Introduction for newcomers Part 1

Content

Part 1 *– mandatory for everyone*

- Security, Safety and General information - mandatory for everyone
- Laws, regulations, rules and organization of work environment
- Karolinska Institutet's Environment and Sustainable Development efforts
- Fire safety
- Waste handling
- Guided tour

Part 2 *– mandatory for laboratory personell*

- More waste handling
- More fire safety
- Laboratory work and safety *– mandatory if working in lab*
- (Animal Experiments *– Intro by José Inzunza, BioNut only*)
- Guided tour *– for those that didn't do it after part 1*

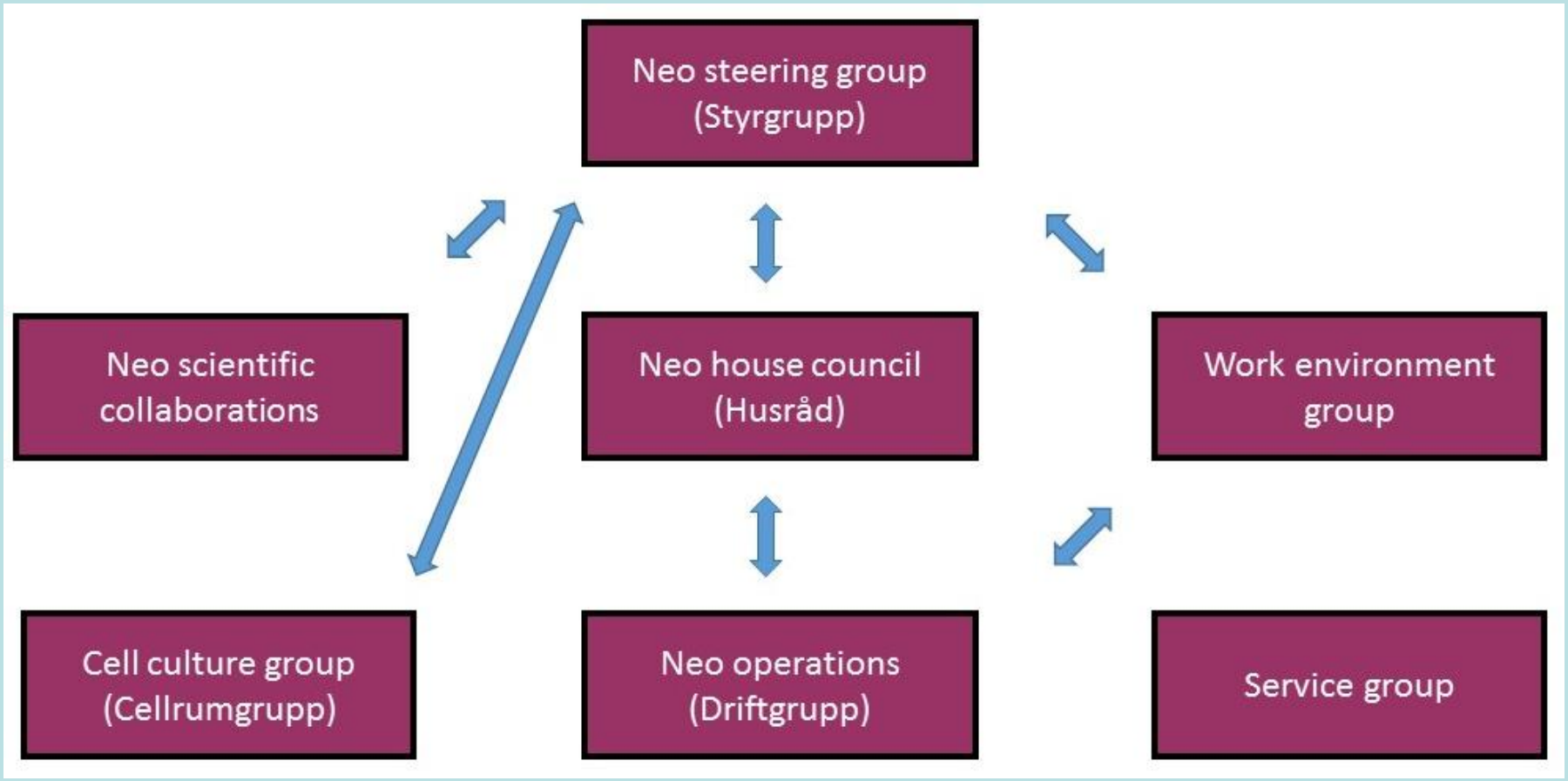
This presentation is available at Neo internal web, https://ki.se/en/staff/neo-work-environment-and-safety

Radiation safety (KS radiation safety) – separate *mandatory course – if working with radioisotopes.*

Instructions how to sign up for a course is in this document:
https://www.karolinska.se/globalassets/global/sjukhusfysik/instruction-lartorget-in-english-for-ki.pdf

Security, Safety and General information

Neo Organization



Neo steering group

Duties/Function:
The steering group deals with overall issues regarding the Neo building such as infrastructure, economy and policy that breaches across departments.

Members of the group
Eric Westman, NVS (chairman)
Eva Hellström Lindberg, MedH
Karl Ekwall, BioNut
Klas Karlsson, MedH
Lennart Nilsson, BioNut
Maria Eriksdotter, NVS
Matti Sällberg, LabMed
Mikael Rydén, MedH
Thomas Tinglöv, BioNut
Ulla Cronfalk-Hernlund, NVS
Martin Bergö, BioNut

E-mail
Neo.steering@biosci.ki.se

Neo house council

Duties/Function:
The house council sets the common rules for the building and decides how the facilities in Neo should be used. The group has an overall view on how the localities are used in Neo. This is important when a new research group arrives to Neo, when research groups need to move within Neo or expand within Neo. Important that the house council is notified when a research group wants to expand or if a group shrinks, so we can use the space in Neo in an efficient way to reduce costs for rent, work efficiently and increase collaborations. The Steering group has delegated the responsibilities and decision-making of these issues to the house council.

Members of the group
Thomas Tinglöv, BioNut (convening)
Lennart Nilsson, BioNut
Lina Cordeddu, BioNut
Taher Darreh-Shori,NVS
Janne Johansson, NVS
Petter Höglund, MedH/HERM

E-mail
Neo.house@biosci.ki.se

Neo operations

Duties/Function:
The group Neo operations oversees **issues related to daily operations** in Neo. This group will then coordinate the issues and delegate the task to the appropriate person, group or the property owner (Hemsö). **Incidents** related to work-safety should immediately be reported to right instance. The issue should at the same time also be reported to the Neo operations group so they can make sure the issues are solved ASAP.

Members of the group
Johan Dethlefsen, BioNut (convening)
Xiufeng Xu, Floor 6 / BioNut
Monika Jansson, Floor 7 / MedH
Nina Kronqvist Floor 8 / NVS

E-mail
Neo. operations@biosci.ki.se

Neo Work environment group

Duties/Function:
This group deals with all issues related to work environment (fire safety, lab safety and general work environment) in Neo. The group works closely together with the steering group and Neo operations as well as the work environment groups at all the departments. The group organizes fire drills and safety rounds in Neo.

Members of the group
Håkan Ottosson, BioNut (convening)
Ana Maria Suzuki, MedH/Lipid
Sofia Fridén, NVS
Tiina Skoog, BioNut
Tove Berg, MedH /ICMC
Gaby Åström, MedH/Lipid
Thais De Castro Barbosa, MedH/Lipid
Kerstin Nordling, NVS
Monika Jansson, MedH/HERM
Johan Dethlefsen, BioNut

Affiliated members (Safety officers)
Taher Darreh-Shori, NVS
Belinda Pannagel, MedH/HERM

E-mail
Neo. weg@biosci.ki.se

Neo Service group

Duties/Function:

- Shipments and deliveries including supplier contacts
- Work-environment and safety related laboratory supplies
- Supplier contacts for contracted services, coffee and cleaning
- Lab coats, glass storage, dish washing and autoclaving
- Mail
- Janitorial services
    - Waste
    - Access card management
    - Gas handling
    - Coordination freezer hotel (room, connection, alarm)
    - Alarm functions (fire / evacuation)
    - Joint administration Neo (invoice management)
    - Contact with the landlord and the operating organization
    - Contact purchase and service instrument and equipment

Members of the group

Inger Moge – goods receipt, card handling
Johan Dethlefsen - janitorial and other
Petri Köttö - dishwashing and autoclaving
Dawud Nantor - goods receiving, dishwashing, autoclaving, janitorial

E-mail

Neo. service@biosci.ki.se

Neo Scientific collaborations

Duties/Function:

1. Make a suggestion on how the scientific cooperation in Neo can increase between groups and departments.
2. Discuss forms for coordinating seminar series in Neo and organizing joint seminar series to enhance potential collaborations.
3. Make a proposal on form and scientific content for the next neo retreat, scheduled for autumn 2019.

Members of the group

Petter Höglund, MedH/HERM (convening)
Beatriz Tavira, MedH/Lipid
Maria Eriksson, BioNut
Anna Rising, NVS
Johanna Ungerstedt, MedH/HERM
Juan Acosta, MedH/Lipid
Alastair Kerr, MedH/Lipid
Eva Hellström Lindberg, MedH/HERM
Laetitia Lemoine, NVS
Emilia Schwertner, NVS

E-mail

Neo. scientific@biosci.ki.se

Cell culture group

Duties/Function:
Coordinate the work in the cell culture rooms in Neo

Members of the group
Eva Hellström Lindberg, MedH/HERM (convening)
Mattias Carlsten, MedH/HERM
Erik Sundström, NVS
Monika Jansson, MedH/HERM
Pekka Katajisto. BioNut
Maria Kasper, BioNut
Helene Olofsson, BioNut
Per Antonson, BioNut
Mikael Rydén, MedH/Lipidlab
Jurga Laurencikiene, MedH/Lipidlab
Julian Walfridsson, MedH/HERM

E-mail
Neo.cell@biosci.ki.se

Introduction Checklist (1/2)

- **Fire alarm**
  - Explain the **fire alarm signal**
- **Actions in the event of a fire alarm**
  - Explain the procedures in the event of a fire alarm
- **Evacuation plan**
  - Show and explain symbols and the evacuation strategy, and explain the importance of good access within evacuation routes.
- **Evacuation station**
  - Show where these are, and go through the equipment and the instructions.
- **Firefighting equipment**
  - Show the position of firefighting equipment, and its areas of application and handling.
- **Assembly point**
  - Explain where the assembly point is and show in reality.
- **Self-monitoring** of fire protection
  - Explain the routines for self-monitoring.
- **Responsibility**
  - Everyone is responsibility for taking action and reporting the discovery of shortcomings in fire protection.
- **Specific risks**
  - Provide information about KI's rules for dealing with **flammable goods** and **gas bottles**, and where they are stored. Other specific risks in the lab, e.g. biohazards, radiation.

Introduction Checklist (2/2)

- **Fire training**
  - Plan time for basic fire training. You book the training yourself using a link at https://ki.se/en/staff/fire-safety
- **Fire safety rules**
  - Go through KI's **fire safety** rules (available on the KI web under "Fire safety") and the **Neo Fire Safety** document.
- **Information on the KI web**

  Set aside time for the new employee to read through the **fire safety, work environment** and **lab safety** information on the KI web:
  - Neo Work Environment , Lab and Fire safety etc.: https://ki.se/en/staff/neo-work-environment-and-safety
  - KI Work Environment: https://ki.se/en/staff/work-environment-and-health
  - KI Fire safety: https://ki.se/en/staff/fire-safety
  - KI Lab safety: https://ki.se/en/staff/laboratory-safety
  - KI Biosafety: https://ki.se/en/staff/biosafety
  - KI Radiation safety: https://ki.se/en/staff/radiation-protection
  - Checklist: https://ki.se/sites/default/files/checklist_for_workplace_fire_safety_induction_for_new_employees.pdf
  - And a lot more!

Security, Safety and General Information

- Be careful with whom you let inside our department
  - Ask what the person who you don't recognize what he/she wants
  - Follow him/her to the person/location in question
  - Call police (112, from an office phone 112 or 00112) or security (local office 585 88 88 or central office 619 50 00) if you feel threatened

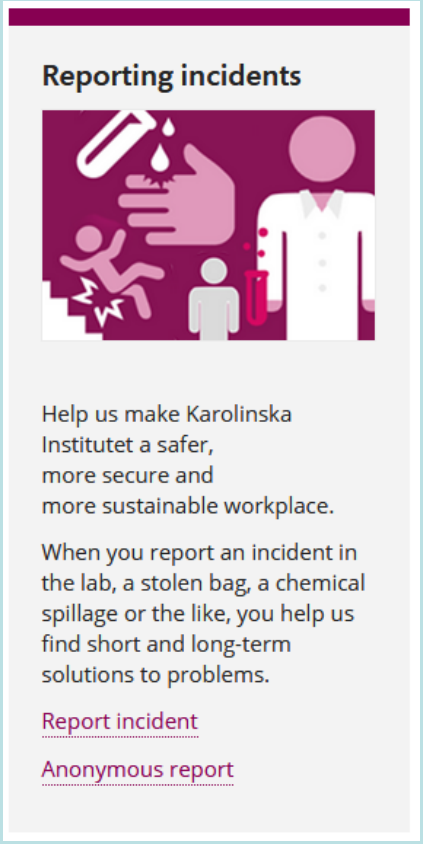
KI Intranet

Add these pages as start pages in your web browser:

- https://ki.se/en/staff (https://ki.se/medarbetare/start)
- https://ki.se/en/staff/neo

In case of emergency, call SOS Alarm: 112

KI Alarm: 08-524 80 100

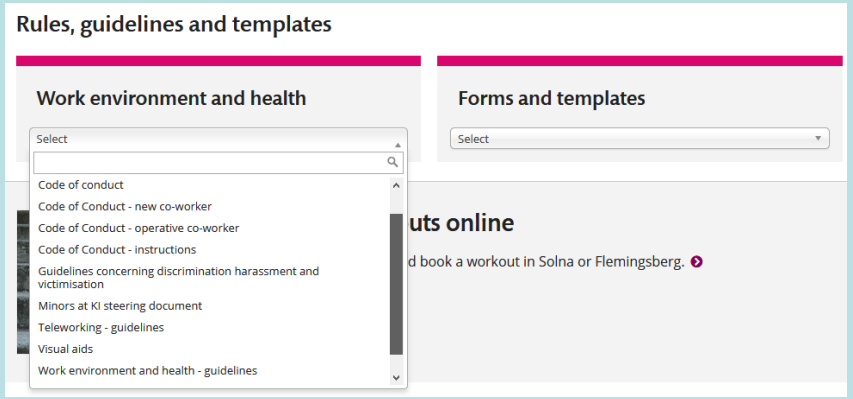


https://ki.se/en/staff/if-something-happens
https://ki.se/en/staff/reporting-incidents
https://ki.se/en/staff/submit-an-anonymous-report-of-an-incident

