main working language in NT-labs. All safety courses, instructions and routines must therefore also be in/given in English. For safety reasons, it is an unconditional requirement that all lab managers and users possess good English knowledge.

## 6 Emergency, evacuation, and emergency equipment

An overview of emergency handling, evacuation, fire extinguishing and first aid equipment will be given in the lab tour. Emergency and evacuation routines, and first aid equipment can be found in Teams [O365-NT-fak HMS og personal](#). Access can be obtained from the NT-fak HMS- or personnel-advisor.

### 6.1 Evacuation

In our laboratories there are many flammable liquids, poisonous chemicals and pressurized gases. If there is an incident and the evacuation alarm sounds, a fast and safe evacuation has high priority! Information about evacuation will also be given in the guided lab tour.

- Familiarize yourself with escape routes, the position of fire alarms and fire extinguishers.
- Make yourself familiar with the extinguishing equipment.
- The buildings have automatic alarms based on smoke and heat detectors. The fire department is alerted automatically.
- If the alarm does not sound automatically, trigger it manual (red boxes), call the fire department on 110.
  - When the evacuation alarm sounds everyone must evacuate the *building* immediately og go directly to the assembly area/ralleypoint. If possible or you mean to have the time:
    - Shut gas taps for flammable, oxidizing and poisonous gas
    - Shut all doors to rooms and corridors, close windows
    - Shut of dangerous equipment (e.g.lasers)
    - Help those who are physically disabled or others that have difficulties with evacuation (take care of your own safety as well)

- Use the nearest emergency exit, do not use elevators
- If you have competence and training, attempt rapid extinguishing, but do not take any personal risks.
- The fire department or the building's fire officer will determine when you can re-enter the building.

## 6.2 Emergency equipment

### 6.2.1 Evacuation alarm

Evacuation alarm is loud ringing. In Technology building there is also a voice message telling you to leave the building.

#### Light alarm

For some areas that are isolated (e.g., freezer room) or have work that includes powerful noise, light alarms should be considered!

### 6.2.2 Emergency showers

There must be an emergency shower in, or within immediate reach of, areas where work with corrosive, irritating or flammable chemicals is being carried out. The showers must be clearly displayed and tested at least twice a year.

Familiarize yourself with the location and use of these showers in the areas where you work.

### 6.2.3 Eye washing equipment

In all relevant laboratories/locations there must be easy access to bottles with eye washing fluid and/or fountains. To avoid lasting eye damage as result of corrosive/irritating liquid, the washing should be initiated within seconds, and continue for 15-20 minutes (or as long as possible if using a bottle).

Familiarize yourself with the location and use of eye washing equipment where you work. Keep it *close* when working with corrosive/irritating liquids.

### 6.2.4 First aid equipment

Suitable first aid equipment is to be found at all locations where hazardous work is done (Orange boxes in the laboratory or out in the corridor). Is equipment in first aid boxes is jused, inform lab manager and it will be refreshed.

Make yourself familiar with the location, type and use of the first aid equipment where you work. What are the most likely injuries and how they are treated?

First aid equipment is typically labeled in Norwegian. Be sure you know what these items are and can be used for in advance.

### 6.2.5 Fire extinguishers

Suitable fire extinguishing equipment is to be found at all locations where work with flammable chemicals or hazardous machines is carried out.

Make yourself familiar with the type of fire extinguisher, its location and correct usage in the laboratories where you work.

When to use the different extinguishier equipment:

	Fire hose	Powder-extinguisher	CO <sup>2</sup> -extinguisher	Foam-extinguisher
Wood, paper, textiles	😊	😊	😞	😊
Gas	😞	😊	😞	😞
Flammable chemicals/liquids	😞	😊	😊	😊
Oil/deep frying fat	😞	😞	😞	😞

Electrical equipment				
High voltage (>400V)				

## 6.2.6 Emergency stops

In locations where work with the electrical supply or hazardous machines is done, installation of an easily accessible emergency stop should be evaluated.

Familiarize yourself with the location of any emergency stops in the laboratories where you work.

## 6.2.7 Chemical spillage equipment - BeredSKAP (emergency cabinet)

BeredSKAP are cabinets with basic equipment needed to handle and clean up chemical spills (content of Beredskap see [Appendix 13](#)). There are special procedures and equipment needed for dealing with a chemical spillage. For more information see [Chapter 8.5](#)

# 7 Hazardous factors in our labs

In this chapter we describe the different hazardous factors in our labs.

- What are the hazardous properties?
- Consequences of exposure
- How to protect ourselves.

**This chapter must be adapted and rewritten to the relevant lab areas. Put in/remove hazards and describe the relevant hazards as best as possible**

## 7.1 Hazardous chemicals

This includes chemicals classified as hazardous (see SDS). The hazards should be assessed, are relevant and must be considered in connection with transportation, storage and use of the chemicals. [Appendix 6](#) present all the main groups of hazardous properties that can be found in chemicals.

<b>Hazardous properties</b>	Flammable, corrosive, poisonous, ...
<b>Consequences of accidents, spills and/or exposure</b>	Fire, acute poisoning, long term illness, corrosive injurie in eye, skin or respiratory tract,
<b>How to avoid accidents or protect ourselves</b>	Always work in fumehood, use safety equipment as stated in SDS, safe storage and correct storage, sealed, unbroken and not expired containers, waste treated as hazardous
<b>Use in the lab/lab area</b>	Describe the use, amount and where in the lab

## 7.2 Gas bottles and gas under pressure

<b>Hazardous properties</b>	Inert, flammable, corrosive, poisonous, ...
<b>Consequences of heat, leakage and/or exposure</b>	Injuries as a consequence of fire/explosion, poisoning, corrosive injurie, suffocation,
<b>How to avoid accidents and/or protect ourselves</b>	
<b>Use in the lab/lab area</b>	Describe the use, amount and where in the lab

See "[NT-fak routine for handling and use of gas](#)"

## 7.3 Radiation

### 7.3.1 Ionizing radiation

<b>Hazardous properties</b>	
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<b>Consequences of unwanted radiation and or exposure</b>	
<b>How to avoid unwanted radiation and/or protect ourselves</b>	
<b>Use in the lab/lab area</b>	Describe type of nucleid, amount, the use, and where in the lab

### 7.3.2 X-ray (røntgen)

<b>Hazardous properties</b>	
<b>Consequences of unwanted radiation and or exposure</b>	
<b>How to avoid unwanted radiation and/or protect ourselves</b>	
<b>Use in the lab/lab area</b>	Describe apparatus, the use and where in the lab, see also hazardous equipment

### 7.3.3 Radar

<b>Hazardous properties</b>	Ståle
<b>Consequences of unwanted radiation and or exposure</b>	Eye injurie,
<b>How to avoid unwanted radiation and/or protect ourselves</b>	
<b>Use in/at the lab/lab area</b>	Describe apparatus, the use and where in the lab

### 7.3.4 Electromagnetic fields

<b>Hazardous properties</b>	Truls
<b>Consequences of exposure</b>	
<b>How to protect ourselves</b>	
<b>Use in/at the lab/lab area</b>	

