

Waste handling

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Neo/Departments of: Biosciences and Nutrition (BioNut); Clinical Science, Intervention and Technology (Clintec); Laboratory Medicine (LabMed); Medicine Huddinge (MedH/HERM, LipidLab); Medicine Solna (MedS); Neurobiology, Care Sciences and Society (NVS)

Created by:

Neo Work Environment Group / Håkan Ottosson

Approved by:

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Waste handling¹

1. Recycling and waste rooms

On floor 6, 7 and 8 recycling rooms (8360, 7361 and 6360) are located close to the transport elevator (Figure 1). On floor 3 the waste rooms (Infectious-cold room 3314, Chemical 3315, and Radioactive, cage in 3313, Figure 2) are located by the loading dock.

All *laboratory* waste is transported down to the waste rooms at floor 3 by each research group.

The sharps and cutting/infectious waste, in yellow bins, is stored in the refrigerated room 3314 and biological waste, in black bins, in the freezer in room 3317. Chemical waste is stored in room 3315. Flammable waste must be stored in the fireproof cabinets; non-flammable waste that has hazardous vapours need to be stored in the ventilated cabinets. Other chemical waste may be stored at the shelves.

Access to the waste rooms at floor 3 is limited to dedicated staff. The chemical and biological waste is picked up from the waste rooms by contracted companies. They will not pick up hazardous waste if the container is missing a proper label.

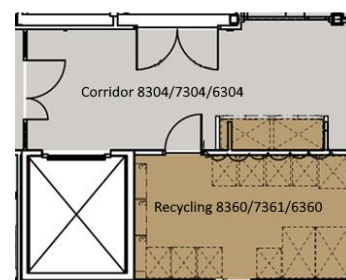


Figure 1. Recycling rooms



Figure 2. Hazardous waste rooms

¹ For an overview, see the Waste Handling poster and KI general rules at <https://staff.ki.se/laboratory-waste>

2. Recycling

Ordinary **copy- and printer paper** (not glossy brochures, folder, etc.) should be deposited in the plastic containers for recovered paper that are placed at specific locations in the corridors and in the recycling rooms at each floor, 6360, 7361 and 8360. These containers are transported down to the main waste room by cleaning- or service staff.

Cardboard boxes (corrugated cardboard) should be unfolded and preferentially discarded in the designated larger green plastic containers in the recycling rooms at each floor.

Empty glass containers, should be deposited in one of the containers for recycled glass (separate container for coloured and uncoloured glass) with **exception** of those that have contained chemicals that are toxic (Figure 3), serious health hazard (Figure 4) or toxic to the environment (Figure 5). Before depositing, rinse out residual content (collect it as chemical waste unless it is a chemical that may be poured out in the drains). When bottle is clean place it, without cap, in the container. This is valid for all **volatile organic solvents** unless they are marked with hazardous labels. Empty inorganic acid bottles, e.g., hydrochloric acid, may be rinsed with plenty of water and then recycled. The glass containers used for chemicals, that cannot be recycled² **must not** be rinsed³, send them as chemical waste, see *Ch. 3.4, "Solid Chemical Waste"*.



Figure 3. Highly toxic



Figure 4. Health hazard



Figure 5. Environmental hazard

Empty plastic ethanol bottles can be placed in the plastic bag for plastic waste. The cap must be removed (if not removed, ethanol fumes may be inside the bottle and may cause an explosion/fire when the bottles is shredded in the recycling process)

Discarded laboratory glass made of borosilicate glass (beakers, etc. made of Jena-, Pyrex- or Duran glass) should be deposited in the containers for this in the recycling room⁴.

Empty plastic containers, solvent bottles for ethanol, acetone, and inorganic acids are cleaned using the same procedure as for the glass containers, above, recycled as plastic. If the containers used for chemicals are included, they have to be rinsed before deposited, see description above. This is not allowed if they are labelled with any of the hazard pictograms in fig 1-3. Those containers are treated as hazardous chemical waste.

Each research group should have a **bag for recycling of plastics** in the lab (hard and soft plastics can go together). The full bags should be closed and put in the container for plastics in the recycling room (6360, 7361, or 8360, Figure 1).

Don't throw **plastic pipettes** or tips for automatic pipettes directly in the garbage bags in the lab.