KI Intranet

- http://ki.se/en/staff/your-employment

- https://ki.se/en/staff/work-environment-and-health-0



- https://ki.se/en/staff/introduction-for-new-staff

Security and general information

- Try to keep all doors closed at all times (fire safety and lab safety)
- Close all doors when leaving
- Report problems and malfunction to Neo.operations@biosci.ki.se

Security and general information

- If a water leakage occurs which you can not stop
  - During working hours call
    Johan Dethlefsen (524 812 18)
    Neo.operations@biosci.ki.se
  - During evenings and weekends
    - Nokas (Security): 524 86060
    - Hemsö: 0771 777 111
  - Phone numbers in the safety manual

Alarms – more of this later

- Fire/evacuation alarm

Delta Repeater

- Low oxygen alarm

- High carbon dioxide alarm
- Freezers and Cold- and freezer room alarm
  - Temperature alarm
  - Person alarm

- Local emergency/spill alarm

- Person alarm for rest rooms and handicap toilets

A person is unconscious

- Check if he/she is breathing
  - If OK put the person in recovery position and call for the ambulance (112 or 585 860 00)
- If uncertain or if no pulse pick up defibrillator in corridor, start it and follow the instructions
- http://www.youtube.com/watch?v=0Wdw3Wrykshow

Laws, regulations, rules and organization of work environment

Laws & provisions regarding work environment applicable to KI

Lagar och förordningar

- Arbetsmiljölagen (AML)
- Arbetsmiljöförordningen (AMF)
- Andra arbetsrättsliga lagar (t.ex. arbetstidslagen ATL, medbestämmandelagen MBL, lagen om anställningsskydd LAS och semesterlagen)
- Socialförsäkringsbalken (reglerar bl.a. arbetsskadeförsäkringen och arbetsgivares rehabiliteringsansvar)
- Lag om skydd mot olyckor (reglerar bl.a. brandskydd/brandsäkerhet)
- Diskrimineringslagen (sju diskrimineringsgrunder i arbete och studier)
- Tobakslagen
- Miljöbalken
- Kemikalielagstiftning (Kemikalieinspektionen)
- Strålskyddslagstiftning (Strålskyddsmyndigheten)
- Elsäkerhetslagstiftning (Elsäkerhetsverket)
- Plan och bygglagen (Boverket)

Föreskrifter (AFS:er)

- Övergripande metodföreskrifter
  - 1994:01 Arbetsanpassning och rehabilitering
  - 1999:07 Första hjälpen och krisstöd
  - 2001:01 Systematiskt arbetsmiljöarbete (”kvalitetssystemet” för arbetsmiljöarbetet, senast ändrad ht 2008)
- Organisatoriska och sociala aspekter
  - 1982:03 Ensamarbete
  - 1982:17 Anteckningar om jourtid, övertid och mertid (senast ändrade i januari 2001)
  - 1993:02 Våld och t i arbetsmiljön
  - 1993:17 Kränkande särbehandling i arbetslivet (upphävdes 31 mars 2016)
  - 2015:04 Organisatorisk och social arbetsmiljö (trädde i kraft 31 mars 2016)
- Ergonomi, utformning, varselmärkning etc.
  - 1998:05 Arbete vid bildskärm
  - 2008:13 Skyltar och signaler (senast ändrad juni 2015)
  - 2009:02 Arbetsplatsens utformning (senast ändrad i juni 2013)
  - 2012:02 Belastningsergonomi
- Tekniska anordningar, maskiner, fysikaliska faktorer etc.
  - 1981:14 Skydd mot skada genom fall
  - 1981:15 Skydd mot skada genom ras
  - 1994:54 Arbete med högtrycksstråle (gäller sprutvattentryck > 25 bar)
  - 1999:03 Byggnads- och anläggningsarbete (senast ändrad jan. 2015)
  - 2001:03 Användning av personlig skyddsutrustning (senast ändrad i jan. 2011)
  - 2003:06 Besiktning av lyftanordningar och vissa andra tekniska anordningar (ändrad i juli 2014)
  - 2004:03 Stegar och arbetsbockar (senast ändrad i juli 2014)
  - 2005:15 Vibrationer (senast ändrad i AFS 2015:05)
  - 2005:16 Buller
  - 2006:04 Användning av arbetsutrustning (senast ändrad i jan. 2011)
  - 2006:06 Användning av lyftanordningar och lyftredskap (senast ändrad i jan. 2011)
  - 2008:03 Maskiner (senast ändrad i juli 2014)
  - 2009:07 Artificiell optisk strålning (senast ändrad i juli 2014)
  - 2013:04 Ställningar
  - 2016:03 Elektromagnetiska fält (trädde i kraft 1 juli 2016)
- Medicin, biologi och kemi
  - 2005:01 Mikrobiologiska arbetsmiljörisker – smitta, toxinpåverkan, överkänslighet (ändrad i juli 2014)
  - 2005:05 Cytostatika och andra läkemedel med bestående toxisk effekt (ändrad i nov. 2009)
  - 2005:06 Medicinska kontroller i arbetslivet (senast ändrad i september 2015)
  - 2011:02 Innesluten användning av genetiskt modifierade mikroorganismer
  - 2014:43 Kemiska arbetsmiljörisker (senast ändrad i juni 2015, bl.a. har regler om härdplaster införlivats)
  - 2015:07 Hygieniska gränsvärden och åtgärder mot luftföroreningar (trädde i kraft 1 juni 2016)
- Arbete med djur
  - 2008:17 Arbete med djur
  - 1990:11 Arbete med försöksdjur
- Trycksatta anordningar etc.
  - 2001:04 Gasflaskor (senast ändrad i juli 2014)
  - 2002:01 Användning av trycksatta anordningar (senast ändrad i juli 2014)
  - 2005:03 Besiktning av trycksatta anordningar (senast ändrad i juni 2016)
  - 2016:01 Tryckbärande anordningar
  - 2016:02 Enkla tryckkärl
- Föreskrifter för särskilda grupper av arbetstagare
  - 2007:05 Gravida och ammande arbetstagare (senast ändrad i juni 2015)
  - 2012:03 Minderårigas arbetsmiljö (senast ändrad i juni 2015)

Laws, regulations and rules

- The Laws[1] (the Work Environment Act and other)
- The Provisions (AFS[2] from Swedish Work Environment Authority, Arbetsmiljöverket)
- New Provisions
  - Biological Risks (Smittrisker AFS 2018:4, replaces AFS 2005:1)
  - Chemical risks (AFS 2018:2, updating AFS 2011:19)
  - GMM (AFS 2018:9, references to other AFS' changed),
  - Signs (AFS 2018:13, text changed from "smittrisk" to "biologisk fara" on signs)
- The Safety Manual[3] for Neo
- Room or equipment specific instructions
  - Isotope labs
  - Virus labs
  - Ultra centrifuges
  - …

1. https://www.av.se/en/work-environment-work-and-inspections/acts-and-regulations-about-work-environment/
2. https://www.av.se/en/work-environment-work-and-inspections/publications/foreskrifter/
3. https://ki.se/en/staff/neo-work-environment-and-safety

Other important laws

- Law against discrimination[1]
- Provision against employee victimisation[2] (kränkande särbehandling); AFS 1993:17

1. http://www.government.se/contentassets/6732121a2cb54ee3b21da9c628b6bdc7/oversattning-diskrimineringslagen_eng.pdf
2. http://www.do.se/lag-och-ratt/diskrimineringslagen/
3. https://www.av.seobalassets/filer/publikationer/foreskrifter/engelska/victimization-at-work-provisions-1993-17.pdf
4. https://www.av.seobalassets/filer/publikationer/foreskrifter/krankande-sarbehandling-i-arbetslivet-foreskrifter-afs1993-17.pdf

The Safety Manual

- The Neo Safety Manual is divided into several separate documents
  - General lab rules
  - Lab, Bio, Radio, Fire Safety
  - Waste Handling
  - Etc.
- Keep a copy at hand
- If info not in manual, check latest version on the Neo web and if that does not help ask someone in the lab or in the work environment group

Work Environment

What is work environment?

The work environment contains all factors and conditions in the work:

- Technical
- Physical
- Work organization
- Social
- Work content

Work environment act – General obligations

- **Employer** and **employee shall co-operate** to establish a good working environment
- The employer shall **prevent** the employee from being **exposed to health hazards** or **accident risks**, in particular when working alone.
- Keep all **equipment in a good state** of repair
- The employer shall ensure that the **employee knows** the conditions at work and that he/she is informed about possible hazards
- The **employee shall assist** in work relating to the working environment and follow laws, provisions and other regulations. The **employee should inform employer** or safety officer (skyddsombud) **about problems** in the work environment

Work environment act
Co-operation between Employers and Employees

- Handling of work environment issues should be organized by the employer and employee
- There should be safety representatives at the work place (appointed by the union)
- The safety representative has the right to request actions to be taken and if needed to suspend work

Provisions

- Most issued by the Swedish Work Environment Authority[1] (Arbetsmiljöverket), but some issued by other authorities (fire safety, radiation safety, etc)
- Available as pdf files[2]
- List of provisions in an appendix to the Safety Manual[3]

1. http://www.av.se/
2. https://www.av.se/en/work-environment-work-and-inspections/publications/foreskrifter/
3. Only in the web version.

Guidelines and rules related to work environment

General
- Children at work
- Code of Conduct - new co-worker
- Code of Conduct - operative co-worker
- Code of Conduct - instructions
- Collaboration during constructions (Swedish)
- Forms of collaboration KI and Karolinska
- Instructions for risk assessment in the event of changes to activities
- Local work contracts 2006 (Swedish)
- Near-accidents and occupational injuries
- Pets at work (Swedish)
- Traffic safety guidelines (Swedish)
- Vaccinations
- Guidelines for solitary work
- Work environment and health guidelines

Safety inspections
- Checklist for evaluation of the physical working environment

Psychosocial work environment
- Alcohol and drug policy
- Preventing and taking action in cases of discrimination, harassment and victimization of employees

Laboratory safety
- Blood-handling
- Emergency procedure for larger spills and releases of environmental and health hazardous chemicals
- Instruction peroxide forming chemicals
- Laboratory waste management and emissions of chemicals into wastewater
- Prevention of Experimental Allergy (in Swedish)
- Radiation protection rules
- Registration and inventory of chemicals
- Remediation certificate (in Swedish)
- Rules for handling liquid nitrogen
- The use of anesthetics in animal experiments (in Swedish)
- Quick user guide for disposal of chemical residues into the waste water system

https://ki.se/en/staff/rules-and-guidelines-a-z
https://ki.se/en/staff/work-environment-and-health
https://ki.se/sites/default/files/work_environment_and_health_guidelines.pdf

Law against discrimination or harassments - Definitions

- Discrimination
  - People are **not treated equally**
    - Directly negative decisions for the person in question (e.g. not accepted for a position because sitting in a wheel chair)
    - Indirectly by applying a seemingly neutral regulation (e.g. only accepting student taller than 190 cm for a program, would be negative for women)
  - Not allowed to order or instruct someone else to discriminate
  - Not allowed to punish someone w informs about discrimination
- Harassments
  - **Violating someone's dignity** in connection to discrimination (e.g. telling racist jokes)
  - Including sexual harassments

https://ki.se/sites/default/files/2018/08/14/guidelines_concerning_discrimination_harassment_and_victimisation_180626.pdf

Discrimination

1. Direct discrimination: that someone is disadvantaged by being treated less favourably than someone else is treated, has been treated or would have been treated in a comparable situation, if this disadvantaging is associated with sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation or age.
2. Indirect discrimination: that someone is disadvantaged by the application of a provision, a criterion or a procedure that appears neutral but that may put people of a certain sex, a certain transgender identity or expression, a certain ethnicity, a certain religion or other belief, a certain disability, a certain sexual orientation or a certain age at a particular disadvantage, unless the provision, criterion or procedure has a legitimate purpose and the means that are used are appropriate and necessary to achieve that purpose.
3. Inadequate accessibility: that a person with disability is disadvantaged through a failure to take measures for accessibility to enable the person to come into a situation comparable with that of persons without this disability where such measures are reasonable on the basis of accessibility requirements in laws and other statutes, and with consideration to
   - the financial and practical conditions,
   - the duration and nature of the relationship or contact between the operator and the individual, and
   - other circumstances of relevance

Discrimination

The law covers several areas, but **for employees it applies when the employer**:

- Decides on a question of **employment**
- Decides on promotion or selects an employee for **training** for **promotion**
- Applies **salary** conditions or other employment conditions
- Directs and **allocates work**
- Gives notice to or takes other action in relation to an employee

What to do when experiencing or observing violations of the law or observing employee victimization?

Report to any of these

- Nearest supervisor or Head of department admin (AC)
  - Thomas Tinglöv (BioNut), Xxx (HERM), Xxx (Lipidlab), Xxx (NVS)
- Equal opportunities representatives
  - Monica Ahlberg (BioNut), xxx
- Human resource director / consultants
  - Psychologist
  - Previa 0771-23 00 00
- Trade unions, https://ki.se/en/staff/union-organisations
- For postgraduate students:
  - Unit Manager at the postgraduate education unit
  - BioNut: Director of Postgraduate Education, Lars-Arne Haldosén
  - The Postgraduate Student Ombudsman
  - Student Health Services
- Equal treatment:
  - https://ki.se/en/staff/equal-treatment
    KI Coordinator equal treatment: ulrika.hellden@ki.se
  - https://ki.se/en/education/equal-treatment-for-students
- Staff support - around the clock phone counselling, all employees, scholarship-funded doctoral and post-doctoral students: **http://ki.se/en/staff/staff-support-around-the-clock-telephone-counselling**
  Phone: **0200- 21 63 00**

Keep notes

- What happened
- W did it
- When, date and time

https://ki.se/en/staff/organisation-roles-and-responsibility-relating-to-the-work-environment

Provision against employee victimization (kränkande särbehandling)

"By victimization is meant recurrent **reprehensible** or **distinctly negative actions** which are directed against **individual employees** in an offensive manner and can result in those employees being placed outside the workplace community."