### 7.3.5 Laser

<b>Hazardous properties</b>	IFT
<b>Consequences of exposure</b>	
<b>How to protect ourselves</b>	
<b>Use in/at the lab/lab area</b>	

### 7.3.6 UV-light

<b>Hazardous properties</b>	IFT
<b>Consequences of exposure</b>	
<b>How to protect ourselves</b>	
<b>Use in/at the lab/lab area</b>	

## 7.4 Biological material

### 7.4.1 Infectious material

<b>Hazardous properties</b>	Infectious to humans and/or animals.
<b>Consequences of exposure</b>	May cause infection, with or without toxicity, in humans or animals.
<b>How to protect ourselves</b>	Lab coat, gloves, biological safety cabinet (if needed). Autoclave waste.
<b>Use in/at the lab/lab area</b>	Microbiological research

### 7.4.2 GMO – gen manipulated material

<b>Hazardous properties</b>	Genetic contamination, competition with natural species, increased selection pressure, horizontal transfer of recombinant genes.
<b>Consequences of exposure</b>	Unintended environmental consequences, potential harm to the health of humans and/or animals.
<b>How to protect ourselves</b>	Lab coat, gloves, biological safety cabinet (if needed). Autoclave waste.
<b>Use in/at the lab/lab area</b>	Molecular biological research, fermentation

## 7.5 Noise

<b>Hazardous properties</b>	Noise/sound frequency, sound pressure, sound power and time distribution can cause cilia and nerve cell break down
<b>Consequences of exposure</b>	Hearing impairment
<b>How to protect ourselves</b>	Hearing protection
<b>Use in/at the lab/lab area</b>	Cutting, drilling, hammering

## 7.6 Voltage

<b>Hazardous properties</b>	Ståle
<b>Consequences of exposure</b>	
<b>How to protect ourselves</b>	
<b>Use in/at the lab/lab area</b>	What makes the noise/sound, pich, pulsating, steady, how loud, start up sound, (fin beskrivelse på AT side)

## 7.7 Hazardous equipment/machines/devices/tools

Examples: stone saw, centrifuges, Sonikator, wave pool, 3D printer....

Equipment	Hazards

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### 7.7.1 Name of hazardous equipment

<b>Describe the equipment and its us</b>	
<b>What are the hazards</b>	
<b>How to keep it safe</b>	Comments on setup
<b>Who is allowed to use it</b>	
<b>Safety equipment</b>	

### 7.7.2 Name of hazardous equipment

<b>Describe the equipment and its us</b>	
<b>What are the hazards</b>	
<b>How to keep it safe</b>	Comments on setup
<b>Who is allowed to use it</b>	
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### 7.7.3 Name of hazardous equipment

<b>Describe the equipment and its us</b>	
<b>What are the hazards</b>	
<b>How to keep it safe</b>	Comments on setup
<b>Who is allowed to use it</b>	
<b>Safety equipment</b>	

## 8 Safety and protective equipment

### 8.1 Safety benches

#### 8.1.1 Fume hoods / Extraction-hoods

At NT-fak all work with hazardous chemicals is done in the fume hood. In addition the use of fume hood should be considered if work could lead to offensive odors or dust.

About fume hoods

- Airflow in - minimum 0,4 m/s.
- All hoods must have an alarm set to be triggered if the airflow is less than 0,4 m/s.
- Airflow and alarms must be checked annually (organized by BEA). If malfunction is suspected tests can be ordered and done.
- In the event of faults with the hoods the laboratory manager must be contacted (see room-card on the laboratory door).

Procedures for working in fume hoods

- Have the smallest possible of equipment in the hood when you are working.
- Only chemicals in use are allowed in the fume hood.
- It is not allowed to store hazardous chemicals in fume hoods.

- It is NOT allowed to have your head inside the fume hood while working with hazardous chemicals.
- Always work with the hatch as low down as possible, never work with the hatch above maximum level.
- Working with the hatch above/higher than maximum level is only allowed if there are no hazardous chemicals in the fumehood.
- Clearly labelled the hood if you need to leave it during a hazardous experiment (Hazard warning sign and contact information).
- Clear and clean the hood after use.
- Always close the hatch when the fume hood is not in use.

If reduction of air flow in the ventilation system or fume hoods occurs, all labs must be left immediately and not used until the ventilation system works normally. Simple risk reduction measures can be evaluated and implemented before leaving.

[LINK TO Fume hood safety video](#)

### 8.1.2 Laminar airflow cabinet (LAF)

Aaa

### 8.1.3 Biological safety cabinet (BSC)

aaa

## 8.2 Personal protective equipment

### 8.2.1 Shoes/footwear for work in laboratories

The correct footwear ensures quick and safe evacuation and protection from various types of spillages and/or sharp/heavy objects.

As minimum requirement, the sole and top part of the footwear must be covered, and the shoes must fit well. Depending on the task being performed and the laboratory/workshop in question, a requirement for wearing footwear that protects against various types of spills, protective footwear (steel-capped/puncture resistant) and or antistatic shoes should be considered.

If there is a risk of spillage of liquids and chemicals on the floor, the use of appropriate boots or shoe covers should be considered.

It is not allowed to work in socks or barefoot in NT-fak labs.

### 8.2.2 Laboratory clothing

The lab coat has/can have three purposes.

1. It protects the user against hazardous chemicals/materials
2. It protects the samples for contamination from the user
3. It prevents soiling/destruction of private clothing

In NT-fak labs:

- White laboratory coat must be worn for all work in laboratories involving hazardous chemicals and biological material. Lab coats must:
  - be quick and easy to remove.
  - not be worn outside the lab/lab area (offices, meeting- or break-rooms).
  - be clean and give a secure and good impression (se laundering routines below)
  - be available for guests.
- Lab clothing must be without loose parts or strings that may be caught in moving parts or soiled by chemicals. (e.g., long hanging scars are not allowed)
- Long hair must be satisfactorily restrained using headgear, a hair elastic or hairnet.

To prevent the spread of chemical or biological spill, the laboratory coat must be removed when leaving the lab/lab area.

Put in exceptions for use of lab coat outside of lab

#### 8.2.2.1 Procedures for laundering lab of coats

Laboratory coats must be undamaged and clean. Dirty/contaminated laboratory coats must be cleaned immediately.

Ikke vaske hjemme

Få inn i omvisning

Describe routine for relevant lab/lab area.

### 8.2.3 Protective/safety glasses

Protective glasses must be used when working with hazards that can cause eye damage. This could be light (e.g., laser), particels (e.g., form sawing), chemicals or biological material. Glasses/shield must cover eyes completely and should also cover the sides.

All laboratories where work that can cause eye damage is carried out, and where protective glasses are a requirement, should be marked accordingly.

#### Protective glasses for work with hazardous chemicals

At all times, and without exception, protective glasses must be used while staying in a laboratory where work is done with chemicals that can cause eye damage (see SDS chap. 8.2 Exposure controls).