Contaminated plastic pipettes or pipette tips should be discarded together with the waste in question (contagious, chemical, or radioactive) or if **considered clean** in any cardboard box which when full is sealed with tape and discarded as normal garbage (use a smaller empty plastic container or any other suitable container or a plastic bag that is not penetrable for the pipettes or the tips)

Smaller metal objects should be deposited in recycling room in the box for metals. Metal objects larger than the recycling box should also be deposited as metal, contact janitor to handle this. **Mercury** and other **toxic metals** should be disposed of as chemical waste, with a proper label.

Empty **propane cylinders** should be marked "Empty" (use a marker pen) and placed on the shelf in the chemical waste room on floor 3 (room 3315). Make sure they are empty!

Batteries should be saved and deposited in a box in the recycling room.

Used **fluorescent lamps**, other mercury containing lamps and normal light bulbs should be deposited in the designated box in the recycling room.

Discarded **X-ray films** and other films should be deposited in the designated box in the recycling room.

Used toner cassettes are not currently recycled. Deposit them in normal waste / combustible. If recycling starts, deposited in the designated boxes in the recycling room.

3. Hazardous waste

3.1. Syringes, needles and scalpels

Used disposable glass, syringes, injection needles and scalpels from work with human samples, micro-organisms should be deposited in the **yellow bin** for **Sharps & Infectious** waste. They may temporary be

² In general containers used for toxic or environmental hazardous chemicals should not be rinsed (GHS Pictogram, Figure 3, Figure 4, and Figure 5) See foot note below.

³ If they are rinsed, the rinse waste should be collected as chemical waste. Then when safe, after removing the label from the bottle, the bottle can be recycled.

⁴ Due to an agreement with the waste contractors, small amounts of cleaned lab glassware can be disposed of in the stained-glass container

deposited in **smaller yellow containers** for sharps and infections waste. **Non-contaminated** (no toxic or infectious agents) sharps and pipette tips, may be collect in any suitable container, e.g. an empty ethanol bottle, for temporary storage **properly marked** as **Sharps**. When full, put them in the **yellow bin** for **Sharps & Infectious waste**.

3.2. Chemicals, Cytostatic and Prescription Drugs

Almost all chemical waste is classified as hazardous waste (“farligt avfall”). See [KI staff portal](#)⁵ for KIs rules and how to handle different types of chemical waste. Disposal of cytostatic and prescription drugs are regulated by different provisions and should be handled slightly different than normal chemical waste, see *Neo Documents “Routines handling prescription drugs”* and [KI web pages](#).

Organic solvent waste should be collected in "UN"-labelled” 5-liter plastic jerricans⁶ (**PHD5**). **Other plastic containers should not be used**. If large volumes are produced a larger metal container would be preferred. Make sure that all caps are properly tightened and do not fill more than to the mark for 5 litres. Solid waste should be collected in 10 litre plastic containers (with larger cap) or in a designated box for hazardous waste (containing an inner plastic bag), but other plastic containers could also be used. Both type of plastic containers as well as designated cardboard boxes of a single size (and thicker plastic bags) are available in the storage rooms.

Every type of waste has to be labelled separately with enough information to decide how the waste can be transported and incinerated. The current fractions and thus the information on how to label the waste are given in Ch. 8 “Sorting and Labelling of Hazardous Waste”

Completely or partly pre-printed labels are available in the storage rooms 6638, 7638, 8638 and 8618. You fill the content, if that is not pre-printed, your name, department, KI, and your phone number (i.e., a phone number to someone that knows what it is in the waste container).

If you have some questions regarding waste handling or if you want to get rid of some old chemicals, contact the work environment coordinator.

All chemical and hazardous waste is transported down to the **storage room on floor 3** by dedicated staff from each research group.

3.3. Liquid Chemical Waste

Waste containing chemicals or mixtures containing chemicals labeled with pictograms for highly toxic, health hazard or environment hazards (Figure 6. Hazard pictograms) as are treated as chemicals waste.

Organic Solvent waste is collected in 5 L jerrican (thicker plastic UN-labelled, black cap). Use an **appropriate label**, *Ch. 8*, below. **NB! Flammable waste must be stored in fire-proof cabinets.**

Halogenated solvents (> 1% halogenated) are preferably collected separately and in the same type of containers as non-halogenated. Affix label, fill in requested information and deposit the container in the storage for chemical waste, 3315, on floor 3.