Appraisal interviews (medarbetar- eller utvecklingssamtal)

- Everyone employed at KI has the right to one **appraisal interview** per year
- Should be held with the **nearest manager** (normally group leader)
- Initiative should come from nearest manager
- Should be **planned by both** parties

- Guidelines at KI internal web page

Stay overnight at work / solitary work

- According to KI regulations work at night is **not allowed**
- Exemptions can be made with written permit from head of department

https://ki.se/en/staff/rules-and-guidelines-a-z

https://ki.se/sites/default/files/2018/11/29/rules_for_working_alone_oct.2018.pdf
https://ki.se/sites/default/files/ensamarbete_final.pdf

Children at the work place

- Children are not allowed at work, but can make a short visit
- Special rules when persons under 18 are working in the lab

https://ki.se/sites/default/files/2018/06/14/minors_at_ki_._steering_document_2014.pdf

Risks during pregnancy

- 15-30% of confirmed pregnancies end in miscarriages
- Serious malformations on delivery in 2% of babies
- Greatest sensitivity to external factors during the first 3 months
- However, even after that the foetus and the various organ systems continue to develop

Known or suspected risk factors for pregnancy that can occur in lab

- Organic solvents
- Heavy metals (lead, mercury, cadmium, arsenic, chromium, nickel)
- Anaesthetic gases
- Cytostatic drugs
- Reproduction-disturbing chemicals (dimethyl formamide, 2-etxyethanol, 2-etxyethyl acetate, imidazolidin-2-tion, carbon disulphide, 2-metxy ethanol, 2-metxy ethyl acetate, etc (see www.av.se))
- Radiation (separate provision)
- Infectious agents
- Stress

Pregnancy – provision (1/2)

An employer w has been notified about the condition should directly investigate if the woman in her work is exposed to any of the following work environment factors:

- Physical factors
- Load ergonomic (belastningsergonomiska) factors
- Biological agents
- Chemical substances
- Psychosocial factors
- Other condition

Pregnancy – provision (2/2)

- A risk assessment should be made
- Suitable measures should be taken
- Eliminate risks or maybe switch to other duties

https://ki.se/sites/default/files/pregnant_and_breastfeeding_employees_-_support_document_for_risk_assessments.pdf

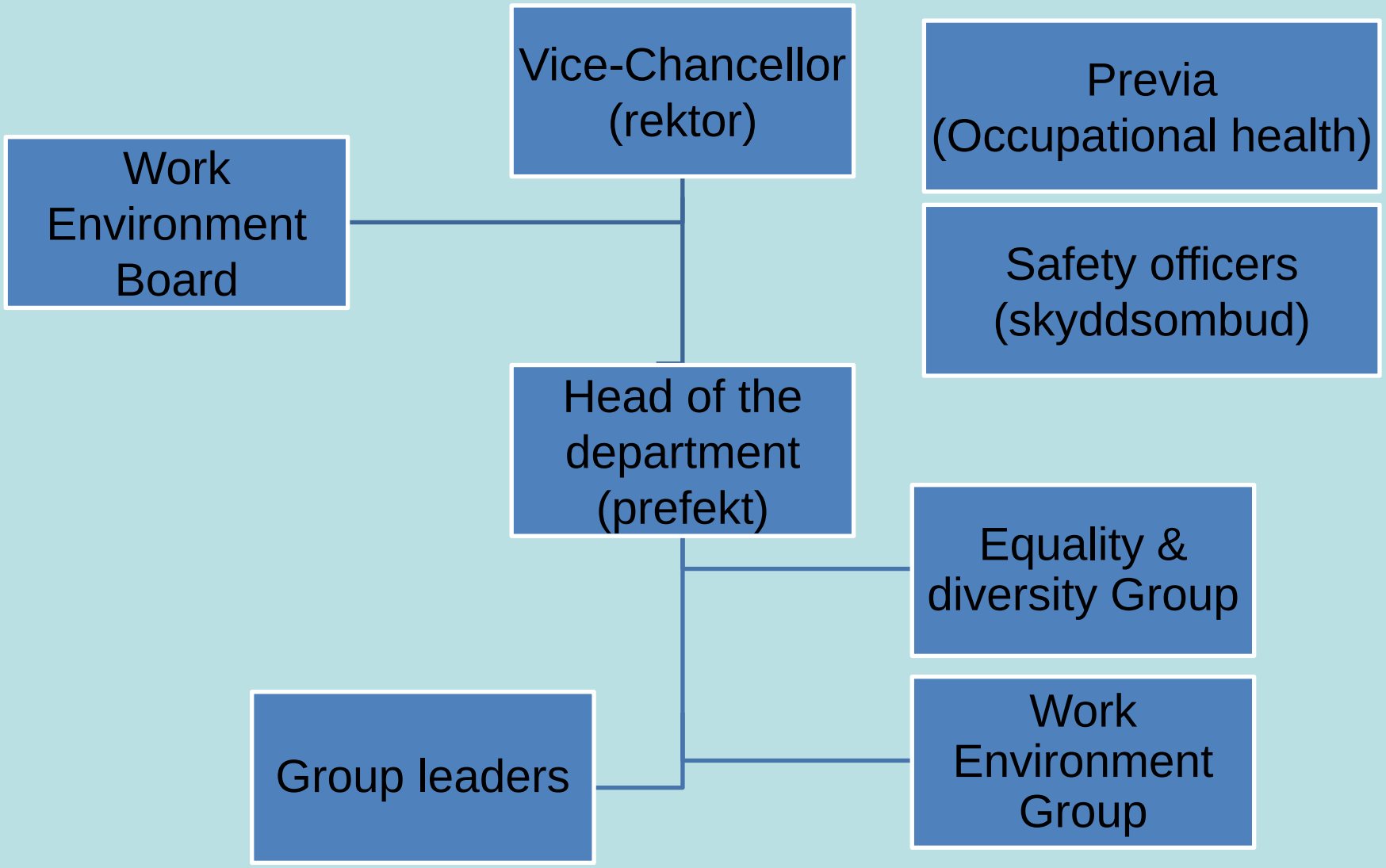
AFS 2007:5 changes in AFS 2018:7

Rest rooms (vilrum)

- There are rest rooms available on floor 6 (6812), 7 (7010) and 8 (8824) in case you don't feel well and need to lay down

- Always tell someone that you are using it, so they can keep an eye on you, if your illness is getting worse

Work Environment Organization at KI



Neo Working Environment Group

Håkan Ottosson	BioNut (convening)
Gaby Åström	MedH/Lipid
Ana Maria Suzuki	MedH/Lipid
Thais De Castro Barbosa	MedH/Lipid
Sofia Fridén	NVS
Kerstin Nordling	NVS
Tiina Skoog	BioNut
Monika Jansson	MedH/HERM
Tove Berg	MedH/ICMC
Johan Dethlefsen	BioNut

Affiliated members

Taher Darreh-Shori	NVS (Safety officer)
Belinda Pannagel	MedH/HERM (Safety officer)

Neo WEG mail list: neo.weg@biosci.ki.se

https://ki.se/en/staff/neo-work-environment-and-safety

BioNut Working Environment Group

- Håkan Ottosson (RST, floor 8, chairman)
- Per Antonson (JGU)
- Lina Cordeddu (KEK)
- Johan Dethlefsen (Service, floor 8)
- Caroline Jegerschöld (HHE)
- Eva Nordlander (administration, floor 8)
- Helene Olofsson (SST)
- Maryam Saghafian (MKA)
- Xiufeng Xu (MBE)

NVS Working Environment Group

- Ulla Cronfalk-Hernlund, chairperson, Central ledningsadministration
- Marie Iwarzon, Sektionen för omvårdnad
- Kristina Johnell, Sektionen för Aging Research Center (ARC)
- Eric Westman, Sektionen för klinisk geriatrik
- Helena Karlström, Sektionen för neurodegeneration
- Mona Hellstadius, Central ledningsadministration

https://ki.se/nvs/arbetsmiljogruppen-nvs

MedH Working Environment Group

- Mari Gilljam 08-585 824 42, Chairperson
- Elisabeth Henriksson 08-585 813 63, Chairperson
- Julian Walfridsson 08-585 836 23, Equal Treatment
- Emma Karlsson 08-524 833 06
- Johanna Snäll 08-585 822 76
- Yvonne Edlund 08-524 833 13
- Tove Ramos Berg 08-524 82 518, Safety representative
- Christina Johansson 08-524 836 46
- Annamaj Stolt 08-524 833 11
- Belinda Pannagel , Safety representative

https://ki.se/medh/arbetsmiljogruppen-pa-medh

Safety Officers
Skyddsombud

• BioNut	Vacant	
• MedH / ICMC	Tove Berg	08-524 825 18
• MedH / LipidLab	.	
• MedH / HERM	Belinda Pannagel.	08-
• NVS	Taher Darreh-Shori	08-585 836 12

Main safety officer (Huvudskyddsombud), Campus Flemingsberg
Venus Azhary, venus.azhary@ki.se

https://ki.se/en/staff/organisation-roles-and-responsibility-relating-to-the-work-environment
https://ki.se/sites/default/files/rutin_att_utse_skyddsombud_rev_ht2018.pdf

Working Environment Group

Helping the head of department (prefekt) with management of environment and work environment issues

- Carry out surveys (safety inspections, annual internal reviews, etc)
- Investigate causes to accidents and near accidents and draw conclusions
- Make annual action plans for environment and work environment issues
- Inform about new regulations and rules
- Initiate education in environment or work environment matters
- Be a link to the central Work Environment Board (arbetsmiljönämnden) and to Previa (occupational health)

Previa (contract with KI)

- Occupational health and hygiene
- Physician
- Physiotherapist
- Nurse
- Behavioral scientist/psychologist
- Working environment engineers

Two visits per year free of charge

http://www.previa.se/
https://ki.se/medarbetare/previa-foretagshalsa
https://ki.se/en/staff/previa-occupational-health-service

Accidents, near accident and work related illness

- Report all accidents and near accidents to BioNut administration (or use intranet report)
- Vaccination against Hepatitis B (or A) if working with human biological material – contact Previa
- Make a health check up at Previa before starting to work with
  - Animals
  - Polyacrylamide gels (>100 g dry substance per year)
  - CMR chemicals (if high exposure level)

http://ki.se/en/staff/reporting-incidents
https://ki.se/en/staff/previa-occupational-health-service
https://ki.se/en/staff/vaccinations
https://ki.se/en/staff/laboratory-animal-allergy
https://internwebben.ki.se/sites/default/files/vaccination_ki_2013.pdf

Introduction to work environment and health management

- http://www.ki.se/uu/Introutb/Work_environment_health/story.html

Environment and sustainable development

Environment and sustainable development - Guidelines

- Through **research** and **education** contribute with knowledge on health and sustainable development
- Use **energy efficiently** and in the future become climate-neutral
- Reduce the climate impact of our **business trips**
- Set environmental and ethical requirements for our **procurements** and **purchasing**
- Minimize the health and environmental risks in the **laboratory activities**
- **Sort waste** at source and **reduce** the amount of waste
- View acts, ordinances and other requirements as the minimum level needed for our activities
- Carry out environmental and sustainability work that is continually being improved

See Guidelines for the environment and sustainable development:
https://ki.se/sites/default/files/2017/10/18/miljohu_riktlinjer_en_20111128.pdf

What should I do?

- Follow rules in Safety Manual
- For energy saving purposes
  - Close front cover of hoods when not in use
  - Turn off computer and lights when leaving (including corridors, if possible)
- Waste
  - Print and copy sparingly and double-sided
  - Sort waste

Rules of operation that concern your work

- KIs travel regulations, https://ki.se/sites/default/files/rules_business_travel_170501_ext.pdf
- If you procure or purchase products and services
  - KIs guidance for procurement and purchasing
    - Purchasing manual, https://ki.se/sites/default/files/purchasing_manual.pdf
    - Procurement system, https://ki.se/en/staff/purchase-and-public-procurement
- If you carry out laboratory work*
  - KI rules regarding laboratory safety (health and environment)
  - The work environment authority regulations

** KI departments located in hospitals should follow hospital rules regarding waste and sewage.*

Fire Safety
Part 1

Fire protection work

- Main aims of fire protection work
  - Avoid that a fire will start
  - Reduce the effects of a fire
    - Save human lives
    - Save other things

Causes of fires in Sweden

- Stoves (should have timer)
- Using heating
- Smoking
- Candles
- Arson
- Electrical problems or handling of equipment (e.g. coffee maker)
- Working with heated sources or flames

Fire safety organization at Neo

- Fire Safety Supervisor
  - Evacuation exercises – Coordinated by Neo WE
  - Making sure that things are working
  - **BioNut**: Håkan Ottosson
  - **NVS**: Vivan Söderlund
  - **MedH**: Klas Karlsson
  - Training of personnel (done by central KI)
    - http://ki.se/en/staff/fire-safety
    - http://ki.se/sites/default/files/training_within_fire_safety_20170824.pdf
- Fire Safety Controllers – one in each group and at least one in each fire cell
  - People with more training
  - Daily supervision of fire safety (also a responsibility for everyone)
- Supervisor Flammable Goods - Manager for work with flammable and explosive chemicals and gases
  - **BioNut**: Roger Strömberg, manager
    Johan Dethlefsen (deputy) and give also permit to work with heated sources
  - **NVS**: Johanna Wanngren
  - **MedH**: Jan Bolinder

https://ki.se/sites/default/files/supervisors_of_flammable_goods_at_ki_20180416.pdf
https://ki.se/sites/default/files/fire_safety_supervisors_at_ki_2018-04-19.pdf

Avoid fire

- Electrical problems
  - Don't put cords across floor or thru a door
  - Don't use multiple **extension cords**
  - Don't use a curled up cord
  - Don't leave fluorescent light flashing
    - Report!
    - Good to know: An electronic starter will not overheat

Avoid fire

- Human mistakes in the lab or office
  - Forgetting equipment on (coffee maker, (air)heater, hotplate or stove (in lab or kitchen), heating blocks
  - Flammable material (e.g. plastics or paper) too close to t source (heater, liquefied petroleum gas (or ethanol burner))

Other sources of fire

- Work with heated sources (welding, soldering and use of heat gun)
  - Only carried out by authorized person
  - Fire alarm may have to be turned off
- Recycled paper in micro wave oven

Reduce effects of fire

- Learn what to do in case of fire
- Keep corridors free of blocking material and in particular at the fire doors
- Don't store flammable material in corridors
- Close doors to office and lab, close hoods and windows when evacuating

Reduce effects of fire....

- Make sure that the fire blankets and extinguishers are in place and working
- Bring out gas cylinder in case of fire
- Make sure that the emergency showers are working
- Keep important data on server

What to do in case of fire?