If suited normal reading glasses can be used. **Contact lenses should not be used while working with chemicals that can cause eye injury.**

Employees at NT-fak that work in laboratories where protective glasses are needed, have the right to their own personal protective glasses. If required personal protective glasses can be strength glasses.

### 8.2.4 Gloves

Gloves are at NT-fak primarily used as protection against hazardous chemicals. They can also be used to protect samples, or to protect against heat/freezing or cuts.

When used as protection against hazardous chemicals:

- Gloves are always used when handling/working with chemicals classified as requiring it in the SDS. Use the quality stated in the SDS. Nitrile gloves are standard at NT-fak.
- In the event of spillage, the gloves should be immediately removed, hands thoroughly washed. Never reuse contaminated gloves.
- Other equipment/parts of the lab (e.g., door handles) should not be touched with gloves on.
- Never leave the laboratory with gloves on

### 8.2.5 Breathing masks

If working with chemicals classified as a danger with inhalation or doing work that produces hazardous dust is done outside a fume hood, breathing mask is used.

Use the right type of mask as stated in the SDS (Ch. 8.2 Exposure controls/personal protection).

The person performing work that produces hazardous fume or dust is responsible for ensuring that all people present in the lab wears protection equipment.

### 8.2.6 Hearing protection

If work produces loud, unpleasant and/or damaging noise, hearing protection must be used. The degree of need for ear protection, and which type is preferable, should be determined by a risk assessment.

The person performing work that produces hazardous noise/sound is responsible for ensuring that all people present in the lab uses hearing protection.

Make sure that all people present in the lab wear hearing protection.

### **Headphones/headset/ear plugs with audio input**

For safety reasons and secure communication, it is not allowed to listen to music or other loud sound through devices with audio input

Noise canceling headset is often a good and acceptable alternative to reduce disturbing or tiring background noise, and at the same time preserve communication with others.

## **9 Working with chemicals classified as hazardous**

Wash your hands thoroughly before and after working, or being in contact with, hazardous chemicals materials. Use soap or a detergent, not organic solvents.

### **9.1 Purchase and disposal of chemicals and gas.**

Purchase of chemicals and gas must be carried out via the permanent purchasing staff. Those purchasing must inform the chemicals database contact when new chemicals have been purchased.

<b>Role</b>	<b>Names</b>
Purchasing staff in our labs:	
Chemicals database contact in our labs:	

Chemicals are purchased in amounts that are as small as possible. Before the purchase safety and what available options there are for the treatment and waste handling must be evaluated. Remember the “substituting duty” (substitusjonsplikten) when using hazardous chemicals.

Chemicals that lack safety data (SDS), or where the safety information is inadequate, must be disposed. For new chemicals without existing safety information a SDS must be composed.

Annual inspections of the chemical storages is done in connection with “Cleaning days” (Ryddedag), disposal evaluated where appropriate. Contact the [chemical waste specialist](#) for assistance when disposing of chemicals.

### **9.2 Transport, storage and labelling of hazardous chemicals**

#### **9.2.1 Transport**

Transport of hazardous chemical (between labs, in corridors or between floors) must be carried out in a safe fashion:

- Always use a secondary container (suitable bowls or buckets should be available in all labs) and/or a suitable trolley or wagon with sidewalls.
- Avoid such transport in areas or at times where there are many people present.
- Chemicals being transported must at least be marked with the producer, the product name and the hazard pictogram (CLP).
- In the event of a spillage evacuation should be evaluated and the spillage cleaned up with the aid of equipment from the emergency cupboard, “BeredSKAP”.

#### **9.2.2 Storage**

Hazardous chemicals must be stored safely:

- Hazardous chemicals must be stored in a locked area/cabinet.
- Flammable chemicals must be stored in fireproof cabinets.
- Poisonous chemicals must be stored in ventilated cabinets.
- Poisonous chemicals that must be stored cold must be kept in impermeable secondary containers.

- Chemicals that can react with each other must be stored separately. See “[Table of incompatible chemicals](#)”.
- Do not keep more chemicals than absolutely necessary on a bench or in a hood.
- Hazardous chemicals are not allowed to be stored on a bench or in a hood.

Further requirements regarding storage of chemicals are described in SDS section 7.

### 9.2.3 Labelling

- Chemicals must be labelled according to CLP regulations (Classification, Labelling and Packaging regulation) which is a globally harmonized body of regulations based on GHS (Globally Harmonised System).
- Chemicals in the lab must be labelled with
  - producer name
  - product name
  - hazard pictograms and the hazard & safety sentences (H- og P-sentences).
  - the date they arrived (in some cases also date of opening/first time use)
  - Owner’s initials/name
- Solutions made in the laboratory must at least be labelled with
  - date
  - name of the substance
  - Initials/name of person responsible.

Chemicals that are not correctly marked may be disposed of without warning.

## 9.3 Chemicals with special/high risks

Describe the storage, handling and use of chemicals with special high risk (highly and acute toxic, pyrophoric or explosive) used in the lab/lab area. E.g., Cyanogenbromid, Hydrofluoric acid or chemicals that can form explosive peroxides.

## 9.4 Chemicals database - Chess

See «Guidelines for the use and maintenance of Chess at UiT»

The chemicals database is a record of substances that contains safety data sheets (SDS) and other safety information concerning chemicals, radioactive- or biological materials. Each UiT unit has its own location in the database.

UiT uses the electronic database “[Chess](#)” (Feide on log). Chess can be accessed by logging intranet under “Ansattforhold/HMS/Lokal informasjon” or from [HR-portalen](#)

All units have local chemical database contacts that are responsible for updating Chess (registering new chemicals in the database and deleting the ones that are disposed/no more in use).

Chess chemical database local contact – name of unit	
Name of location	Name of contact

Chemicals are deleted from “Chess” upon disposal, or if they are not stored at the location.

## 9.5 Chemical spills

### 6.2.6 Chemical spillage equipment - BeredSKAP (emergency cabinet)

BeredSKAP are cabinets with basic equipment needed to handle and clean up chemical spills. There are special procedures and equipment needed for dealing with a chemical spillage:

- List of content - BeredSKAP see [Appendix 13](#)
- Handling of chemical spills, see [Chapter 8.5](#)
- Simple first aid in the event of an accident with chemicals, see [Appendix 14](#).

DW

Deanna Wolfson

Should we include this content directly in the main document? I tend to view things in an appendix as 'optional' and would be likely to skip over it in a 40 page document as I regarded it as something the authors thought was not essential. Also applies to other appendices.

## 7 Hazardous factors in our labs

In this chapter we describe the different hazardous factors in our labs.

All actions depend on the amount and type of chemical and spill. Before you start using a chemical. Think and plan what to do in case of a spill!

If you're not 100% sure of what to do – evacuate the lab, close the door, stop and think! What could be the correct things to do, and in what order?

- Get help from better qualified person?
- Evacuate area/building?
- Notified leader/supervisor?
- Remove the spill?