Ether, dioxane and tetrahydrofuran and other ethers free from peroxides can, after a negative result from peroxide testing be sent as organic solvent waste (with peroxide test label attached). For information on destruction of peroxides, contact the work environment group if needed and check the information on the KI web⁷.

Other **non-halogenated solvents** (not ether and other solvents that might contain peroxides, see above), are collected in approved containers, see *Ch. 8 “Sorting and Labelling of Hazardous Waste”*, below. Do not use metal containers for solvents that might contain acid or base. Affix label, fill in requested information and deposit the container in the storage for chemical waste on floor 3

Larger volumes of **water-based** waste are collected in 5 L jerrican (thinner plastic NOT UN-labelled). Use an **Appropriate label**, see *Ch. 8*, below.

Small amounts of working solution of some chemicals can be poured into drains. See *Ch. 5 “Compounds that in small amounts can be poured out into the drain.”*, below, and read the document on the KI web⁸ before doing this.

3.4. Solid Chemical Waste

Empty chemical containers that are toxic, hazardous to health or hazardous to the environment can be placed in any suitable cardboard box or in a transparent plastic and placed in the chemicals waste room 3315.



Figure 6. Hazard pictograms

⁵ Laboratory waste <https://staff.ki.se/laboratory-waste>

⁶ See the Waste Handling poster and Containers for Chemical, Infectious and Biological Waste (Ch.11)

⁷ [Instruction peroxide forming chemicals, https://staff.ki.se/media/27175/download](https://staff.ki.se/media/27175/download)
[Peroxidbildande kemikalier anvisningar, https://medarbetare.ki.se/media/27145/download](https://medarbetare.ki.se/media/27145/download)

⁸ <https://staff.ki.se/laboratory-waste>

Mark the box with your name, department, and phone number. The **original label** of the container should be readable.

Empty chemical containers, where the content was **not** toxic, hazardous to health or hazardous to the environment, the container **should be recycled** as glass or plastic. See *Ch. 2 “Recycling”*.

Chemical waste which is mainly solid, primarily those that are containing phenol/chloroform residues and Ethidium Bromide⁹ stained gels, is preferably deposited in the 10-litre plastic container with a large cap available in the storage rooms. Affix label, fill in requested information and deposit the container in the storage for chemical waste on floor 3.

Small amount of **alkali metals** (e.g., sodium metal, left over after an experiment) are reacted in small portions with 2-propanol (or ethanol/other alcohol, depending on metal), which can be flushed down the drain after dissolving.

Acids and bases free from heavy metals (none of the hazardous labels in Figure 6) can after dilution and neutralization (if needed, pH should be within 5 to 11.5) be flushed down the drain together with plenty of water. Larger amounts should be discarded as chemical waste.

Scintillation vials, see *Ch. 3.8 “Radioactive waste”*

Developing- and fixation solutions should be collected in designated waste containers. From the dark room the containers are transported down to the chemical waste room on the 3rd floor by the persons responsible for the dark room. The containers should be labelled "fix" or "developer", respectively, and your department/group. If you produce that kind of waste in the lab you can pour it into one of the containers in the dark room, or if larger amount, transport it directly to the chemical waste room, properly labelled.

Staining solutions should be handled in different ways. **Silver nitrate** solutions are collected in a plastic container, **P5** or **PHD5**, on which you write "silver nitrate" and your department/group. For methanol solutions containing **Coomassie Blue** use you should use UN labelled plastic container. Affix label, fill in requested information and deposit the container in the storage for chemical waste on floor 3

Working with **ethidium bromide** should be avoided and preferable replaced with other staining methods. See *Ch 2.3 <https://staff.ki.se/laboratory-waste>* and instruction on the web of how to decontaminate.

Mercury from broken thermometers should be alloyed with zinc or other material and place the waste in a tight plastic container, label it "Mercury alloy" and your department/group and place it in the storage room for chemical waste on floor 3. Residuals of other toxic **heavy metals** and their salts are packed in a suitable container. Affix label, fill in requested information and deposit the container in the storage for chemical waste on floor 3.

Waste oil from pumps and other instruments is poured into plastic containers and marked with "Used oil" and your name and department/group. Those containers should be brought down to the storage room for chemical waste at the 3rd floor.

All cell media and other solutions containing antibiotics have to be collected in P5 containers and labelled "Cytostatic and Drug Contaminated Waste".