- Save - Alarm - Extinguish
  - Save people
  - Save other things
  - Push nearest button and call 112
    - From office phones both 00112 and 112 will work
  - If safe and smaller fire try to put it out
  - Fire extinguishers
    - Carbon dioxide (for everything)
    - Foam (more efficient for larger fires and for offices)
  - Close all doors
  - It is NOT allowed to put anything that hinders a fire door to close
  - Go to reassembling place and report your presence to your fire warden (wearing a yellow vest)
  - The fire wardens should coordinate with each other

Fire/evacuation alarm

The fire / evacuation alarm in NEO has two different signals:

- For floor 5 and the atrium: Spoken evacuation alarm (swe-Eng)
- For the rest of the building: Optical and acoustic alarms (red flashlight and siren)

The fire / evacuation alarm activated as at least on an entire floor plan. This happens when the alarm comes from:

- **1** smoke detector or heat detector on the floor
  or
- Alarm button pressed on the floor
  or
- Sprinkles activated on the floor

In all these cases, the alarm also goes directly to SOS and the Building technicians (Coor)

- Open fire doors will close on the affected floor.
- An alarm from floor 5 or any part of the atrium will activate the evacuation alarm and close all fire doors in the atrium and on floor 5.

In order for the fire / evacuation alarm to affect the entire building, the following must be met:

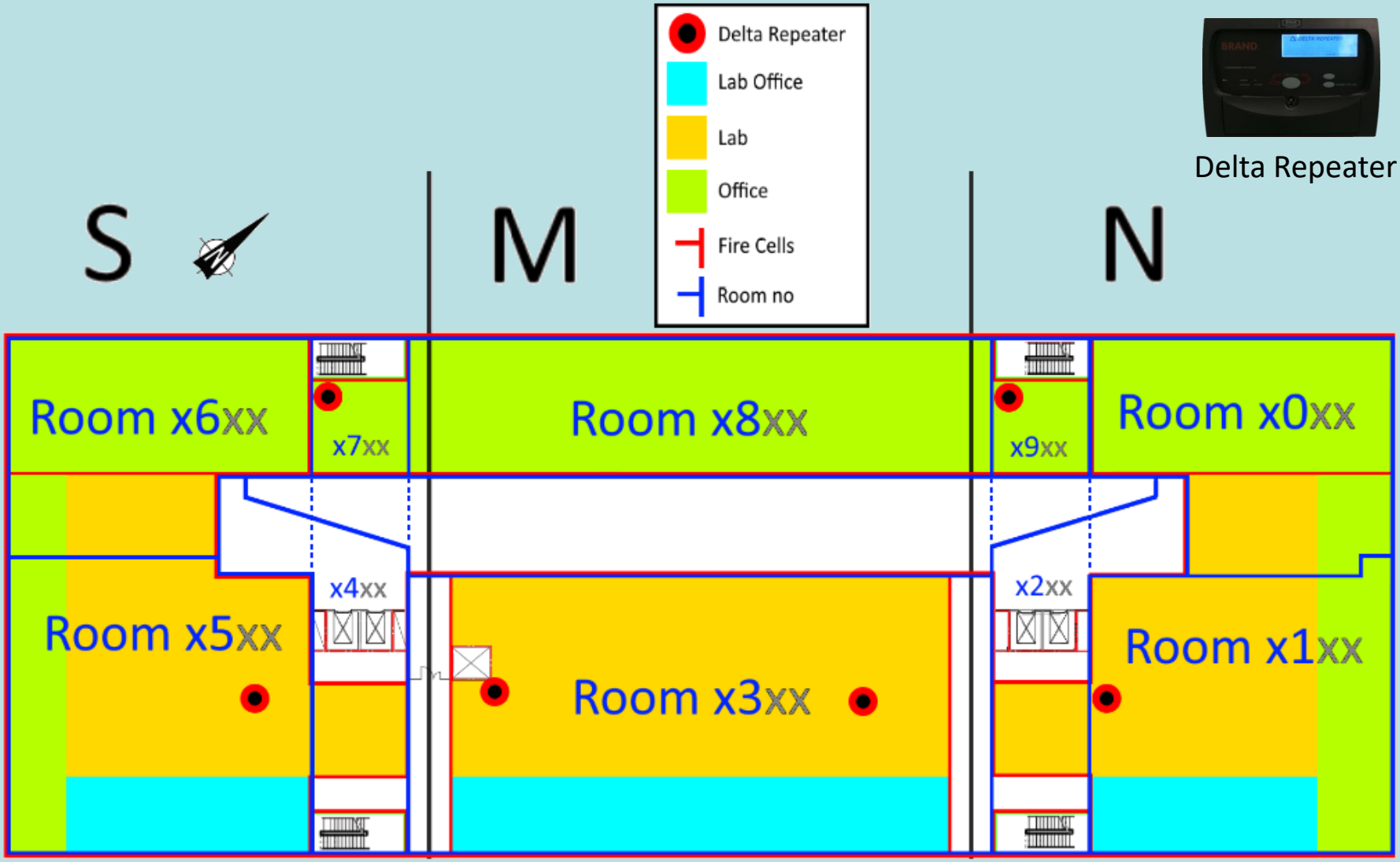
- **2** or **more** smoke / heat detectors activated on a floor or in a staircase
  or
- A combination of 2 (out of 3) triggered Smoke / heat detectors, Alarm button, Sprinklers

The rescue service also has the possibility to activate the evacuation alarm for the entire building from the fire alarm panel in the building at the entrance at floor 4.

- All open fire doors in the building will close.

Delta Repeater

Floor plan – Room numbers

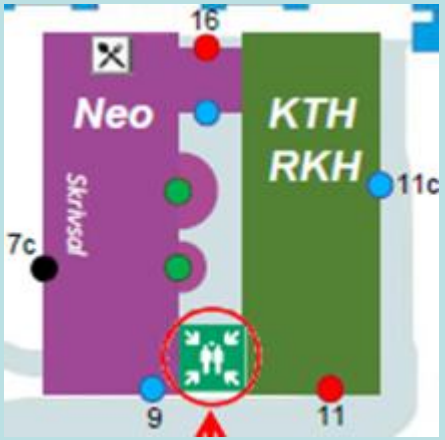


Delta Repeater

Evacuation stations and Fire warden

When an Evacuation/fire alarm is activated

- Evacuate the building (or floor)
- First person to reach the **evacuation station** can act as a Fire Warden
- The Fire Warden is responsible for going through the premises and instructing colleagues to evacuate to the assembly point.
- Use the **emergency exits** (stairs), marked with green exit signs – never use the elevators
- If you are in an elevator it will move down to a preset floor (3,4,or 5) and open their doors
- The assembly point is the area between Neo and TFH buildings (the Contemplation Courtyard).
- Everyone has a personal responsibility for following the Fire Warden's instructions
- Fire Warden contacts the Fire Brigade and shows them the shortest way to the site of the fire.



- The Fire Warden also make the contact with the technician from Hemsö/Coor (or other company responsible for Hemsö's buildings) when they arrive on site and for announcing – when confirmed by the Fire Brigade or the technician – that it is safe for employees to re-enter the building.

Evacuation stations

- There are evacuation stations in different areas with the following equipment, as also shown in the image:
  - Fire Warden vest
  - Fire Warden instruction card
  - Rechargeable hand torch
  - Fire extinguishers
  - Fire blanket

  Also at the evacuation station
  - Evacuation plan
  - First aid kit

For more information see:

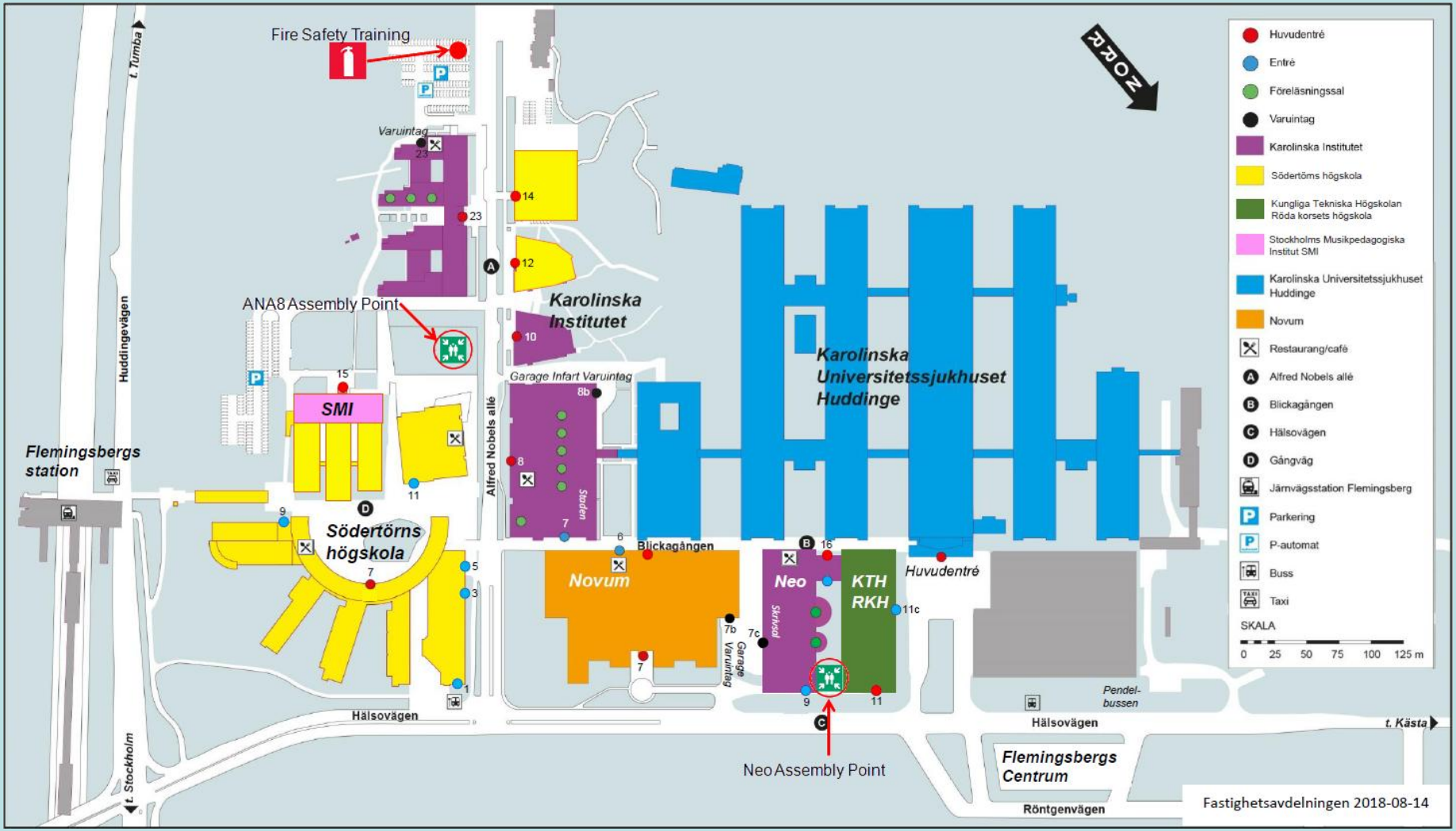
- Appendix B “Assembly point after an evacuation of the building”, https://ki.se/sites/default/files/Neo_App_03_Fire_Safety_Appendicies.pdf
- The Instruction card for Fire Wardens, https://ki.se/sites/default/files/fire_warden_instruktion_card.pdf (the cards at the evacuation stations in Neo are slightly modified)

Memorize

- Where are the heart starters located
- Which are the alternative routes to get out of Novum (evacuation plans)
- Where are the fire alarm buttons located
- Where are the fire extinguishers located
- Where are the emergency/eye showers located
- Where could the water be turned off
- Where are the gas masks located

Get proper training:
http://ki.se/en/staff/fire-safety
http://ki.se/sites/default/files/training_within_fire_safety_20170824.pdf

Assembly Point



After the incidence

After the incidence: Report incidences to your supervisor and the department fire safety supervisor and/or the web based reporting system

- BioNut: Håkan Ottosson
- MedH: Klas Karlsson
- NVS: Vivan Söderlund

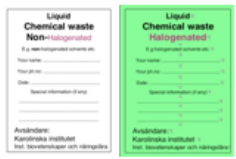
Waste handling Part 1

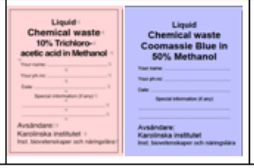
Waste handling

- Read Safety Manual
- Overview, see Waste Handling poster:

WASTE HANDLING

Waste	Container	Label	Where
Contagious or biological • Sharp material: Glass, plastics, syringes, injection needles, scalpels and Pasteur pipettes • Biological: Animals and animal tissues (if small amounts) • Human blood and blood products, micro-organisms, cell cultures and materials that has come in contact with these items.	**Yellow plastic container**		Cold container for contagious waste (floor 2)

Chemical
• Solvents
  • Non-halogenated (<1% halogenated)
  • Halogenated (>1% halogenated)
	Plastic heavy duty container *
	5 liters w black cap
			Room for chemical waste
			(floor 2)

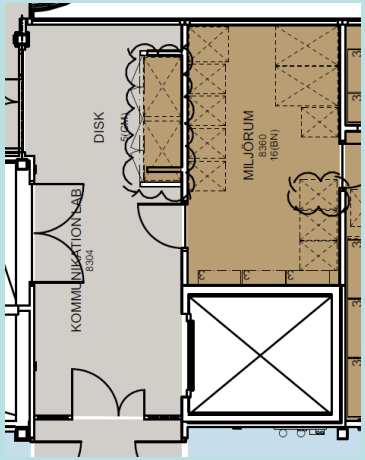
Chemical • **Solid** non-halogenated waste (e.g. phenol containing tubes, ethidium bromide gels, etc) • Scintillation vials	**Plastic container** **10 liters w black cap**		Room for chemical waste (floor 2)
Chemical or drugs • Water solutions • Cell media containing antibiotics (always decontaminated with Virkon or sodium hypochlorite) • Cytostatics and prescription drugs (read **Safety Manual**) • Narcotics (read **Safety Manual**)	**Plastic container** **5 liters w white cap**		Water solutions: room for chemical waste (floor 2) Cell media: bar cage (floor 2) Drugs/Narcotics: read **Safety Manual**
Chemical • Trichloroacetic Acid in Methanol • Coomassie Blue in Methanol • Other solutions	**Plastic container** **5 liters w black cap**		Room for chemical waste (floor 2)