### Main type of spills and how to handle them

#### **Small spill without health risk**

- *Example* – small spill on bench
- *Cleaning material* - wipe paper
- *Reaction* – wipe up and throw paper in residual waste

#### **Small spills with health hazard, manageable by you**

- *Example* – broken beaker of liquid chemical
- *Cleaning material* - Hazemat pad/Chemisorb
- *Reaction* – Soak it up and collect, treat as risk- or chemical waste

#### **Spill of corrosive materials**

- *Example* – bottle of concentrated acid
- *Cleaning material* - Water, engineer will do the wipe up
- *Reaction* – dilute with water, evacuate area, alert engineer

#### **Spill posing health risk and/or a fire hazard**

- *Example* – Bottle of solvent or developer
- *Cleaning material* - none, engineer will do the cleanup
- *Reaction* – Evacuate the area, alert the engineer

#### Also remember:

- Identify the spilt substance! Never start to remove the spillage if you are unfamiliar with the risks associated with the chemical or if you are unsure how to remove it.
- Use SDS to find safety arrangements, how the spill should be removed (should be done before you start using a chemical!)
- Find the correct protective equipment before you clean the spill
- Turn off burners and shut off the gas valve
- Close doors, open windows
- The emergency response cabinet contains absorbents, gloves, protective glasses, shoe covers, surgical masks, respiratory protective equipment and disposable overalls.

## 9.6 Procedures for special assignments/methods involving hazards

Describe procedures for high risk work. An example could be the use of HF gas

## 9.6.1 ?

?

## 9.6.2 ?

??

# 10 Transport, storage and labelling of gases

Routines on handling and use of gas at NT-fak are described in “NT-fak routines on handling and use of gas”. All users must complete local training (level 2 and 3) on the use of gas before start of work.

At NT-fak all transport of gas bottles and mounting and maintenance of setups connected to gas, is done by dedicated and trained gas managers.

Gas managers – unit name

# 11 Working alone, and laboratory work outside of normal working hours

## 11.1 Working alone

For rule on working alone see appendix “[NT-fak Routines for working alone](#)”

## 11.2 Working in labs outside of normal working hours

Normal working hours are 07:00 – 17:00. All potentially hazardous work outside of normal working hours must be cleared with the leader/supervisor. If overnight work (23:00 – 06:00) is necessary, this has to be approved by leader/supervisor.

Before doing lab work alone outside of normal working hours, procedures for assistance and for the rapid and secure summing of help must be established.

# 12 Waste handling and disposal

See also guideline “[Hazardous waste](#)” in HR-portalen

Packaging, labelling and disposal of different types of laboratory waste in our labs:

## 12.1 Explosive or pyrophoric waste

Description:	Type, form, were
Waste container	Describe container to collect this waste and where it is
Labelling og waste container	What is it, name of producer, date?
Disposal/dispatch	who, when where
Contact person:	Local: UiT: Randi Sælebakke mobil 909 50 267, <a href="mailto:randi.salebakke@uit.no">randi.salebakke@uit.no</a>

## 12.2 Chemical waste

See also “UiT routine for management of chemical waste”

Description:	Waste containing chemicals classified as hazardous
Container	If possible, use original container, if not use approved container/box (see SDS)
Labelling	UiT chemical waste label
Disposal/dispatch	who, when, where
Contact person:	Local: UiT: Randi Sælebakke mobil 909 50 267, <a href="mailto:randi.salebakke@uit.no">randi.salebakke@uit.no</a>

## 12.3 Used gas canisters (from bunsen burners)

Description:	
Container	
Labelling	
Disposal/dispatch	who, when, where
Contact person:	Local: UiT: Randi Sælebakke mobil 909 50 267, <a href="mailto:randi.salebakke@uit.no">randi.salebakke@uit.no</a>

## 12.4 Risk waste (yellow buckets)

Description:	Wast that due to appearance, smell or color can arouse suspicion or concern. Examples are gloves, tubes, pipette-tips, gels contaminated paper/compress, contaminated glass, no bacteria-contaminated waste!
Container	Yellow bucket
Labelling	UiT blue risk waste label
Disposal/dispatch	who, when, where
Contact person:	Local: UiT: Anne-Kristin Bjørnbakk mobil 936 58 846, <a href="mailto:anne-kristin.bjornebakk@uit.no">anne-kristin.bjornebakk@uit.no</a>

## 12.5 Infectious waste (yellow buckets)

Description:	Waste from research containing microorganisms or their toxins that can cause disease/health damage in humans or other living organisms
Container	Yellow bucket
Labelling	UiT yellow label for infectious waste After inactivation - UiT blue risk waste label
Disposal/dispatch	Same as risk waste
Contact person:	Local:

	UiT: Anne-Kristin Bjørnbakk mobil 936 58 846, <a href="mailto:anne-kristin.bjornebakk@uit.no">anne-kristin.bjornebakk@uit.no</a>
--	--

## 12.6 GMO (Gen manipulated material)

merged with “Infectious waste”?

Description:	Waste that contains GMM (gen manipulated microorganism) class 2
Container	Yellow bucket
Labelling	UiT yellow label for infectious waste After inactivation - UiT blue risk waste label
Disposal/dispatch	Same as risk waste
Contact person:	Local: UiT: Hanne Foshaug mobil 926 33 039, <a href="mailto:hane.foshaug@uit.no">hane.foshaug@uit.no</a>

## 12.7 Radioactive waste

Description:	
Container	
Labelling	
Disposal/dispatch	who, when, where
Contact person:	Local: UiT: Hanne Foshaug mobil 926 33 039, <a href="mailto:hane.foshaug@uit.no">hane.foshaug@uit.no</a>

## 13 Electrical hazards

When using electrical equipment ensure that:

- Neither cabling or plugs are hot, are corroded or otherwise physically damaged.
- The cabling’s external insulation sits tightly in the plug (in the plug’s cable tie).

If non-conformities are discovered, or you are unsure that the equipment is safe, contact one of the Department’s engineers.

The electrical supply at UiT is 5-point TN-S earthing system. In an ordinary plug one conduction lead gives 240 V whilst the other gives near 0 V relative to earth. However, in a three-phase system there will be a potential difference of 400 V between the phases. It is important to ensure that equipment which can be connected to the supply is correctly rated for the type of supply.

### First aid

1. If possible - turn off the source of electricity
2. Move the source away from you and the person - use a dry, nonconducting object made of cardboard, plastic or wood.
3. Begin CPR if the person shows no signs of circulation, such as breathing, coughing or movement.
4. Call for ambulance - 113

## 14 Simple first aid when working with hazardous chemicals

[UiT first aid course HMS-502](#) is mandatory before working with hazardous chemicals.

Be prepared!

- Always know the hazards in your lab
- What injuries will most likely occur

- How do I treat the most likely injuries
- Where do I find the first aid equipment trunk

For simple first aid, see [Basic first aid in the event of chemical accidents](#)

## 15 Pregnancy, chemicals and laboratory work.

See UiT «[Work routine for pregnant and breast-feeding women](#)».