Disposable pipets, without hazardous contamination (e.g. used for pipetting buffers) may be collected in a suitable, non-penetrable, container. This may later be disposed in ordinary trash (combustibles or recycling plastics) if properly sealed.

3.5. Infectious/biological material¹⁰

3.5.1. Infectious waste

- Yellow waste bins, with a white absorption cloth in bottom are used for infectious or sharp waste and labelled with "Skärande/stickande/smutförande avfall" (Figure 7).
- Infectious/contagious material is collected in yellow bins (Figure 8) in the lab. When filled it is transported to waste room 3314.
- All potentially contaminated waste such as tubes with blood or cells must be placed in the yellow bin.
- Fit the yellow lid properly (even if not full!) but **do not** lock/seal it.
- Sealed (locked) waste boxes are not allowed to weigh more than 12 kg.
- Full and sealed boxes are placed in the cold room 3314 at floor 3.
- Be sure that you have labelled the box properly, see *Ch. 8 “Sorting and Labelling of Hazardous Waste”*
- Sharp things, needles and scalpels should go into the small yellow bucket (or in a small



Figure 7. Label for Sharps and Infectious Waste



Figure 8. Yellow plastic containers.

⁹ Working with ethidium bromide is not allowed unless special permit

¹⁰ Infectious material is biological by nature, however, due to the definitions in the provisions we must follow the definition separates infectious and biological material (body parts, organs, animal carcasses, etc.)

sealable plastic container of any kind, properly labelled). This container is then put in the yellow bin.

- Other general non-infectious waste such as closed empty tubes and other plastics, paper towels and packaging go into ordinary waste bins or recycled as glass or plastics, if possible.
- Don't forget that all plastic bags inside the boxes for hazardous waste have to be sealed with tie-straps¹¹.
- Make sure the yellow bin is decontaminated on the outside before moving it out of the lab.

3.5.2. Autoclaving of infectious waste

If the liquid infectious waste **is not containing** antibiotic, pharmaceuticals, or hazardous¹² chemicals the waste may be autoclaved. After autoclaving, the waste will be poured into the drain, i.e., not needed to be sent away as hazardous waste (saving both costs and climate by reducing transport).

- The jerrican must be the Plastic Heavy-Duty container (**PHD5**), see Ch. 8.1 “Containers for Chemical, Infectious and Biological Waste”.
- Do not fill it to more than 4.5 litres, approximately the red line in figure). There are volume markers on the side of the jerrican.
- Make sure to decontaminate the outside of the jerrican, e.g., by wiping it with ethanol, to make it safe to handle for the autoclaving staff.
- Bring the waste to the waste autoclaving facility at floor 8, 8362, **fill in the log** and put the **stainless-steel id tag** on the jerrican.



Figure 9. Jerrican with stainless-steel tag.

3.5.3. Biological waste

- Animal carcasses should be left at the animal department, packed, and marked according to the rules of that department.
- Biological waste (body parts, organs, etc.) should be put into plastic bags in black bins (Figure 10). It may be stored a short time at +4°C in plastic bags in your fridge and/or in the black bin in cold room 7353 until moved to the locked -20°C freezer in room 3317. A key to the locked freezer is kept in the cold room 3314.
- If it contains infectious material, rules for infectious waste is applicable, see Ch. 3.5.1 “Infectious waste”, above and 8.2.5 “Human tissue and organs”.



Figure 10. Black plastic containers and label

3.5.4. Solid waste from work with mammalian cells

All solid waste from work with mammalian cells or micro-organisms (including GMM, see below), and those containing small amounts of animal or human material, is classified as infectious waste. Always use the **yellow plastic containers** for infectious waste (available at the service unit at floor 8, room 8621). If your waste contains liquid, you should place an absorption pad (also available at room 8621) in the bottom. When the container is full, or max 12 kg, close it and attach the label for “**Stickande/ skärande/ smittförande avfall**” (sharps/cutting/infectious waste, Figure 7) on the side of the container, at the top. Labels are available at storage room. Transport the full container to the room for chemical and contagious waste, floor 3. All filled and closed contagious waste containers should be placed inside the cold room 3314.

3.6. Cell media not containing GMM

3.6.1. Cell media without drugs or antibiotics

Containers with culture media/broth from work with mammalian cells or micro-organisms should always be deactivated in accordance with an approved method (e.g. treated¹³ with DesiDos or sodium hypochlorite¹⁴ if applicable). After this treatment the cell media may be poured out in the drain. If it contains hazardous chemicals according to Ch. 3.3 “Liquid Chemical Waste”, then label it (Figure 11) and dispose it as chemical waste.