Waste	In what	Where / Label
Batteries	**Designated box**	Recycling room
Fluorescent lights	**Designated box**	
Metal objects (smaller, incl. lead containers)	**Plastic container**	
Packaging materials • Cardboard	**Specific large green containers**	Outside service unit
• Other packaging material, e.g. styrofoam (not recycled)	**Large green containers for garbage**	 Corridors
Electronics • Computer equipment	**Hand it over to IT unit**	IT unit
• Other smaller equipment	**Trolley**	Outside IT unit
• Discarded larger equipment, freezers and refrigerators	**Contact Service unit**	Service unit, Janitor@biosci.ki.se
Heavy metals • Solutions, silver nitrate and other metal ions 	**Plastic container, 5 liters w white cap**	Room for chemical waste (floor 2) **Label**: Mark with metal name, concentration, your name, phone number and "BioNut"
• X-ray- and other films	**Designated box in recycling room**	Recycling room (floor 7)
• Developing- and fixation solutions	**Containers in dark room**	Dark room
Radioactive • Solid waste • Liquid waste 	**Green plastic container** **Plastic container 5 liters w black cap**	Room for radioactive waste at KS **Label**: Type label in computer at KS
Glass • Bottles, etc of soda glass	**Glass recycling bin**	Corridors
• Glass and plastic containers for toxic, strongly corrosive or environmentally hazardous chemical	**Cardboard boxes (with cap left on!)**	Chemical storage (floor 7)
• Laboratory and kitchen glass (beakers, funnels, etc of borosilicate glass) and flower pots, etc.	**Red container**	 Outside old dish washing room (floor 7) and outside room 6D23:12
Uncontaminated disposable plastic pipettes **Uncontaminated tips**	**(Any box)**	Preferable in **Yellow plastic container** or in normal garbage (put them in some container to avoid puncturing the garbage bag)
Uncontaminated scalpels, needles and Pasteur pipettes (glass)	**Yellow plastic container**	See **Contagious or biological**
Hard and soft plastics	**Separate waste bin in the lab**	Taken away by cleaning personnel
Used toner cassettes	**Box**	Outside IT unit
Plain paper	**Paper recycling bin**	 Corridors
Used pump oil 	**Plastic container w white cap or original container**	Room for chemical waste (floor 2) **Label**: Mark as "Spillolja"

* UN type marking Y or X, e.g. 5L container w black cap. ① 2H1/Y 1.9/150/15/NNGT0109A ; 5L ethanol container. ① 2H1/Y 100/12/FIN/VTT-130 2= Jerri can, H=Plastic, 1=Closed head (non-removable lid), Y=for Packaging Group II (for medium hazard level) and III (low hazard level) (when marked with X, it can be used for "Group I: Great Danger -high hazard level") , 1.9 or 100=Hydraulic pressure (vapour pressure) in kilo-Pascal or weight of solid material, 15 or 12=Year of production (2015 or 2012), N or FIN: Country where container was manufactured, NGT or VTT=Code for manufacturing plant or the container the solvent was delivered in

Waste flow

Producer
(the lab and office)



On each floor a recycling room (Miljörum)

Waste handling companies

Recycling

Stena

Destruction, incineration

SAKAB
Vattenfall in Uppsala

Recycling

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

MJUKPLAST// *SOFT PLASTIC*

Om fraktionen "Mjukplast" saknas kan all plast sorteras som "Plast". Men bättre sortering ökar återvinningsgraden av plasten vilket innebär miljövinst när mjukplast sorteras ut från hårdplast.

If this fraction is missing, all plastic can be sorted as "Plastic". However, separation of soft plastic from hard plastic increases recycling yield.

Ja

- Krymp och sträckfilm
- Rena bärkassar i plast
- Cellofan
- Plastfickor & mappar
- Mjukemballage i plast

Nej

- PET-flaskor
- Band av plast & metall
- Smutsig plast (om möjligt rengör och återvinn)

Yes

- *Shrink & stretch film*
- *Soft plastic packaging*
- *Clean plastic bags*
- *Cellophane*
- *Plastic pockets & folders*

No

- *PET bottles*
- *Plastic & metal bands*
- *Dirty plastic (if possible, clean & recycle)*

FAKTA
Efter tvättning och malning används materialet som råvara för tillverkning av nya plastprodukter som till exempel bärkassar och sopsäckar. Mer information om plast finns på www.plastkretsen.se

//FACTS
After washing and grinding the material is used as raw material for production of new plastic products such as carrier bags and garbage bags. More information on plastic is available on www.plastkretsen.se

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

PLAST// *PLASTICS*

Ja

- Plastflaskor & plastkorkar
- Mejeriförpackningar i plast
- Plastdunkar & plastlock
- Tomma pipettspetsaskar
- Plastburkar utan farosymboler
- Labplast, ex pipettspetsar, plaströr, petriskålar under förutsättning att den ej är förorenad*

Nej

- PET-flaskor
- Plastförpackningar märkta med "Giftigt", "Hälsofarligt" eller "miljöfarligt".
- Plastföremål förorenade med ovan nämnda kemikalier, biologiska agens eller GMM

Yes

- *Plastic bottles, caps & lids*
- *Plastic dairy packages*
- *Empty pipette tip boxes*
- *Plastic jars without warning symbols*
- *Non-contaminated lab plastics, e.g. pipette tips, tubes, petri dishes**

No

- *PET-bottles*
- *Plastic packaging labelled with "Highly toxic"; "Carcinogenic/mutagenic" or "Environmental hazard"*
- *Plastic objects contaminated with such chemicals, biological agents or GMM*

***FÖRORENAD PLAST**
Plast som innehållit giftiga, hälsoskadliga eller miljöfarliga kemikalier ska sorteras som Kemikalieavfall varefter det återvinns av entreprenör med särskild kompetens. För plast förorenad med biologiska agens eller GMM, läs instruktioner i KI:s laboratorieavfallsregler.

//CONTAMINATED PLASTIC
Plastic packaging labelled with "Highly toxic", "Environmental hazard" or "Carcinogenic/Mutagenic" must be sorted as chemical waste. Plastics contaminated with biological agents or GMM, see instructions in KI:s rules for laboratory waste.

Källsortering på Karolinska Institutet //*Waste Management at Karolinska Institutet*

FÄRGAT GLAS// *COLOURED GLASS*

Ja

- Färgade glasburkar
- Färgade glasflaskor

Nej

- Porslin och keramik
- Glödlampor
- Glasförpackningar märkta med*

Yes

- *Coloured glass bottles*
- *Coloured glass jars*

No

- *Porcelain and ceramics*
- *Light bulbs*
- *Glass packaging labelled with**

*Förpackningar med ovanstående märkning ska hanteras som kemikalieavfall.

* *Packages with these labeled must be handled as chemical waste.*

TA BORT KORKAR OCH LOCK
Plastkorkar och plastlock ska sorteras med plastförpackningar. Kapsyler och plåtlock sorteras med metallförpackningar.

//REMOVE CAPS AND LIDS
Plastic corks and plastic lids should be placed in the plastic packaging. Caps and sheet metal lids should be sorted among metal packaging.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

OFÄRGAT GLAS// *UNCOLOURED GLASS*

Skölj ur glasförpackningen med vatten och ta bort korkar och lock – dessa sorteras enligt sitt material.

Rinse the glassware with water and remove corks and lids – these are sorted according to material.

Ja

- Ofärgade glasburkar eller flaskor
- Rent och okontaminerat* ofärgat labglas

Nej

- Glödlampor
- Plan- & fönsterglas
- Pasteurpipetter & objektglas
- Glasförpackningar märkta med "Giftigt", "Hälsofarligt" eller "Miljöfarligt"

Yes

- *Uncoloured glass bottles or jars*
- *Clean and non-contaminated* uncoloured laboratory glass*

No

- *Light bulbs*
- *Plate- and window glass*
- *Pasteur pipettes & object glass*
- *Glass packaging labelled with "Highly toxic", "Carcinogenic/mutagenic" or "Environmental hazard"*

FAKTA *För behållare eller förpackning som innehållit farligt avfall med ovanstående märkning eller är förorenat med biologiska agens och/ eller GMM ska hanteras enligt KI:s regler för laboratorieavfall.

*// **Bottles or cans** labelled with symbols for "Highly toxic", "Environmental hazard" or "Carcinogenic/Mutagenic" or contaminated with biological agens and/or GMM should be handled according to KI:s rules for laboratory waste.*

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

PANT // *RETURN BOTTLES*

Det går att arrangera hämtning av pant om det finns intresse för detta på institutionen/byggnaden.

If you do not care to return your bottles, you can put them in this bin. The collected money will go to the organization "Médecins sans frontières".

Ja

- PET-flaskor
- Aluminiumburkar
- Allt med "PANT"-symbol

Nej

- Övrigt avfall
- Flaskor som inte kan pantas

Yes

- PET- bottles
- Aluminum cans
- Everything will "PANT"-symbol

No

- *Other waste*
- *Bottles and cans without "PANT"-symbol*

FAKTA
Det ser olika ut på olika campus. Miljö och hållbarhetsombud, arbetsmiljögrupp eller liknande kan ta initiativet, kontakt tages sedan med avfallsentreprenör/KI eller AH.

//FACTS
The solutions are different at the two campuses. Environment- and sustainability representative or the departments work environment group can take the initiative, for the practical solution use the contact information on the staff portal.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

METALLFÖRPACKNINGAR// *METAL PACKAGING*

Ja

- Konservburkar, tuber, kapsyler & lock
- Aluminiumfolie
- Metallkapslar för kaffe

Nej

- Burkar med rester av kemikalier eller färg

ENDAST TOMMA FÖRPACKNINGAR OCH EMBALLAGE!

Yes

- *Tin cans, tubes, caps & lids*
- *Aluminum foil*
- *Coffee pads & capsules made of metal*

No

- *Cans with residues of chemicals or paint*

ONLY EMPTY PACKAGING AND WRAPPING!

FAKTA
Metallförpackningarna sorteras genom magnetseparering. Genom att återvinna t. ex. aluminium sparas 95 procent av den energi som annars behövs för att framställa helt ny aluminium.

//FACTS
When we recycle for example, aluminum, we save 95 percent of the energy otherwise required to produce completely new aluminum.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

BRÄNNBART // *COMBUSTIBLE*

Ja

- Böcker med hård pärm
- Trasor
- Städavfall
- Pärmar
- Frigolit
- Smutsiga förpackningar (om ej möjligt att rengöra)

Nej

- Farligt avfall
- Glödlampor
- Övriga fraktioner såsom järn, skrot & elektronik.

Yes

- *Books with hard covers*
- *Rags, dirty paper towels*
- *Cleaning waste*
- *Binders*
- *Styrofoam*
- *Dirty packaging (if not possible to clean)*

No

- *Hazardous waste*
- *Light bulbs*
- *Other fractions such as scrap iron & electronics.*

Fakta
Brännbart avfall är en viktig råvara för värmeverk runt om i Sverige. Materialet energiutvinns med anpassad rökgasrening och bildar i sin tur fjärrvärme som håller oss varma om vintern.

// Facts
Combustible waste is an important raw material for thermal plants around Sweden. The energy of the material is extracted with custom flue gas cleaning and produces district heating that keeps us warm in the winter.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

ÖVRIGT AVFALL// *OTHER WASTE*

Här läggs skrymmande avfall och övrigt avfall såsom porslin. Sortera ditt avfall väl för att få så lite övrigt avfall som möjligt.

Bulky waste and other waste such as porcelain is placed here. Sort your waste carefully so that this fraction is minimized.

Ja

- Skrymmande avfall*
- Möbler*
- Porslin

Nej

- Farligt avfall
- Elektronik
- Förpackningar
- Tidningar
- Hushållssopor / matavfall
- Byggavfall

Yes

- *Bulky waste**
- *Furniture**
- *Porcelain*

No

- *Hazardous waste*
- *Electronic waste*
- *Packing material*
- *Newspapers*
- *Household waste / food waste*
- *Construction waste*

*Märk med relevant zz-referens, annars hämtas inte avfallet.

**Label with applicable zz-code or the waste will not be collected.*

FAKTA
Det övriga avfallet transporteras till behandlingsanläggningar. Här sorteras materialet och återvinns, energiutvinns eller läggs på deponi.

// FACTS
The remaining waste is transported to treatment plants where the material is sorted and recycled, energy is recovered or it is sent to landfill.

Recycling

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

SMÅBATTERIER// *SMALL BATTERIES*

Alla slags batterier ska samlas in eftersom batterivätskan är frätande och kan förorena miljön.

All types of batteries must be collected since battery fluid is corrosive and harmful to the environment.

Ja

- Alla hushållsbatterier, även bly & kvicksilverbatterier

Nej

- Bilbatterier
- Annat farligt avfall som ej är batterier

Yes

- *All household batteries, including lead & mercury batteries*

No

- *Car batteries*
- *Other types of hazardous waste*

FAKTA

Insamlade batterier sorteras efter kemiskt innehåll och skickas till återvinning. Materialen separeras och återvinns så långt det är möjligt.
Även metallhöljet runt batterierna återvinns. Återvinningsgraden beror på vilken typ av batteri det är. Nickelmetallhybridbatterier kan materialåtervinnas upp till 98%.

//FACTS

Collected batteries are sorted by chemical content and sent for recycling. The materials are separated and recycled as far as possible. Even the metal casing around the batteries is recycled. The recovery rate depends on battery type. Nickel metal hybrid batteries can be recycled up to 98%.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

ELEKTRONIK // *ELECTRONIC WASTE*

Elektronikavfall klassas ofta som farligt avfall eftersom det kan innehålla en rad komponenter som är skadliga för oss och för vår miljö.

Electronic waste is often classified as hazardous waste since it may contain components that are harmful to people and to the environment.

Ja

- Allt med sladd/batteri – även inbyggda batterier!
- Mikrovågsugnar
- Tangentbord
- Mobiltelefoner & datorer – glöm ej att radera all information på säkert sätt!
- TV-apparater
- Sanerade laboratorieinstrument med ifylld och signerad saneringsdekal*

Yes

- *Everything with a cord or a battery – including inbuilt batteries!*
- *Microwave ovens*
- *Keyboards*
- *Cell phones & computers – don't forget to erase all information!*
- *TV sets*
- *Decontaminated laboratory instruments with signed decontamination sticker**

Nej

- Annat farligt avfall (som ej är elektroniskt)

No

- *Other hazardous waste (not electronic waste)*

SKRYMMANDE ELAVFALL - Kylar, frysar eller annan större elutrustning som inte ryms i buren eller som är för tung för att flytta på enkelt sätt skall placeras i avsett utrymme och märkas med aktuell ZZ-referens. Hämtning beställs och bekostas av ägaren till utrustningen.