Pregnant women should not be exposed to substances that are carcinogenic, mutagenic, or harmful to genes or reproductive ability in any way (CMR substances). Before a pregnant woman begins to work with hazardous chemicals, radiation or biological materials, the work must be subject to a risk assessment and any necessary measures taken.

Pregnant and breast-feeding women shall not work with Cytostatica, anesthetic gases or substances marked with:

### GHS classification

H360F	May damage fertility
H360D	May cause harm to the unborn child
H361f	Suspected of damaging fertility
H361d	Suspected of causing harm to the unborn child
H362	May cause harm to breast-fed children

Pregnant and breast-feeding women shall be extremely careful with, and can choose not to work with, substances that are marked with:

### GHS classification

H330	Fatal if inhaled
H310	Fatal in contact with skin
H300	Fatal if swallowed
H350	May cause cancer
H340	May cause genetic defects
H351	Suspected of causing cancer
H351i	Suspected of causing cancer if inhaled
H341	Suspected of causing genetic defects

Pregnant women must not do work which may expose the fetus to radiation in excess of 1mSv in the course of the pregnancy. Pregnant women can also refuse to work in the presence of ionizing radiation even if there is no likelihood of their exposure breaching this limit.

## 16 Cleaning and order in laboratories

Laboratories must always be maintained in a clean and tidy condition

Cleaning personnel only clean the floors (normally once a week) and remove residual waste (transparent bags in bucket, often under the sink). Cleaning staff are not allowed to:

- Wash benches
- Remove/clean objects on benches
- Move objects standing on the floor. If you want the floor washed beneath such objects, you them yourself.

Speak with cleaning staff when/if there are special circumstances that need to be explained in your lab.

Users of the lab are responsible for all other cleaning and order.

### 16.1 Cleaning days - “Ryddedag”

Clearing and cleaning days are organized in all laboratories twice a year. Head of Administration has the responsibility and organizes the “ryddedag”. On ryddedag no other work is allowed in the lab until all cleaning day tasks are done and approved.

See appendix 19.6 [Procedures and check list for clearing and cleaning days laboratories](#)

## 17 Non-conformity / HSE-deviation reporting

All deviations or non-conformities are to be reported. This can be damage/injuries, hazardous situations, or breaches of regulations/instructions/procedures. The health and safety representative must also be informed of the incident and the head of administration (kontorsjef) is responsible for follow-up.

Reports are given digital through UiT non-conformity system. For more information and links to the non-conformity system se intranet page "[HSE nonconformity or deviation reports](#)" or HR-portalen "[HSE non-conformance and personal injury](#)"

## 18 Sanctions if regulations are breached

Depending on the severity, violation of regulations given in these safety instructions may result in oral or written warning from the Head of department. Serious, or repeated violations, will result in sanctions. Primarily the sanction will be restricted or no access to laboratories for shorter or longer periods.

### 18.1 Procedure if regulations are breached:

- **First incident** – meeting with employee/student and leader - violation or breach is discussed and correct procedure described. Need for update on safety training assessed. If possible written minutes
- **Second incident** – meeting employee/student and leader, warning on possible sanctions, written minutes including warning
- **Third incident** – meeting with employee/student and leader, written minutes - sanctions become operative

## 19 Appendix

### 19.1 Routines for working alone, NT-fak

Approved by:	Faculty director Valentina Burkow Vollan	Date:	16.11.2018
Applies to:	Faculty of Science and Technology	Id:	

By “working alone” this routine means potentially dangerous working methods or tasks performed without other employees present in the same area, room, or adjacent room. Working alone create a situation in which, in the event of accidents, near-accidents, or injuries, there is a risk of not receiving or not being able to ask for immediate help or assistance. It is also a situation where others don’t have the opportunity to correct any risky behavior.

The following routines apply to any work performed alone at the Faculty of Science and Technology:

1. **Risk assessment** - “Working alone” and routines in connection to this work must be a separate point in all relevant risk assessments.
2. **Safety training** - Everyone who will perform work alone must receive all necessary and required safety training in advance, including but not limited to:
  - a. Centralized safety training (HMS 0500)
  - b. Local safety training
  - c. Reviewing relevant risk assessments
3. **Agreement on working alone** – Working alone must always be agreed upon in advance with your manager/supervisor or a colleague. The agreement must include:
  - a. When and how long you will be working alone
  - b. What you will be doing

You must also send a message to your manager/supervisor/colleague when you finish working alone if:

- a. You are on fieldwork and have a set time for finishing the work or returning home
  - b. You are on cruise and are working alone on deck or in a laboratory
4. **Communication in connection with working alone** – always bring a mobile phone with you when working alone.
  - a. Prior to working alone, mobile phone coverage in the relevant area must be checked. If there is insufficient or inconsistent coverage, and if there isn’t a public or emergency phone in the area, then emergency transponders or a satellite phone must be brought.
  - b. When working alone for more than a day, a fixed agreement for daily reporting must be made with the manager/supervisor/colleague.
5. **Master’s and bachelor’s students and working alone** – Master’s and bachelor’s students must always have their supervisor’s approval before working alone.
6. **Ikke ørepropper?**

## 19.2 Important/Emergency Telephone numbers

UiT internal emergency number	(776) 44 444
Fire Department:	110
Police:	112
Ambulance	113
Hospital (UNN):	776 26 000
Hemis (Occupational health service):	776 91 070
National Poisons Information Centre: (Giftinformasjonssentralen)	22 59 13 00
AVARN (UiT security firm)	924 49 277

### 19.3 Topics guided lab tour

1. Warning routines/alert/alarm in case of accidents
2. Evacuation routines
  - 2.1. Alarms
  - 2.2. Evacuation route
  - 2.3. Assembly area
3. Fire-fighting equipment
4. First aid equipment and first aid, relevant/most likely injuries
5. BeredSKAP – equipment for handling of chemical spills and action plan for the handling of spills
6. Personal safety equipment – where is (inform about relevant equipment)
  - Safety glasses/shiel
  - Gloves
  - Safety mask
  - Protective footwear
  - Other safety equipment:
7. Waste handling
  - Residual waste
  - Chemical waste
  - Infectious waste
  - Biological waste/GMM
  - Radioactive waste
8. Storing and work with hazardous chemicals
9. Storing and work with biological factors and GMO
10. Use of fume hood
11. Use of LAF bench
12. Gas under pressure – type of gas, routines, hazards and safety routines
13. Use of liquid nitrogen
14. Other topics relevant topics?

## 19.4 Lab manager routine (laboratorieansvarlig)

### Routine laboratory manager (laboratorieansvarlig)

Approved: John Arne Opheim, fakdir, NT-fak

Date: 11.5.2016

#### **Applies to**

Faculty of Science and Technology (NT-fak)

#### **Responsibility, authority and distribution of tasks**

##### *Head of Department*

The head of department has overall responsibility for laboratories and workshops and shall ensure that safety, operation, maintenance and development are safeguarded. Tasks with daily operations can be delegated to the laboratory manager.