The media may also be sent for autoclaving, see Ch. 3.5.2 “Autoclaving of infectious waste”

3.6.2. Cell media with drugs or antibiotics

If the media contain antibiotics, cytostatic or other drugs it should be labelled with the label for cytostatic and drugs (Figure 12). Collect cell media in 5-litre jerricans (PHD5 or P5, Ch. 8). Use the containers which have white caps, which can be found in the storage room (these containers cost just a fraction of those we use for solvents). Do not fill the containers all the way up. Affix the designated label (Figure 12 and Ch. 8), transport the container to the storage room for chemical waste, 3315.



Figure 11. Label for Chemical Waste in Water

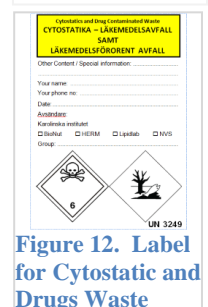


Figure 12. Label for Cytostatic and Drugs Waste

¹¹ Available in the storage room

¹² toxic (Figure 3), serious health hazard (Figure 4) or toxic to the environment (Figure 5).

¹³ If the media is deactivated with Virkon it should be disposed of as chemical waste.

¹⁴ See Neo - Decontamination using sodium hypochlorite, <https://staff.ki.se/media/125335/download> and <https://staff.ki.se/laboratory-waste> for more information about deactivation of cells and microorganisms

3.7. Cell media containing GMM

Laboratory work with gene modified micro-organisms (GMM) is regulated by AFS provision 2011:02 and refers to any experiment with unicellular organisms (including cell cultures) that contain genetic material which have been introduced into the cell in a way that would not happen in nature. Depending upon the risk the activity is divided into three classes; Negligible risk (F-activity, mainly E. coli and cell cultures), low risk (L-activity, such as work with adeno- and lentivirus), and risky activities (R-activity, not carried out in Neo). Before work with GMM is started applications have been submitted to the Work Environment Authority (Arbetsmiljöverket) and a risk assessment should be carried out on a form.

The waste handling rules for Infectious/biological material (see Ch.3.5 “Infectious/biological material”) are also valid for GMM at level F. All solid waste from work with GMM is classified as “infectious” waste. Always use the yellow plastic containers for contagious waste and when the container is full close it and attach the label for “Stickande/skärande/smittförande avfall” (sharps / cutting / infectious waste, Figure 7) on the side of the container, at the top. Liquid waste from work with GMM should be treated¹⁵ with sodium hypochlorite and the media collected in 5-liter plastic jerricans. For waste generated from work at L-activity the local instructions for the BSL2 laboratories (virus rooms) should be followed and the cell media container should be placed inside the **yellow container**.

If the media containing GMM is free from antibiotic, pharmaceuticals, and hazardous chemicals it may be sent for autoclaving, see Ch. 3.5.2 “Autoclaving of infectious waste”

3.8. Radioactive waste

Radioactive waste is temporarily stored in the isotope lab. When the containers are filled, they should be transported to the radiation waste cage in room 3313. A log of the disposed waste must be filled in. Special training is needed before any handling of radioactive isotopes. *See documents for radioactive waste.*¹⁶

For more details of handling radioactive waste, see <https://staff.ki.se/laboratory-waste#heading-3> and <https://staff.ki.se/radiation-safety>

4. Instruments and computer equipment

Electronic equipment (all instrument having a plug or a battery) is discarded in the waste room at floor 3, 3317. Discarded computer equipment should be handed to the IT unit. For heavier equipment and refrigerator/freezer (emptied, defrosted, and reasonably cleaned) contact the service unit for deposition.

5. Compounds that in small amounts can be poured out into the drain.

Water solutions of some solvents/chemicals¹⁷ can be poured into the drain - if it can be done without risk. These substances be an easily decomposable type or have such a low toxicity that small amounts in the common drain do not involve any environmental risk. Please read further on [Laboratory waste, Ch 2.5 Discharge to drains](#)¹⁸ before pouring chemicals into the drain. Some cell cultures may also be poured out, if deactivated, see Ch. 3.6 “Cell media without drugs or antibiotics” and 3.5.2 “Autoclaving of infectious waste”.