// BULKY ELECTRONIC WASTE - Freezers, refrigerators or other bulky / heavy equipment should be placed in a designated area and marked with your ZZ-code. Pick-up is ordered and payed for by the owner of the equipment.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

LJUSKÄLLOR// *SOURCES OF LIGHT*

Ja

- Glödlampor
- Kvicksilverlampor
- Lågenergilampor
- Halogenlampor
- Krokiga lysrör eller ljuskällor
- Smålampor
- Fordonslampor

Nej

- Lysrör längre än 60 cm

VAR FÖRSIKTIG – lampor som innehåller kvicksilver bör hanteras varsamt så att de inte går sönder under transporten.

Yes

- *Light bulbs*
- *Mercury lamps*
- *Low-energy bulbs*
- *Halogen bulbs*
- *Curved fluorescent lamps*
- *Small bulbs*
- *Bulbs from vehicles*

No

- *Fluorescent lamps longer than 60 cm*

BE CAREFUL – bulbs that contain mercury should be handled with care, pack in order to prevent breakage during transport.

FAKTA

Glödlampor krossas och olika material separeras på ett skakbord i en behandlingsanläggning. Glas och metall skickas till materialåtervinning. Lyspulvret i lågenergilampor och lysrör innehåller kvicksilver som omhändertas separat. Resten av materialet fraktioneras i en sluten process.

Mer information om ljuskällor finns på www.elkretsen.se eller www.sakab.se.

//FACTS

Bulbs are crushed and then separated on a vibrating table in a treatment factory. Glass and metal are sent to recycling. Fluorescent powder in low-energy bulbs and fluorescent tubes contain mercury and are disposed separately. The remaining material is fractionated in a closed process.

More information on sources of light is available on www.elkretsen.se or www.sakab.se.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

LYSRÖR // FLUORESCENT TUBES

Ja

Raka lysrör

Nej

Glödlampor
Lågenergilampor
Halogenlampor
Papphylsor

VAR FÖRSIKTIG – Lysrör klassas som farligt avfall eftersom de innehåller kvicksilver.

Yes

Straight fluorescent tubes

No

Bulbs
Low-energy bulbs
Halogen tubes
Cardboard cases

BE CAREFUL – Fluorescent tubes are classified as hazardous waste due to their mercury content.

FAKTA

När lysrören när slutstationen tar tekniken över. Hela återvinningsprocessen är automatiserad och allt återvinns utom kvicksilvret. Lysrörspulvret stabiliseras och läggs på celldeponi för farligt avfall. Celldeponi innebär att materialet gjuts in i ett betongskal innan det deponeras. Läs mer på www.elkretsen.se eller www.sakab.se

//FACTS

Technology takes over when the fluorescent tubes reach the end station. The whole recycling process is automated and all material except mercury is recycled. Fluorescent powder is separated and put in cell landfill for hazardous waste. Cell landfill means that the material is encased in concrete shell before it is landfilled.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

RETURPAPPER// *RECOVERED PAPER*

Dokument med känslig information ska av informationssäkerhetsskäl lämnas i sekretessutsnor eller makuleras med exempelvis dokumentförstörare.

Documents with confidential information are, due to safety information reasons, to be discarded as "confidential waste" or passed through a shredder.

Ja

- Kontorspapper
- Tidningar & broschyrer
- Kataloger & reklam
- Kollegieblock
- Pocketböcker
- Kuvert utan fönster
- Omslagspapper

Nej

- Plastat papper
- Vaxat papper
- Sekretessavfall

Yes

- *Office paper*
- *Magazines & brochures*
- *Catalogues & flyers*
- *Note pads*
- *Pocket books*
- *Envelopes without plastic windows*
- *Wrapping paper*

No

- *Laminated paper*
- *Waxed paper*
- *Confidential waste*

FAKTA

Insamlat returpapper sorteras manuellt för att få bort avvikande material. Allt material skickas därefter till pappersbruk och blir till nytt papper. Ett ton returpapper motsvarar 14 träd.

// FACTS

Collected waste paper is sorted manually to remove any differing material. All material is then sent to paper mills and turned into new paper. One tonne of waste paper is equivalent to 14 trees.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

PAPPER//*PAPER*

Här läggs pappersförpackningar och tunn kartong. Sortera bort andra material, t ex korkar i plast.

Paper packages and thin cardboard. Remove other materials, such as plastic lids.

Ja

- Ursköljda mejeriförpackningar av papper
- Bärkasse i papper
- Engångsmugg / engångstallrik i papper

Nej

- Plast
- Frigolit
- Returpapper

Yes

- *Dairy product paper packages – rinse before!*
- *Paper bags*
- *Disposable paper cups & plates*

No

- *Plastics*
- *Styrofoam*
- *Recovered paper*

FAKTA
Använda mjölkpaket och mjölpåsar blir nya fling- och vällingpaket. Kartongen kan också användas till ytskiktet på gipsskivor. Pappersfibrer är så starka att de tål att återvinnas fem till sju gånger utan att styrkan försvinner. När fibrerna är utslitna är de fortfarande värdefullt bränsle.

// FACTS
Used milk- or cereal packages are recycled to new packages. The cardboard can also become the surface layer of gypsum wallboards. Paper fibres are strong enough to be recycled five to seven times without losing their strength. Once the fibres are worn out they are valuable as fuel.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

WELLPAPP & KARTONG// *CORRUGATED CARDBOARD*

Vik ihop och sortera bort andra material och lägg de lite mindre kartongerna i en större kartong. Då tar de mindre plats och blir enklare att hantera.

Använd balpress/komprimator om sådan finns!

Fold the cardboard and remove other materials. Smaller items may be placed in bigger cardboard boxes. That makes them occupy less space and will be easier to handle.

Use the baler if one is available!

Ja

- Wellpapp
- Tjock kartong
- Brunt kraftpapper
- Plastad eller vaxad kartong
- Tunn kartong / papperförpackningar
- Nedsmutsad wellpapp eller kartong

Nej

- Plast
- Frigolit
- Returpapper

Yes

- *Corrugated cardboard*
- *Thick cardboard*
- *Brown kraft-paper*
- *Laminated or waxed cardboard*
- *Thin cardboard / paper packaging*
- *Dirty cardboard*

No

- *Plastics*
- *Styrofoam*
- *Recovered paper*

FAKTA
Wellpapp balas och skickas till ett kartongbruk, där materialet upplöses och omvandlas till pappersmassa. Av denna massa tillverkas ny well och kraftpapper eller gipsskivekartong.

// FACTS
Corrugated cardboard is baled and sent to a board mill where the material is dissolved and converted into paper pulp. From this pulp new corrugated cardboard, kraft paper or gypsum wallboard is produced.

Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

SEKRETESSAVFALL// *CONFIDENTIAL WASTE*

Avfall som innehåller uppgifter som kan röja personers identitet, kontokortsuppgifter, kvitton och övriga handlingar som kräver sekretesshantering.

Waste that contains information that can reveal identities, credit card information, receipts and other documents that require confidentiality.

Ja

- Sekretessavfall i form av papper.
- Hårddiskar, usb-stickor eller annan hårdvara där informationen inte har raderats på ett säkert sätt. Kontakta din institutions IT-support för hjälp med radering.

Nej

- Annat avfall

Yes

- Confidential waste (paper)
- Hard drives, usb-memory devices or other hardware if information has not been erased in secure manner. Contact your IT-support for assistance.

No

- *Other waste*

FAKTA

Sekretessavfall hämtas av IL-recycling (Reiswolf). Kontaktas IL recyclings kundservice för mer information reiswolf.stockholm@ilrecycling.com. Uppge at ni hör till Karolinska Institutet.

//FACTS

Confidential waste will be picked up by av IL-recycling (Reiswolf). Contact reiswolf.stockholm@ilrecycling.com for more information and ask them to apply the Karolinska Institutet frame work agreement.

Recycling

- Paper
  - Printer paper, etc
  - Card board paper
  - container in corridors and in the recycling rooms
- **Hard and soft plastics**
  - Plastics **not** contaminated by chemicals, radiation or biological agents
  - collected in each lab and then put in the container in the recycling room

Recycling

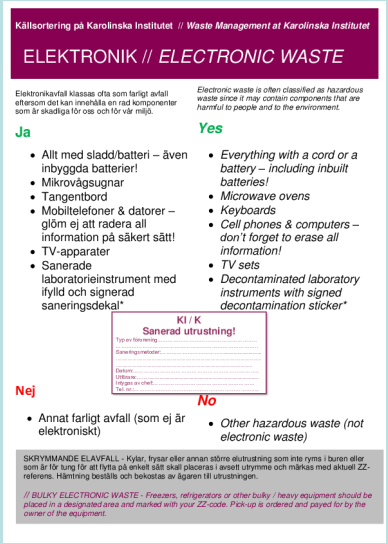
Printer toner cassettes

The person who replaces the cassette should put the old one (without the cardboard box) in the container for cassette recycling in the recycling room, or dispose it as normal waste (we may not have a system for recycling running)

Electronics (everything which has a cord or a battery)

Hand over computers to the IT unit

Other electronic equipment can be placed in the trolley for such waste in the recycling room at floor 8 or if still useful, handed over to the service unit



Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

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Electronic waste is often classified as hazardous waste since it may contain components that are harmful to people and to the environment.

Ja

- Allt med sladd/batteri – även inbyggda batterier!
- Mikrovågsugnar
- Tangentbord
- Mobiltelefoner & datorer – glöm ej att radera all information på säkert sätt!
- TV-apparater
- Sanerade laboratorieinstrument med ifylld och signerad saneringsdekal*

Yes

- *Everything with a cord or a battery – including inbuilt batteries!*
- *Microwave ovens*
- *Keyboards*
- *Cell phones & computers – don't forget to erase all information!*
- *TV sets*
- *Decontaminated laboratory instruments with signed decontamination sticker**

KI / K
Sanerad utrustning!

Nej

- Annat farligt avfall (som ej är elektroniskt)

No

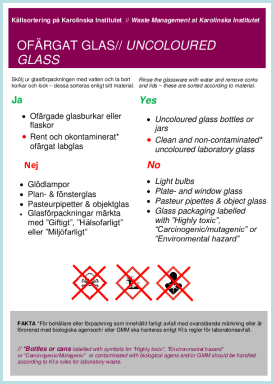
- *Other hazardous waste (not electronic waste)*

SKRYMMANDE ELAVFALL - Kylar, frysar eller annan större elutrustning som inte ryms i buren eller som är för tung för att flytta på enkelt sätt skall placeras i avsett utrymme och märkas med aktuell ZZ-referens. Hämtning beställs och bekostas av ägaren till utrustningen.

// BULKY ELECTRONIC WASTE - Freezers, refrigerators or other bulky / heavy equipment should be placed in a designated area and marked with your ZZ-code. Pick-up is ordered and payed for by the owner of the equipment.

Glass Recycling

- Separate containers for coloured and uncoloured clear glass
- Remove caps, rinse out chemical residues (**not** toxic, corrosive and environmentally hazardous chemicals) or for organic solvents leave them to evaporate over night in the od
- Never put china, flower pots, etc, in the containers for glass recycling
- Laboratory/kitchen glass of borosilicate (e.g. Jena, Duran, Pyrex) such as beakers, flasks, bottles, etc, is not recycled, but go to separate **Red** container outside dishwashing room and in Recycling room on floor 8
- Return bottles (pant), put them in the bin in the lunch room


Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

OFÄRGAT GLAS// *UNCOLOURED GLASS*

Skölj ur glasförpackningen med vatten och ta bort korkar och lock – dessa sorteras enligt sitt material.

Rinse the glassware with water and remove corks and lids – these are sorted according to material.

Ja

- Ofärgade glasburkar eller flaskor
- Rent och okontaminerat* ofärgat labglas

Nej

- Glödlampor
- Plan- & fönsterglas
- Pasteurpipetter & objektglas
- Glasförpackningar märkta med "Giftigt", "Hälsofarligt" eller "Miljöfarligt"

Yes

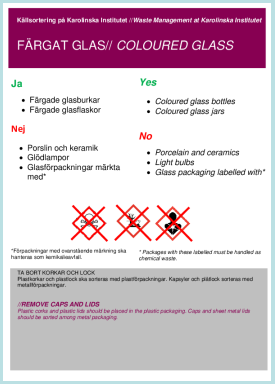
- *Uncoloured glass bottles or jars*
- *Clean and non-contaminated* uncoloured laboratory glass*

No

- *Light bulbs*
- *Plate- and window glass*
- *Pasteur pipettes & object glass*
- *Glass packaging labelled with "Highly toxic", "Carcinogenic/mutagenic" or "Environmental hazard"*

FAKTA *För behållare eller förpackning som innehållit farligt avfall med ovanstående märkning eller är förorenat med biologiska agenser och/ eller GMM ska hanteras enligt KI:s regler för laboratorieavfall.

// ***Bottles or cans** labeled with symbols for "Highly toxic", "Environmental hazard" or "Carcinogenic/Mutagenic" or contaminated with biological agens and/or GMM should be handled according to KI's rules for laboratory waste.*


Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

FÄRGAT GLAS// *COLOURED GLASS*

Ja

- Färgade glasburkar
- Färgade glasflaskor

Nej

- Porslin och keramik
- Glödlampor
- Glasförpackningar märkta med*

Yes

- *Coloured glass bottles*
- *Coloured glass jars*

No

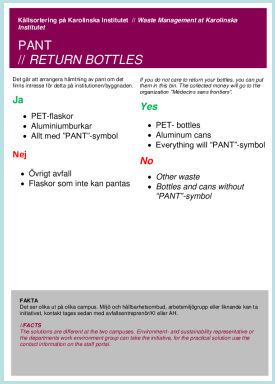
- *Porcelain and ceramics*
- *Light bulbs*
- *Glass packaging labelled with**

*Förpackningar med ovanstående märkning ska hanteras som kemikalieavfall.

* *Packages with these labelled must be handled as chemical waste.*

TA BORT FÖRPACKNINGENS LOCK.
Plastkorkar och plastlock ska sorteras med plastförpackningar. Kapsyler och plåtlock sorteras med metallförpackningar.

REMOVE CAPS AND LIDS
Plastic corks and plastic lids should be placed in the plastic packaging. Caps and sheet metal lids should be sorted among metal packaging.


Källsortering på Karolinska Institutet // *Waste Management at Karolinska Institutet*

PANT
// *RETURN BOTTLES*

Det går att arrangera hämtning av pant om det finns intresse för detta på institutionen/byggnaden.

If you do not care to return your bottles, you can put them in this bin. The collected money will go to the organization "Médecins sans frontiers".

Ja

- PET-flaskor
- Aluminiumburkar
- Allt med "PANT"-symbol

Nej

- Övrigt avfall
- Flaskor som inte kan pantas

Yes

- PET- bottles
- Aluminum cans
- Everything will "PANT"-symbol

No

- *Other waste*
- *Bottles and cans without "PANT"-symbol*

FAKTA
Det sat olika ut på olika campus. Miljö och hälsoarbetsombud, arbetsmiljögrupp eller liknande kan ta initiativet, kontakt tages sedan med avfallsentreprenör/KI eller AH.