##### *Lab manager (laboratorieansvarlig)*

The laboratory manager and any substitute are delegated tasks with safeguarding safety, daily operation, maintenance and development of laboratories and workshops.

#### **Competence requirements**

The laboratory manager shall have competence in the field of the relevant laboratory/workshop at university level.

The laboratory manager does not have personnel responsibility for employees working in the laboratory/workshop, but shall facilitate good safety.

#### **Tasks**

##### *Risk assessments*

The laboratory manager shall ensure that risk assessments of the premises and its potentially hazardous work tasks, methods or machines/apparatus are carried out. Normally, the laboratory manager will participate in the risk assessments.

##### *Training*

The laboratory manager shall ensure that all users of the facility have necessary and documented safety training. The UiT safety training is in three levels:

1. Mandatory UiT safety course (HMS 0500 - Safety in laboratories, fields and cruises) with necessary additional courses
2. Local safety training in the relevant laboratory /workshop (see form for documentation of safety training NT-fak)
3. Training in the use of potentially hazardous machines/appliances or working methods/tasks

#### **Safety practices**

The laboratory manager shall supervise users in safety routines and use of protective equipment as well as ensure that the routines are followed.

#### **Deviation/Non-conformities**

The laboratory manager shall ensure that deviations related to the premises are registered and followed up.

#### **Access**

The laboratory manager shall prepare and update the list of employees/students who shall have access to the premises and ensure that access via electronic locking system is updated.

#### **Safety equipment**

The laboratory manager shall ensure that the required protective and first aid equipment is available and, where required, is used.

**Alarm and evacuation routines**

The laboratory manager shall know the notification and evacuation routines for the premises and the building in question

**Authority to stop work**

If the laboratory manager discovers work that is considered to provide too high a risk, he/she has the authority to temporarily stop the work until further clarifications with the safety delegate/department management have been made.

**Development and changes**

The laboratory manager shall be informed of and participate in development and change processes in the laboratory/workshop

## 19.5 Procedures and check list – laboratory cleaning days

In order to ensure safe and secure lab conditions at NT-fak it is decided that all our laboratories have two annual clearing and cleaning days.

All employees, PhD and master students working in labs MUST take part.

The head of admin (kontorsjef) is responsible for the organization of the clearing & cleaning days, that they are carried out properly in line with the applicable laws, rules, and guidelines.

The laboratory manager is responsible for the practical planning, organization and carrying out of the clearing and cleaning days in the individual laboratories. This includes filling out and approving the check list.

In cooperation with the laboratory managers head of admin is responsible for:

- Setting dates for the cleaning days
- Ensuring that all employees and students get necessary information about clearing and cleaning days
- Ensuring that the necessary equipment is available
- Informing the chemical waste specialist about clearing and cleaning days
- Approving checklists for the individual laboratories

### Check list tidying and cleaning days

Laboratory: \_\_\_\_\_ Date: \_\_\_\_\_

Laboratory manager: \_\_\_\_\_

Description	Done
Room card checked and updated where necessary	
Apparatus card is up to date	
Emergency shower and eye shower/eye wash checked	
Safety data sheets (Norwegian / English) are up to date/checked	
Additional safety glasses. Check by the door	
Make sure there are gloves in all sizes	
Fume hoods cleared, cleaned and function checked (with strip of paper)	
All types of hosing (gas, vacuum and water) have been checked	
Glass waste container checked/emptied	
Chemical waste containers are correct and properly labelled	
Chemical's cupboard/fire safe is tidy and clean and chemicals correctly stored.	
Old chemicals and chemicals that are not needed have been prepared for disposal	
Chemicals without up-to-date safety information (CLP criteria) prepared for disposal	
Chemicals are properly labelled in accordance with CLP criteria	
All benches, cupboards, shelves and windowsills have been tidied and cleaned	
All floor surfaces have been tidied	
The laboratory has been generally tidied	

Signed: \_\_\_\_\_

Approved by head of admin \_\_\_\_\_

Comments:

## 19.6 Hazard pictograms and sentences

**Hazard  
pictogram**

**Hazard**

**Hazard sentence**

	Explosive	May explode in contact with fire, in case of shock or friction.
	Flammable	Flammable chemicals
	Gas under pressure	Contains gases under pressure
	Oxidizing	Chemicals that are not necessarily flammable themselves, but that can cause or contribute to, usually by emitting oxygen, that other materials begin to burn.
	Acute toxicity	Acutely toxic, small amounts can cause fatal poisoning or death.
	Health hazard	May cause inflammatory reaction in the eyes, on the skin and in the respiratory tract. Relatively small amounts can cause chronic injuries, poisoning or death.
	Corrosive	May cause permanent damage to the skin, throat or eyes upon contact.
	Serious health hazard	Can cause chronic injuries.
	Hazardous to the environment	Emissions can pose a danger to the environment.

## 19.7 Warning signs

 <p>Generell fare</p> <p>General warning</p>	 <p>Brannfare</p> <p>Fire hazard</p>	 <p>Eksplisjonsfarge</p> <p>Explosion hazard</p>	 <p>Etsende stoffer</p> <p>Corrosive substances</p>
 <p>Biologisk fare</p> <p>Biological hazard</p>	 <p>Giftige stoffer</p> <p>Toxic substances</p>	 <p>Laserstråling</p> <p>Laser radiation</p>	 <p>Radioaktivt materiale</p> <p>Radioactiv substances</p>
 <p>Fare elektrisk strøm</p> <p>Electrical hazard</p>	 <p>Fare høyspenning</p> <p>Warning high voltage</p>	 <p>Fare lavspenning</p> <p>Warning low voltage</p>	 <p>Fare giftig gass</p> <p>Warning toxic gas</p>
 <p>Forsøk pågår</p> <p>Experiment in progress</p>	 <p>Gass under trykk</p> <p>Gas under pressure</p>	 <p>Hindring</p> <p>Warning obstacles</p>	 <p>Fare truck kjøring</p> <p>Warning forklift</p>
 <p>Kraftig magnetfelt</p> <p>Magnetic field</p>	 <p>Lav temperatur</p> <p>Low temperature</p>	 <p>Miljøskadelige stoffer</p> <p>Substances harmful for the environment</p>	 <p>Helseskadelige stoffer</p> <p>Hazardous substances</p>

## 19.8 Safety equipment



Face shield



Safety shoes/boots



Safety helmet



Hearing protection



Protective gloves



Dust mask



Safety clothing



Protective mask



Protective goggles

## 19.9 Emergency equipment signs



Førstehjelpsutstyr

First aid equipment



Båre

Stretcher



Nøddusj

Emergency shower



Øyeskylling

Eye wash

## 19.10 Examples flammable liquids category 1, 2 og 3

### Kategorier brannfare

Flammable liquid, category 1	Liquid with flash point < 23 °C and boiling point ≤ 35 °C, equivalent to GHS category 1
Flammable liquid, category 2	Liquid with flash point < 23°C Boiling point > 35 °C, equivalent to GHS category 2
Flammable liquid category 3	Liquid with flash point ≥23 °C and ≤ 60 °C, equivalent to GHS category 3

The flash point is the lowest temperature of a given liquid where a test flame causes the liquids vapour to ignite instantaneously and that the flame spreads itself over the surface of the liquid. At the flash point the explosion point of the liquid has been passed.