Solution containing chemicals with hazardous classifications **highly toxic, health hazard** or **environmental hazard** **must not** be poured out (see Ch. 3.3 “Liquid Chemical Waste”).

6. Storing hazardous waste in the lab

The hazardous waste produced in the lab has to be stored safely before transporting it to the waste rooms.

- Flammable waste must be stored in the fireproof cabinet
- Waste with hazardous fumes must be stored ventilated
- Liquid waste must be stored in such a way that any leakage cannot do any harm, or leak into the drain. Preferable, this can be done by putting the waste jerricans in a plastic tray.

¹⁵ Make sure the treatment is effective against the organism.

¹⁶ <https://staff.ki.se/radiation-safety> Lokala strålskyddsforeskrifter för arbete med Radioaktiva ämnen vid Karolinska Institutet, https://ki.se/sites/default/files/lokala_stralskyddsforeskrifter_radioaktiva_ammnen_ki_0.pdf Local safety directions for working with radioactive substances at Karolinska Institutet, https://ki.se/sites/default/files/local_safety_directions_at_ki.pdf

¹⁷ E.g., buffer solutions of common salts, **very** diluted solution containing acetic acid, acetone, acetonitrile, ethanol, propanol, and some other alcohols (no hazardous chemicals according to Ch. 5)

¹⁸ <https://staff.ki.se/laboratory-waste>

7. Transporting the waste from the lab to the hazardous waste rooms







Transporting hazardous material is an activity with high risks and risk minimising actions has to be in place. The transport of hazardous waste to the waste rooms are through corridors that people from outside KI have access to, so special care has to be considered.

- Make sure the waste containers are **clean** and free from hazardous material **on the outside**.
- Transport the waste on a trolley in an outer plastic tray/box.
- Bring spill material with you, in case of an accident.
- If smaller amount, transport it in a bucket.

8. Sorting and Labelling of Hazardous Waste

See [Waste Handling poster](#) for an overview and [KI web](#)¹⁹ for more details.

8.1. Containers for Chemical, Infectious and Biological Waste

YB	Yellow bin 	Yellow plastic container For Sharps & infectious waste , e.g., cells and blood, and all sharp objects, such as cannulas/needles, syringes, scalpels, lancets, suture needles and glass slides. See <i>Ch. 3.5 Infectious/biological material</i>
BB	Black bin 	Black plastic container For human tissue, body parts, organs, anatomical preparations, and animals - but only if they do not contain sharp objects, See <i>Ch. 3.5 Infectious/biological material</i>
GB	Green bin 	Green plastic container. For radioactive waste. See <i>Ch. 3.8 Radioactive waste and KI safety directions</i> ²⁰
PHD5	Plastic Heavy-Duty container 	5 litres jerrican with black cap, sturdy container (UN marking ²¹). This container can withstand higher internal pressure than the P5 container. Suitable for hazardous chemicals and organic solvents. See <i>Ch. 3.3 Liquid Chemical Waste</i>
P5	Plastic container 	5 litres jerrican with white cap made of thinner plastic, not suitable for organic solvents For waste in water solution. See <i>Ch. 3.3 Liquid Chemical Waste</i>
P10	Plastic container 	10 litres plastic container with black cap For solid chemical waste. See <i>Ch 3.4 Solid Chemical Waste</i>
CB	Cardboard box	Any suitable cardboard box For original chemical bottles (with hazardous labels, empty or with content) and other properly marked containers used for chemicals A transparent plastic bag may also be used for empty chemical containers. See <i>Ch. 3.4 "Solid Chemical Waste"</i>

¹⁹ Laboratory waste: <http://staff.ki.se/laboratory-waste>, <https://medarbetare.ki.se/laboratorieavfall>

²⁰ Lokala strålskyddsföreskrifter för arbete med Radioaktiva ämnen vid Karolinska Institutet, https://ki.se/sites/default/files/lokala_stralskyddsforeskrifter_radioaktiva_ammnen_ki_0.pdf
Local safety directions for working with radioactive substances at Karolinska Institutet, https://ki.se/sites/default/files/local_safety_directions_at_ki.pdf

²¹ UN type marking **Y** or **X** e.g. 5L container w black cap: Ⓜ 3H1/Y1.9/150/15/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

8.2. Labels and Containers

All containers transferred to the waste storage rooms at floor 3 must be labelled or they will not be transported away. Pre-printed labels for the waste categories below are available in the waste rooms or at Neo service unit at floor 8, room 8618. Remember to add your name, dept./group/lab and phone no. **Specify the content as accurately as possible.**

8.2.1. Chemical Waste

Generic label for “Chemical Waste”

May be used for all type of chemical waste if properly filled in.