FACTS
The solutions are different at the two campuses. Environment- and sustainability representative or the departments work environment group can take the initiative, for the practical solution use the contact information on the staff portal.

Recycling

- Metals
  - Recycling room on each floor
  - Iron, copper, aluminum, lead (e.g. radioisotope containers (without plastic cover)) – to box in recycling room
  - Silver (photo chemicals, films) – to container or box in the lab (recycling room)
  - Batteries (mercury, lead, cadmium, etc) – to box in recycling room
  - Fluorescent lights and light bulbs – to cardboard box in recycling room
  - Thermometers containing mercury – to Johan Dethlefsen

Guided tour

End of Presentation for Non-Laboratory Personnel

Introduction for newcomers Part 2

Content

Part 1 *– mandatory for everyone*

- Security, Safety and General information - mandatory for everyone
- Laws, regulations, rules and organization of work environment
- Karolinska Institutet's Environment and Sustainable Development efforts
- Fire safety
- Waste handling
- Guided tour

Part 2 *– mandatory for laboratory personell*

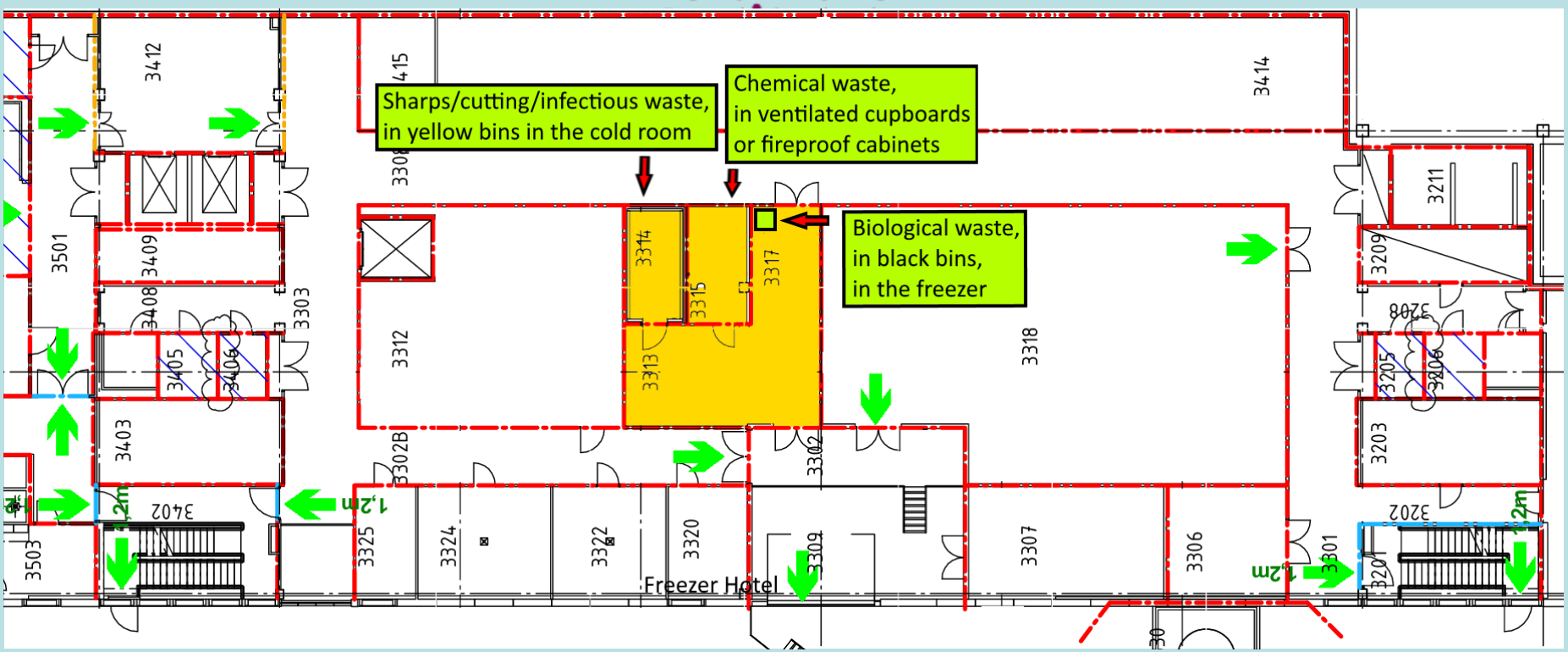
- More waste handling
- More fire safety
- Laboratory work and safety *– mandatory if working in lab*
- (Animal Experiments *– Intro by José Inzunza, BioNut only*)
- Guided tour *– for those that didn't do it after part 1*

This presentation is available at Neo internal web, https://ki.se/en/staff/neo-work-environment-and-safety

Radiation safety (KS radiation safety) – separate *mandatory course – if working with radioisotopes.*

Instructions how to sign up for a course is in this document:
https://www.karolinska.se/globalassets/global/sjukhusfysik/instruction-lartorget-in-english-for-ki.pdf

Waste handling Part 2


Sharps/cutting/infectious waste,
in yellow bins in the cold room
Chemical waste,
in ventilated cupboards
or fireproof cabinets
Biological waste,
in black bins,
in the freezer
Freezer Hotel
3412
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Laboratory Waste

Handling of waste from the lab

- **Sharps/infectious waste**
- **Biological waste** includes body parts, tissues and organs from people and animals as well as anatomical preparations and similar - but only if they do not contain sharp objects.
- NB! Cultures with cells or microorganisms, human blood and blood products, as well as material contaminated by these, shall be handled as “Sharps/infectious waste”.
- For ethical reasons, biological waste must be handled separately. Biological waste must always be stored frozen.
- **Chemical waste**

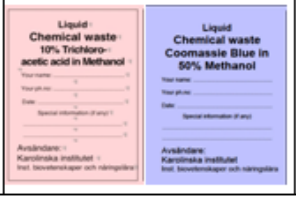
KI rules, see: https://ki.se/en/staff/laboratory-waste

Waste Handling

Version 2017.02 ww 1.2 / 2017-02-07 12:05 Håkan Ottosson

Waste	Container	Label	Where
Contagious or biological • Sharp material: Glass, plastics, syringes, injection needles, scalpels and Pasteur pipettes • Biological: Animals and animal tissues (if small amounts) • Human blood and blood products, micro-organisms, cell cultures and materials that has come in contact with these items.	**Yellow plastic container** 		Cold container for contagious waste (floor 2)

Chemical
• Solvents
  • Non-halogenated (<1% halogenated)
  • Halogenated (>1% halogenated)
	Plastic heavy duty container *
	5 liters w black cap 
			Room for chemical waste
			(floor 2)

Chemical • **Solid** non-halogenated waste (e.g. phenol containing tubes, ethidium bromide gels, etc) • Scintillation vials	**Plastic container** **10 liters w black cap** 		Room for chemical waste (floor 2)
Chemical or drugs • Water solutions • Cell media containing antibiotics (always decontaminated with Virkon or sodium hypochlorite) • Cytostatics and prescription drugs (read **Safety Manual**) • Narcotics (read **Safety Manual**)	**Plastic container** **5 liters w white cap** 		Water solutions: room for chemical waste (floor 2) Cell media: bar cage (floor 2) Drugs/Narcotics: read **Safety Manual** 
Chemical • Trichloroacetic Acid in Methanol • Coomassie Blue in Methanol • Other solutions	**Plastic container** **5 liters w black cap** 		Room for chemical waste (floor 2)

Waste	In what	Where / Label
Batteries	**Designated box**	Recycling room
Fluorescent lights	**Designated box**	
Metal objects (smaller, incl. lead containers)	**Plastic container**	
Packaging materials • Cardboard	**Specific large green containers**	Outside service unit
• Other packaging material, e.g. styrofoam (not recycled)	**Large green containers for garbage** 	Corridors
Electronics • Computer equipment	**Hand it over to IT unit**	IT unit
• Other smaller equipment	**Trolley**	Outside IT unit
• Discarded larger equipment, freezers and refrigerators	**Contact Service unit**	Service unit, Janitor@biosci.ki.se
Heavy metals • Solutions, silver nitrate and other metal ions 	**Plastic container, 5 liters w white cap**	Room for chemical waste (floor 2) **Label**: Mark with metal name, concentration, your name, phone number and "BioNut"
• X-ray- and other films	**Designated box in recycling room**	Recycling room (floor 7)
• Developing- and fixation solutions	**Containers in dark room**	Dark room
Radioactive • Solid waste  • Liquid waste 	**Green plastic container** **Plastic container 5 liters w black cap**	Room for radioactive waste at KS **Label**: Type label in computer at KS
Glass • Bottles, etc of soda glass	**Glass recycling bin**	Corridors
• Glass and plastic containers for toxic, strongly corrosive or environmentally hazardous chemical	**Cardboard boxes (with cap left on!)**	Chemical storage (floor 7)
• Laboratory and kitchen glass (beakers, funnels, etc of borosilicate glass) and flower pots, etc.	**Red container** 	Outside old dish washing room (floor 7) and outside room 6D23:12
Uncontaminated disposable plastic pipettes **Uncontaminated tips**	**(Any box)**	Preferable in **Yellow plastic container** or in normal garbage (put them in some container to avoid puncturing the garbage bag)
Uncontaminated scalpels, needles and Pasteur pipettes (glass)	**Yellow plastic container**	See **Contagious or biological**
Hard and soft plastics	**Separate waste bin in the lab**	Taken away by cleaning personnel
Used toner cassettes	**Box**	Outside IT unit
Plain paper	**Paper recycling bin** 	Corridors
Used pump oil 	**Plastic container w white cap or original container**	Room for chemical waste (floor 2) **Label**: Mark as "Spillolja"

* UN type marking Y or X e.g. 5L container w black cap: ① 3H1/Y1.9/150/15/NL/NET0108A ; 5L ethanol container: ② 3H1/Y100/13/FIN/VTT-130 3=Jerri can, H=Plastic, 1=Closed head (non-removable lid), Y=for Packaging Group II (for medium hazard level) and III (low hazard level) (when marked with X, it can be used for "Group I: Great Danger -high hazard level") , 1.9 or 100=Hydraulic pressure (vapour pressure) in kilo-Pascal or weight of solid material, 15 or 12=Year of production (2015 or 2012), N or FIN: Country where container was manufactured, NET or VTT=Code for manufacturing plant or the container the solvent was delivered in

Packing containers

- Plastic (6 types in storage)
  - 5 liters jerrican with **black** cap, approved for **organic solvents** and for **liquid radioactive** waste
  - 5 liters jerrican with **white** cap, mainly for water solutions, antibiotic waste
  - Larger 10 liter container for solid **chemical** waste,

- Yellow bins for **sharps/infectious** waste (max 15 kg)
- Green bins for **radioactive** waste
- Black bins for **biological** waste

UN type marking **Y** or **X** e.g. 5L container w black cap: 3H1/**Y**1.9/150/15/N/NET0109A 3: Jerri can; H: Plastic; 1: Closed head (non-removable lid); Y: for Packaging Group II (medium hazard level) and III (low hazard level) (when marked with X, it can be used for Group I: "Great Danger - high hazard level"); 1.9: Hydraulic pressure (vapour pressure, kPa or weight of solid material); 15: Year of production (2015); N: Country where container was manufactured, NET=Code for manufacturing plant

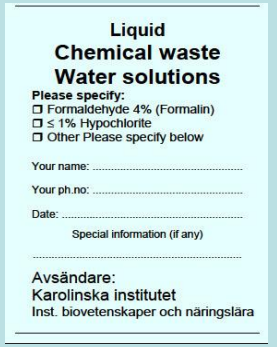
Labelling

- When those are available you should use pre-printed labels in storage
- If no label is available write on the container
  - Content (concentration if possible)
  - Your Department (BioNut, HERM, NVS, …)
  - Your name and Phone number
- Never put (hazardous) waste in storage without label

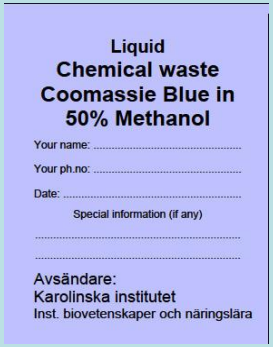
Labels available in storage

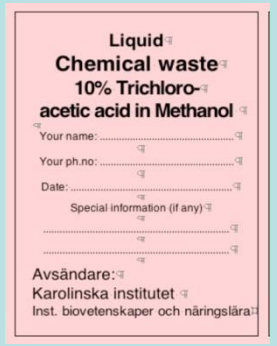
- Solutions containing **non-halogenated** chemicals (<1% halogenated)
- Solutions containing **halogenated** chemicals (>1% halogenated)

- Water solutions containing
  - 4% formalin
  - 1% hypochlorite
  - Other



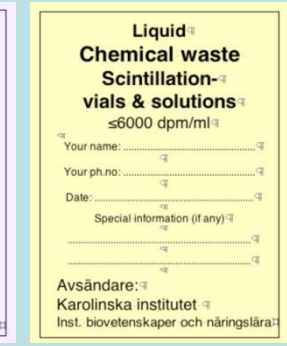
- 10% trichloroacetic acid in methanol
- Commassie blue in 50% methanol





Labels available in storage

- Solid chemical waste
  - Gels stained with ethidium bromide
  - Other
- Scintillation vials



- Contagious waste

- Cytostatic and drug contaminated waste (used for cell media with antibiotics)

and/or

New chemical waste or other questions on waste handling

- Contact Håkan Ottosson
- Maybe a new preprinted label is needed?
- Chemicals cleaned out from the lab can be put directly into storage in the garage, but strongly oxidizing chemicals should be separated from other and strong acids and bases should be kept separately. Put chemicals in any regular card board box and write
  - Your Department (BioNut, HERM, NVS, …)
  - Your name and Phone number

Plastic pipettes

- If used for biological or radioactive work or with toxic chemicals it should be deposited with that waste
- All other pipettes as well as tips to automatic pipettes should be deposited in the yellow bins (this is to avoid confusion for the cleaning staff)
  - You may temporary collect the in any suitable container before putting them in the yellow bin

Contaminated material, such as pipette tips, plastic tubes or similar, that have been in contact with chemicals that are **NOT labelled** with the hazard symbol for “Highly toxic”, “Carcinogenic/Mutagenic” or “Environmentally toxic” shall be placed in a sealed inner bag and then handled as normal waste, that is, sorted according to content, e.g. “Plastic waste”, “Glass waste” “Combustible waste” et c.