### Examples of liquids hazard symbols, H-statements, flammable liquid category

Name	Hazard symbol	H-statements	Fire Hazard category
Acetone		H225, H319, H336	2
Methanol		H225, H302+H311+H331, H370	2
Ethanol		H225	2
Isopropanol		H225, H319, H336	2
Acetic acid		H226, H314	3
Hydrochloric acid		H290, H314, H335	
Toluene		H225, H304, H315, H336, H361d, H373	2
Diethyl ether		H224, H302, H336	1
Benzene		H225, H304, H315, H319, H340, H350, H372	2
Hexane		H225, H304, H315, H336, H361f, H373, H411	2
Pyridine		H225, H302, H312, H314, H332	2
Sodium hydroxid		H290, H314	

## 19.11 When to classify chemical waste as hazardous waste

Excerpt of "Vedlegg III" Commission Regulation (EU) No 1357/2014 of 18 December 2014

"Limit values" are when substances are so diluted in solutions that they no longer need to be classified as hazardous.

Limit values for pollution in the working atmosphere are also stated in "Regulations and measures and limit values, chapter 5-1 Appendix 1

<b>HP 1 - Explosive</b>			
Waste that, in the event of a chemical reaction, can develop gases with such a temperature, such pressure and such a speed that the environment can be damaged. This includes pyrotechnic waste, waste in the form of explosive organic peroxides and explosive self-reactive waste			
	<b>Hazard code</b>	<b>Hazard statement</b>	<b>In the event of diluted solutions - when to classify the substance as hazardous</b>
	Unst Expl	H200	When waste contains one or more substances classified with hazard code or hazard statement in this table, the waste should be assessed with respect to HP 1 - Explosive. If the presence of a substance, mixture or ingredient indicates that the waste may be flammable, it should be classified as hazardous waste of type HP 1.
	EXPL 1.1	H201	
	EXPL 1.2	H202	
	EXPL 1.3	H203	
	EXPL 1.4	H204	
	Self-react a	H240	
	Org- Perox A	H240	
	Self-react B	H241	
	Org- Perox B	H241	
<b>HP2 - Oxidizing</b>			
Waste that can, usually by the supply of oxygen, cause or contribute to the combustion of other materials			
	<b>Hazard code</b>	<b>Hazard statement</b>	<b>In the event of diluted solutions - when to classify the substance as hazardous</b>
	Ox Gas 1	H270	When waste contains one or more substances classified with hazard code or hazard statement in this table, the waste should be assessed with respect to HP 2 - Oxidizing. If the presence of a substance, mixture or ingredient indicates that the waste may be oxidizing, it should be classified as hazardous waste of type HP 2.
	Ox Liq 1	H271	
	Ox Sol 1	H271	
	Ox Liq 2, Ox Liq 3	H272	
	Ox Sol 2, Ox Sol 3	H272	
<b>HP 3 – Flammable</b>			
Flammable liquid waste: liquid waste with a flashpoint of less than 60°C or waste in the form of gas oil, diesel and light fuel oils with a flashpoint of at least 55°C and no more than 75°C			
Flammable pyrophageal liquid and solid waste: solid or liquid waste that even in small quantities can ignite within five minutes when in contact with air.			
Flammable solid waste: solid waste that is highly flammable or that can cause or contribute to fire through friction			

Flammable gaseous waste: gaseous waste that is flammable in air at 20 °C and a standard pressure of 101.3 kPa,

Water-reactive waste: waste that, upon contact with water, develops flammable gases in hazardous quantities,

Other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.

	<b>Hazard code</b>	<b>Hazard statement</b>	<b>In the event of diluted solutions - when to classify the substance as hazardous</b>
	Flam gas 1	H220	When waste contains one or more substances classified according to a hazard class code and hazard category code and hazard statement code specified in Table 3 - Flammable. If the presence of a substance indicates that the waste may be flammable, it should be classified as hazardous waste of type HP 3.
	Flam gas 2	H221	
	Aerosol 1	H222	
	Aerosol 2	H223	
	Flam liq 1	H224	
	Flam liq 2	H225	
	Flam liq 3	H226	
	Flam sol 1	H228	
	Flam sol 2	H228	
	Self react CD	H242	
	Self react EF	H242	
	Org perox CD	H242	
	Org perox EF	H242	
	Pyr liq 1	H250	
	Pyr liq 2	H250	
	Self-heat 1	H251	
	Self-heat 2	H252	
	Water-react 1	H260	
Water-react 2	H261		
Water react 3	H261		

#### **HP 4 Irritant - skin irritation and eye damage**

Waste that, upon contact, can cause skin irritation or eye damage (see also H314 under HP8)

	<b>Hazard code</b>	<b>Hazard statement</b>	<b>In the event of diluted solutions - when to classify the substance as hazardous</b>
	Skin corr 1A	H314	1 %
	Skin irrit 2	H315	20 %
	Eye dam 1	H318	10 %
	Eye irrit 2	H319	20 %

#### **HP 5 - Toxicity to specific organs /aspirational toxicity**

Waste that can cause toxicity to specific organs either as a result of exposure in a single case or by repeated exposure, or that can cause acute toxicity as a result of aspiration.

	Hazard code	Hazard statement	In the event of diluted solutions - when to classify the substance as hazardous
	Stot se 1	H370	1 %
	Stot se 2	H371	10 %
	Stot se 3	H335	20 %
	Stot re 1	H372	1 %
	Stot re 2	H373	10 %
	Asp tox 1	h304	10 %

### HP 6 - Acute toxicity

Waste that can cause acute toxicity through digestive, skin or inhalation exposure.

  	Hazard code	Hazard statement	In the event of diluted solutions - when to classify the substance as hazardous
	Acute tox 1 (oral)	H300	0,1 %
	Acute tox 2 (oral)	H300	0,25 %
	Acute tox 3 (oral)	H301	5 %
	Acute tox 4 (oral)	H302	25 %
	Acute tox 1 (dermal)	H310	0,25 %
	Acute tox 2 (dermal)	H310	2,5 %
	Acute tox 3 (dermal)	H311	15 %
	Acute tox 4 (dermal)	H312	55 %
	Acute tox 1 (inhal)	H330	0,1 %
	Acute tox 2 (inhal)	H330	0,5 %
	Acute tox 3 (inhal)	H331	3,5 %
	Acute tox 4 (inhal)	H332	22,5 %

### HP 8 - Corrosive

Waste that upon contact can be skin-corrosive (H314 1A will between 1-5% be considered HP4 irritant)

	Hazard code	Hazard statement	In the event of diluted solutions - when to classify the substance as hazardous
	Skin corr 1A	H314	5% (see also H314 1A under HP4, limit value 1%)
	Skin corr 1B	H314	5 %
	Sin corr 1C	H314	5 %

### HP 9 – Infectious material



Waste containing viable microorganisms or toxins of these that are detectable or reasonably safe can lead to disease in humans or other living organisms  
The award of HP 9 shall be assessed in order with the rules laid down in reference documents or legislation of the Member States.