Attach appropriate hazard pictograms on the container.



8.2.1.1. Solutions Containing Non-Halogenated Solvents

Container: PHD5

Mixtures of solvents with less than 1% halogenated solvents (< 1%).



See Ch. 3.3 Liquid Chemical Waste

8.2.1.2. Solutions Containing Halogenated Solvents

Container: PHD5

Mixtures of solvents with more than 1% halogenated solvents (> 1%).



E.g., Chloroform, dichloromethane. See Ch. 3.3 Liquid Chemical Waste

8.2.1.3. Solid Non-Halogenated Chemical Waste

< 1% halogenated.
E.g., Ethidium Bromide, Phenol Residues, etc.

Container: P10



See Ch 3.4 Solid Chemical Waste

8.2.1.4. Radioactive waste including Scintillation Fluids

Radioactive waste is temporarily stored in the isotope labs. Log must be filled. When the bins are filled, they should be transported to the radioactive waste cage at floor 3 and it should be entered into the web-based logging system. Special training is needed to handle radioactive material.

See Ch. 3.8 Radioactive waste



8.2.1.5. Water Solution with Chemical Waste

Container: PHD5 or P5

Including cell media deactivated with Virkon and/or containing drugs/antibiotics



See below, except GMM, see Ch. 3.7

8.2.1.6. Trichloroacetic Acid in Methanol

Container: PHD5



See Ch. 3.3 “Liquid Chemical Waste”

8.2.1.7. Coomassie Blue in Methanol

Container: PHD5

See Ch. 3.3 Liquid Chemical Waste



8.2.1.8. Used chemical containers

Container: Cardboard Box

Exemption: Solvent bottles with all solvent removed. Bottles of inorganic acid and bases properly rinsed. These bottles may be placed in normal recycling.

Original containers with the following labels should always be handled as chemical waste



Old, not valid, labels:



8.2.2. Cytostatics and Drug Contaminated Waste including Antibiotics

Container: PHD5 or P5

Pharmaceuticals including vaccines, antibiotics, cytostatic and narcotic drugs.

Packaging that has contained antibiotics. If waste is both infectious and pharmaceutical – use the **pharmaceutical** and **pollution** labels.

Handling drug containing waste, see Neo Documents “Routines handling prescription drugs”.

Handling cytostatic drugs, see KI web “1.2 Pharmaceuticals, including cytostatic waste” (<https://staff.ki.se/laboratory-waste>)

Cytostatic drugs, <https://staff.ki.se/chemical-safety#heading-15> and Neo Documents “Routines handling prescription drugs”.

See Ch. 3.2 Chemicals, Cytostatic and Prescription Drugs



8.2.3. Infectious liquid waste – to be autoclaved – **NOT** containing cytostatics, pharmaceutical drugs, including antibiotics, or hazardous chemicals

Container: PHD5

From work with human material, mammalian cells, micro-organisms, or genetically modified microorganisms free from hazardous chemicals and pharmaceuticals.

See Ch. 3.5.2 “Autoclaving of infectious waste”

The jerrican should be properly sealed and clean on the outside.

Do not overfill the jerrican! Maximum 4.5 litres



8.2.4. Sharps, syringes, needles, scalpels, and infectious material

Container: Yellow Bin

From work with human material, mammalian cells, micro-organisms, or genetically modified microorganisms, cell cultures and materials that has come in contact with these items (e.g., gloves, tubes, pipette tips, paper towels etc.)

Exemption: Deactivated waste – if an approved method for deactivation has been used and there are no hazardous chemicals or antibiotics in addition to the infectious waste. (see “Water Solution with Chemical Waste”, above) “Sharps/infectious waste” labels must NOT be used for deactivated/sterilised waste.

Sharps waste is defined as all sharp objects, such as cannulas/needles, syringes with fixed needles, scalpels, lancets, suture needles and glass slides. This applies even if there is no suspicion of any infectious agent being present.

Minor sharps waste may be placed straight in yellow bins or in small jars/cans/boxes, which are then placed in yellow bins.