Pouring out chemicals in the sewer

- As little as possible should be deposited in the drain
- The following ions are OK to pour out
  - Cations: Na, Mg, K, Ca, Ti (IV), Mn (IV) (not VII), Fe, Al, Li
  - Anions: Cl, Br, I, CO_3, NO_3, SO_3, SO_4, silicates, borates

Pouring out chemicals in the sewer

- **Small** amounts of some organic solvents can be poured out, dilute it with plenty of water
  - Acetone
  - Acetonitrile
  - Ethanol
  - Methanol
  - 1- and 2-Propanol
- Diluted solutions of most common acids and bases can be poured out
- Vitamins, electrolytes, amino acids, peptides, proteins, carbohydrates and lipids can be poured out

Pouring out chemicals in the sewer...

- Chemicals with phrases H351, H350, H350i, H400, H410, H411, H413, H360 can **NOT** be poured out (see SDS for labelling)
- Old system R45, R49, R50, R50/53, R51/53, R53, R54-R59, R60-63 (toxic/dangerous to the environment)

https://ki.se/en/staff/laboratory-waste
https://ki.se/sites/default/files/ki_rules_for_laboratory_waste_management_ver_2.pdf

Empty chemical bottles

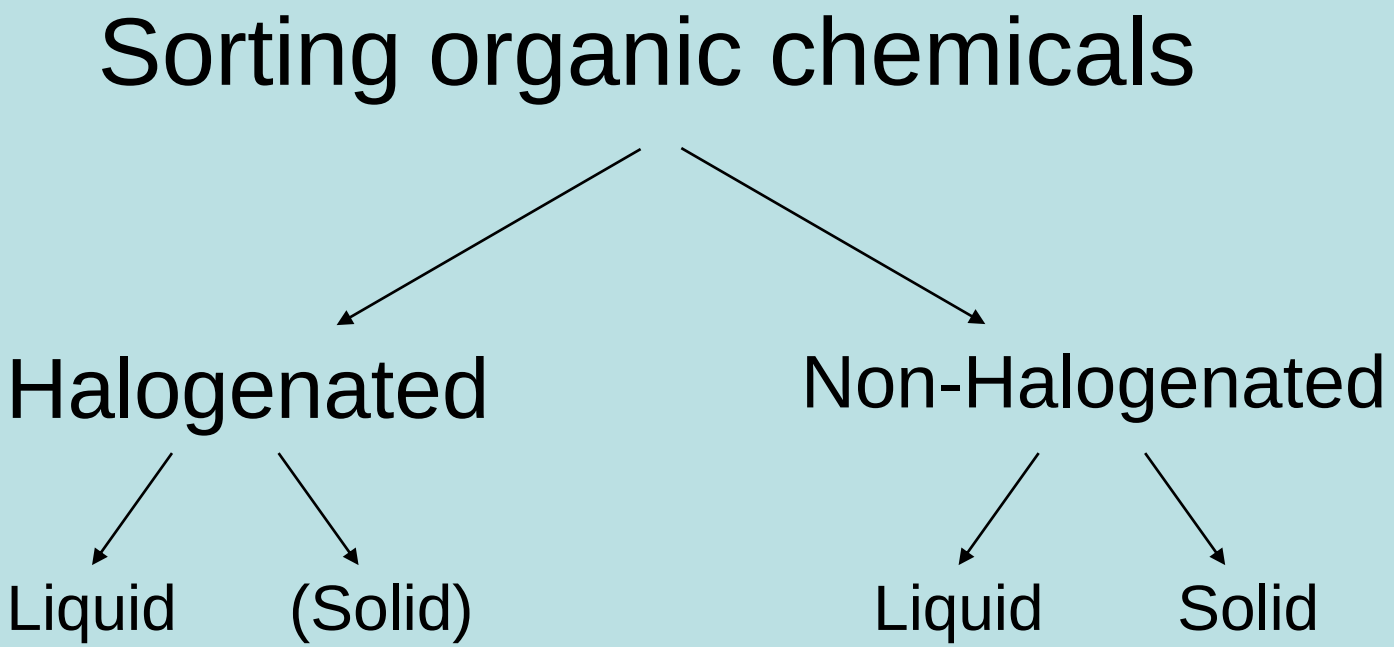
- Glass and plastic containers for toxic (T), very toxic (T+), strongly corrosive (C+) and environmentally hazardous (N) chemicals are not recycled, but deposited as hazardous waste
- Use any suitable sized cardboard box, put the bottles in it, mark it with your name and Phone number.
- Put the box in the chemical waste room, 3315

Hazardous waste (farligt avfall)

Sorting of chemical waste in the lab

- Organic chemicals
- Acids
- Bases
- Metals (mercury, cadmium, silver)
- Special chemicals (carcinogenic, mutagenic, very toxic)
- Used oils
- Residual drugs
- Cell media
- Cell media containing antibiotics

Hazardous waste (farligt avfall)



(No) separation between contagious and biological waste

- Contagious (bacteria, virus, blood, mammalian cells)
- Animal and human tissues (**small** amounts)
- Sharp objects (needles, scalpels) used when working with biological samples

Handling of cell media containing antibiotics

- Safety manual for sorting instructions and/or Waste Handling poster
- We do not autoclaving cell media containing antibiotics and ship everything as chemical waste, i.e. all solution should be treated with sodium hypochlorite (or Virkon/other approved inactivation method)

Sorting radioactive waste

- Water solution with not more than 1 MBq of ^{125}I or 10 MBq of other isotopes can be poured out in a designated and labelled sink
- Scintillation vials normally not radioactive waste (<6000 dpm/ml)
- Sharp objects (needles, scalpels) used when working with radioactivity
- Radioactive waste
  - Solid (combustible or not)
  - Liquid (organic solvent or water)
  - Isotopes
- Identify other hazards
  - Biological
  - Chemical

Transport

- Each research group has to take their own waste down to waste storages at floor 3
- Everyone have access to the cold room for contagious waste, 3314
- In the chemical waste room, 3315, the waste has to be put into the ventilated cupboards or if flammable in the fire proof cabinets
- Radioactive waste
  - Radioactive waste room at the hospital (room F2:3505, floor 3). Transport the container via the passage on floor 3

Fire Safety Part 2

Fire hazardous chemicals

1. Flammable chemicals
2. Flammable gases
3. Oxidizing chemicals
4. Explosive chemicals

- Normally stored separate from other hazardous chemicals
  - Make a risk assessment

Fire hazardous chemicals …

- Flammable organic solvents (class 1 and 2, where the most common at BioNut are methanol, ethanol, acetone and propanol)
  - Only 10 L per lab
  - Keep away from ignition source
    - Don't use in hood together with electrical equipment
    - Ethanol burner
    - Ethanol disinfection with spray bottle is not allowed
    - Refrigerator/freezer storage

OK

Refrigerator at SU exploding and starting a fire (November 2013)

Container with xylene sent for autoclaving

Fire hazardous chemicals

- Flammable gases (e.g. hydrogen, oxygen, ethane)
  - **BioNut**: Inform Håkan Ottosson before ordering
    Neo: Department Supervisor Flammable goods
  - Secure cylinders
  - Stored separate from flammable chemicals
  - Keep away from flammable material
  - Make sure that the can be easily move outside
- Oxidizing chemicals
  - Hydrogen peroxide, potassium permanganate, nitric acid

Fire hazardous chemicals

- Explosive chemicals
  - Picric acid
  - Peroxide forming chemicals
    - Ethers
    - Dioxane
    - Tetrahydrofurane

Warning: May form explosive peroxides!

Date received:

Date opened:

Peroxide test results (mg/L)

(Peroxide tests should be conducted every six months)

Date:	Result:	Initial:
Date:	Result:	Initial:
Date:	Result:	Initial:
Date:	Result:	Initial:

- Test for peroxides and don't keep old bottles

Peroxides in Dioxane

2.5 liter bottle with dioxane which has turned into solid peroxides (found at KS in Huddinge)

Laboratory work and safety

Provisions (work with chemicals) All available in English

- “Chemical hazards in the working environment” (AFS 2018:2 (update), 2014:43 (update), and 2011:19)

- “Occupational exposure limit values and measures against contaminants” AFS 2018:1 (update), and 2011:18

Laboratory safety

- Rules for laboratory work
  - Chemical work
  - Biological work

General laboratory rules

- Protective devices
  - Lab coats
    - Use, but not in lunch rooms
  - Goggles
  - Gloves – when needed in the lab, **not** outside
    - Protect yourself (nitrile gloves)
    - Protect samples (examination gloves enough)
    - Allergies
  - Gas mask – when needed
  - Ear protectors – when needed

General laboratory rules

- Empty and rinse glass- and plastic ware to be washed in common facility and remove labels and writing
- Dishwashing will move to Neo later in 2018

- Secure gas cylinders
- No eating or drinking in the lab
- Fill water locks regularly

Provisions (work with chemicals)

- A risk assessment has to be carried out for all hazardous work (e.g. work with hazardous chemicals, labelled with a warning symbol)
  - Risk assessments can be carried out in KLARA (description, assessment, risk reducing measures, documentation)

- The risk is the function of the inherited hazard of the chemicals and the probability that something goes wrong, i.e. it includes the entire procedure

Risk assessments ...

- All risk assessments should be printed and signed by the group leader
  - This is required to be legally valid

- Put them in a folder in the lab
- They should be available to all
- Check out KLARA web page for more information

Provisions (work with chemicals)

- Some chemicals are not allowed
  - A-listed, an exemption has to be granted (www.av.se)
  - B-listed, a permit has to be granted (www.av.se)

- Special regulations apply to CMR-chemicals
- (mutagenic, carcinogenic chemicals)
  - Investigation has to be performed
  - Risk assessment has to be performed
  - Work in a designated marked area
  - Registration of persons exposed above TLV

- Registration of chemicals
  - KLARA (at KI home page)
  - Responsible persons
  - Risk assessment module
  - SDS (safety data sheet)

New standard for classification, labelling and packaging of chemicals

- EU regulation for Classification, Labelling and Packaging of chemicals (CLP)
- All single chemicals should be classified during 2011
- Mixtures not until 2015

- **So, by now everything should be according to CLP!**

Consequences for us

- New classification system
  - New Risk Phrases (now called Hazard Indications), R1-R68 is replaced by H200-H499
    - H200-H299 for physical hazards, e.g. H221 (flammable gas)
    - H300-399 for health hazards, e.g. H329 (deadly at skin contact)
    - H400-499 for environmental hazards, e.g. H400 (very toxic to water-living organisms)
    - EUH1-201 for additional information

Consequences for us ...

- New classification system....
  - New Safety Advice Phrases, S1-S64 is replaced by P100-P500, e.g.
    - P284 (use breath mask)
    - P315 (seek immediate medical care)

- New labelling system

Old Hazard Pictograms*

 Highly flammable	 Extremely flammable	 Dangerous for the environment
 Toxic	 Very toxic	 Corrosive
 Irritating	 Harmful	 Read the warning text e.g. Moderately harmful
 Explosive	 Oxidizing	 Biohazard

Still remaining

** OK until 2019-05-30*

GHS hazard pictograms

Consequences of changing system

- Newly ordered chemicals should have the new labels
- Many chemicals which were not considered hazardous before are that now and many have also been upgraded
- The new label has to be put on the bottle **before** 2019-06-01
- Look up the current classification before replacing the pictogram – it may have changed

Where do you find info about classification and labelling for specific chemicals?

- SDS (safety data sheet)
  - Hard copy should be delivered with ordered chemical
  - If no hard copy, check in KLARA, and most, but not all chemicals in KLARA have the new classification and labelling
  - Check up in KLARA (under "Chemical safety" of KI internal web page)

All SDS have the same design with16 sections

Question	Read the following sections
how dangerous is the chemical for humans and the environment?	2. Hazards identification (a short summary) 11. Toxicological information (health) 12. Ecological information (environment) 15. Regulatory information (classification/labelling)
w do I protect myself and others?	8. Exposure controls / Personal protection 4. First aid measures
What do I do if a fire starts where the chemical is or if I spill out the chemical?	5. Fire-fighting measures (eg. extinguishing media) 6. Accidental release measures
w do I handle the product when it has turned into waste?	13. Disposal considerations (of the chemical and the packaging)

Provisions (work with chemicals)

- When transferring a chemical from its original container to a new one it has to be labeled
  - Label with (in English):
    - Name of chemical
    - Concentration
    - Your name
    - Date
    - Warning symbol (app. 1:8 in safety manual) (not always needed)
- Proper hood ventilation
- Eye flushing and emergency showers

Risks when handling hazardous chemicals

- Risk for **serious** accidents primarily during
  - Transport (dropping bottles with liquids on the floor)
    - Decontamination
    - Evacuation
    - Calling fire brigade
  - Transfer from original container
    - Contamination of yourself
      - Skin exposure (solids and liquids)
      - Inhalation (if volatile)
  - Reduce risk by
    - Replacing hazardous chemical (e.g. using other protocol or kits)
    - **Using transport bucket**
    - Purchasing small amounts (e.g. dissolve without weighing), dissolved, diluted or ready-made

Handling chemical spills

- Clean up spills of salts, etc
- For larger spills seal off the area and start cleaning if you know how to and if it is safe
- If you don't know, read the SDS and consult "expert" if needed
- Never leave spill to the cleaning personnel
- Use protective clothing, etc when cleaning
- Use gas mask if needed
- Use paper or absorption material for liquid spills
- Report to supervisor and/or working environment group and/or the web based system.

Handling liquid nitrogen

- Hazards
  - Frostbite (use protective devices)
  - Hypoxia
    - Be particularly careful in small spaces, keep the door open
    - Don't travel in the elevator with the nitrogen tank
      - Use the key system to stop other people from using the elevator while transporting nitrogen

One liter liquid nitrogen will evaporate to 700 L gas.

Work with biological material

- Virus rooms with separate rules
- Always do a risk assessment which should be available in the lab
- For work with GMM one need to notify authorities or obtain a permit
- **BioNut**: Per Antonson is the contact person for work with biological material and Rongrong Fan (via cellroom@biosci.ki.se) is responsible for the virus rooms
- **NVS**: …
- ……

Work with human biological material

- Risks
  - Hepatitis B, C (and A)
  - HIV
- Human material
  - Blood
  - Tissues
  - Primary cells
  - Cell lines? 0.5-1% of cells infected with hepatitis B or HIV
- Vaccination (hepatitis) if working with human material or if someone else in the same lab is doing that or if using same equipment (free of charge, contact Previa)

Laboratory safety

Web resources

- https://ki.se/en/staff/laboratory-safety
- http://www.ki.se/uu/Introutb/Labsafety/story.html

Karolinska Institutet

Guided tour