### HP 10 – Toxic to reproduction

Waste that causes adverse effects on the sex function and reproductive ability of adult men and women as well as developmental toxicity in the offspring.

	Hazard code	Hazard statement	In the event of diluted solutions - when to classify the substance as hazardous
	Repr 1A	H360	0,3 %
	Repr 1B	H360	0,3 %

	Repr 2	H361	3 %
<b>HP 11 – Mutagenic</b>			
Waste that can cause a mutation, that is, a permanent change in the amount or structure of the gene material in a cell.			
	<b>Hazard code</b>	<b>Hazard statement</b>	<b>In the event of diluted solutions - when to classify the substance as hazardous</b>
	Muta 1A	H340	0,1 %
	Muta 1B	H340	0,1 %
	Muta 2	H341	1 %
<b>HP 12 - Discharge of an acute toxic gas</b>			
Waste that emits acutely toxic gases (Acute Tox. 1, 2 or 3) in case of contact with water, air or an acid. When waste contains a substance assigned to one of the supplementary hazard information <b>EUH029, EUH031 and EUH032</b> , it shall be classified as HP 12 hazardous waste in accordance with testing methods or guidelines.			
<b>HP 13 - Sensitizing</b>			
Waste containing one or more substances known to cause sensitizing effects on the skin or respiratory organs.			
	<b>Hazard code</b>	<b>Hazard statement</b>	<b>In the event of diluted solutions - when to classify the substance as hazardous</b>
		H317	10 %
		H334	10 %
<b>HP 14 Harmful for the environment</b>			
Waste that constitutes or may pose immediate or delayed risk to one or more sectors of the environment. (Chapter 11 of the Waste Regulations, Appendix 3)			
	<b>Ozone</b>	H420	0,1 %
	Aquatic acute 1	H400	25 %
	Aquatic chronic 1	H410	0,25 %
	Aquatic chronic 2	H411	2,5 %
	Aquatic chronic 3	H412	25 %
	Aquatic chronic 4	H413	25 %
<b>HP 15 Waste that may have a hazardous property mentioned above, but that is not directly stated in the original waste</b>			
When waste contains one or more substances assigned to one of the hazard statements or other hazards specified in the table below, the waste shall be classified as hazardous waste of type HP 15. This unless the waste is in such a form that under no circumstances does it exhibit explosive or potentially explosive properties.			
<b>Hazard statement</b>		<b>Hazard code</b>	
Risk of mass explosion in the event of fire		H205	
Explosive in dry condition		EUH001	
May form explosive peroxides		EUH019	
Explosive when heated in enclosed space		EUH044	

## 19.12 Table of incompatible chemicals (joint storage of chemicals)

The following table shows which substances can (+) and cannot (-) be stored together:

	Symbol	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1		Explosive	1														
2		Flammable gas		2													
3		Gas, non-flammable or toxic			3												
4		Toxic gas				4											
5		Flammable liquids					5										
6		Flammable solids <sup>1</sup>						6									
7		Self-heating substances							7								
8		Substances and mixtures, which in contact with water can emit flammable gases								8							
9		Oxidizing substances									9						
10		Organic peroxides										10					
11		Toxic and infectious substances											11				
12		Radioactive materials															
13		Corrosive substances, acids													13		
14		Corrosive substances, bases														14	
15		Various hazardous substances															15

English version: UiT.POA.hms.skj05\_06.05.2016

<sup>1</sup> Flammable solids. Self-reactive substances, desensitized explosives

## 19.13 Content – BeredSKAP cabinet chemical spills

### Content – Response kit (BeredSKAP) in the event of chemical spills

- Chemisorb for absorption of organics and aqueous solutions
- Chemisorb for absorption of alkalis (including a neutralizer and a pH indicator)
- Chemisorb for absorption of acids
- 2 x gloves barrier, size 9
- 2 x gloves barrier, size 7
- 2 x mask – protect against: small particles, oil and water based vapours, organic and inorganic gases, acid gases, ammonia and organic vapours.
- 2 x protective goggles x2
- Trash tray and brush
- Disposal bag, can be autoclaved
- 4 x shoe covers
- Safety cordon
- pH paper
- 2 x coveralls – protects against chemicals

## 19.14 Basic first aid in the event of chemical accidents

### Save the health and lives of others without putting yourself in danger

**Before** working with chemicals – see the material safety sheet for correct treatment and measures in case of spillage and/or injuries. Implement preventive actions

Alert locally and call if required:

- Ambulance **113**
- Duty doctor **77 62 80 00**
- Poison Control Centre **22 59 13 00**
- Internal emergency number **776 44444**

For use in further treatment, bring the material safety data sheet for the relevant chemical to the doctor

Inhaling of poisonous gas, vapor or smoke

- **Se material safety sheet** for correct treatment
- Fresh air + rest, recovery position

Ingestion of chemicals

- **Se material safety sheet** for correct treatment
- Rinse mouth with water
- Normally – drink, dilution effect
- Do not induce vomiting (there are exceptions, Cyanide)
- Contact doctor/Poison Control Centre

Chemical spills/splash in eyes

- **Se material safety sheet** for correct treatment
- Rinse immediately with plenty of water with the eyelid held wide open – 5-15 minutes
- Eye rinse at the basin. Cleansing bottles in the emergency response cabinet

Chemical spillage on skin

- **Se material safety sheet** for correct treatment
- Rinse with water, wash with soap and water
- Remove splashed jewelry, clothes and shoes
- If possible use emergency shower
- Use correct specific neutralizing and washing solutions for spilled substance. These **must** be located before working with the chemical

Burns

- Rinse with cold water for some minutes, then keep the injury immersed in 15-20°C water for a long period
- If cooling with water is not possible, use burn gel from the first aid cabinet

Electric shock

- Turn off the electricity (switch/socket/fuse), remove the injured person from the electricity source
- NB! be careful for water - conducts electricity
- If necessary: start cardiopulmonary resuscitation (CPR) = 30 + 2
- Scalding injuries are treated as burns. Note - there may be major injuries in the dermis/muscular tissue even though the surface looks fine. Check for entrance and exit wounds
- Contact ambulance/medical assistance

19.15 Room card (example)

## Hardwork lab

<b>Brannfarlig væske</b> (maks antall liter): <b>20</b>		<b>Gass undertrykk</b> (maks antall liter): <b>100</b>	
 <b>Biologisk fare</b>		 <b>Gass under trykk</b>	
 <b>Laserstråling</b>		 <b>Etsende stoffer</b>	
Rom nr:	1.123	Romkort utfylt (dato)	28.01.2020
<u>Kontaktperson(er)/laboratorie ansvarlig</u>			
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Internt varslingsnummer UiT 776 44 444		Avarn vakt mobil  924 49 277	

Ambulanse 113

Brann 110

Politi 112