Intermediate storage, if infectious, in small yellow jars. If not infectious, in any plastic bottle, e.g., an empty ethanol bottle, clearly labelled. Use only the yellow jars if infectious sharps are produced in the same lab.

See Ch. 3.1 Syringes, needles and scalpels and Ch. 3.5 Infectious/biological material



Do not overfill the box!

Boxes are handled manually and should not be too heavy to carry. Maximum weight is 12 kg.

Name, telephone number, date, group and department are necessary information.

The box should be properly sealed and clean on the outside.

8.2.5. Human tissue and organs²²

Container: Black Bin

For human tissue, body parts, organs, anatomical preparations, and animals - but only if they **do not** contain contiguous or sharp objects. Temporary storage in the lab at +4°C for maximum one week. Then stored in the designated freezer in the waste storage at floor 3 until pickup for incineration.

If the waste is also *contagious*, different provisions apply.

See Ch. 3.5 Infectious/biological material



²² SOSFS 2001:8: <https://www.socialstyrelsen.se/regler-och-riktlinjer/foreskrifter-och-allmanna-rad/konsoliderade-foreskrifter/20018-om-forsiktighetsmatt-vid-hantering-och-markning-av-sadant-biologiskt-avfall-som-kan-medfora-olagenhet-for-manniskors-halsa-enligt-miljobalken/>
SOSFS 2005:26 <https://www.socialstyrelsen.se/regler-och-riktlinjer/foreskrifter-och-allmanna-rad/konsoliderade-foreskrifter/200526-om-hantering-av-smittforande-avfall-fran-halso--och-sjukvarden/>

9. Related documents and informational web pages

General Waste Management, <https://staff.ki.se/waste-management>

Laboratory waste, <https://staff.ki.se/laboratory-waste>

10. Contacts

[Neo Work Environment Group neo.weg@biosci.ki.se](mailto:neo.weg@biosci.ki.se)

10.1.1.1. KI Chemical safety coordinator

[Margaretha Vickes](mailto:Margaretha.Vickes@ki.se) 08 524 86564 margaretha.vickes@ki.se

10.1.1.2. KI Biosafety coordinator

[Carina Bengtsson](mailto:Carina.Bengtsson@ki.se) 08 524 86289 carina.bengtsson@ki.se biosakerhet@ki.se

10.1.1.3. KI Radiation safety coordinator

[Sofia Skyttner](mailto:Sofia.Skyttner@ki.se) 08 524 86154 sofia.skyttner@ki.se

10.2. Contracted companies/experts

10.2.1.1. Sorting and chemical issues

Kasper Andersson 010 445 72 24 kasper.andersson@stenarecycling.se

Lukasz Kedzia 076 128 3958 lukasz.kedzia@stenarecycling.se

10.2.1.2. Safety advisor

Patrik Klettner Carlsson 072 569 06 11 patrik.klettner.carlsson@stenarecycling.se

11. Revisions

11.1. Version 1.4 (2021.10)

- Added Ch. 11 “Revisions”
- Added Ch. 7 “Transporting the waste from the lab to the hazardous waste rooms”
- Added Ch. 10 “Contacts”
- Updated links
- Removed links to KI documents that could not be found
- Added cage for radioactive waste in figure of waste rooms on p. 1 and replaced Swedish names of the rooms with English.
- Updated Ch. 3.8 “Radioactive waste” (we are not using the hospital anymore)
- Added Ch. 3.5.2 “Autoclaving of infectious waste”
- Added Ch. 8.2.3 “Infectious liquid waste – to be autoclaved – **NOT** containing cytostatics, pharmaceutical drugs, including antibiotics, or hazardous chemicals”
- Added Ch. 9 “Related documents and informational web pages”
- Smaller changes in Ch. 5 “Compounds that in small amounts can be poured out into the drain.”

THIS IS A DRAFT VERSION

To Do

- Update “Radioactive waste”
- Update drug waste
- Link to “Routines handling prescription drugs”
- Check names, e-mail, and phone numbers for contacts
- Link to KI rules on waste management
- Check links
- Add a picture of the 10-liter chem. waste PAP container that may be used for chemical spill
 - Chemical waste container (Fig 2 spill document)
 - Use it and keep it in stock?
- Add a link to a Neo page for WE
- Change ethidium bromide text?

Done

- ✓ Added contacts