CONSIDERATIONS AND GOOD PRACTICE FOR LABORATORY WASTE MANAGEMENT

November 2023 version

1) **Before disposing of any waste or, in general, starting any activity in the laboratories, read and make sure you fully understand the basic information on laboratory waste management** at the Faculties of Chemistry and Physics. This includes both the waste management protocol and the information on waste **classification and labelling**, available on the Faculty of Chemistry's Quality, Environment and Safety Unit's (UQMAS) Environment and safety website. Pay special attention to the following links, which can also be accessed from the Faculty's website, as they contain information on everything you need to know about safety and the environment before working in the laboratory:

   - Environment and waste management website
   - Faculty sustainability portal
   - Health and safety at the laboratory
   - Emergencies at the Faculty

   NOTE: If you are reading a hard copy of this document, you can access all this information using the "Environment and safety" link in the shortcuts for teaching and research staff on the Faculty of Chemistry homepage.

2) Dispose of each type of waste separately, whether liquid or solid, using the appropriate container according to the mandatory label. For more information on proper waste management, see the Faculty of Chemistry's Environment and safety website. Should you have any questions or require assistance, contact your laboratory, section or unit technician for personalized help and guidance. If necessary, they will forward your query to the UQMAS or the Chemical Waste Transfer Centre (CTRQ). If you do not have a section or unit technician, contact the UQMAS or CTRQ (ctrq@ub.edu) directly.

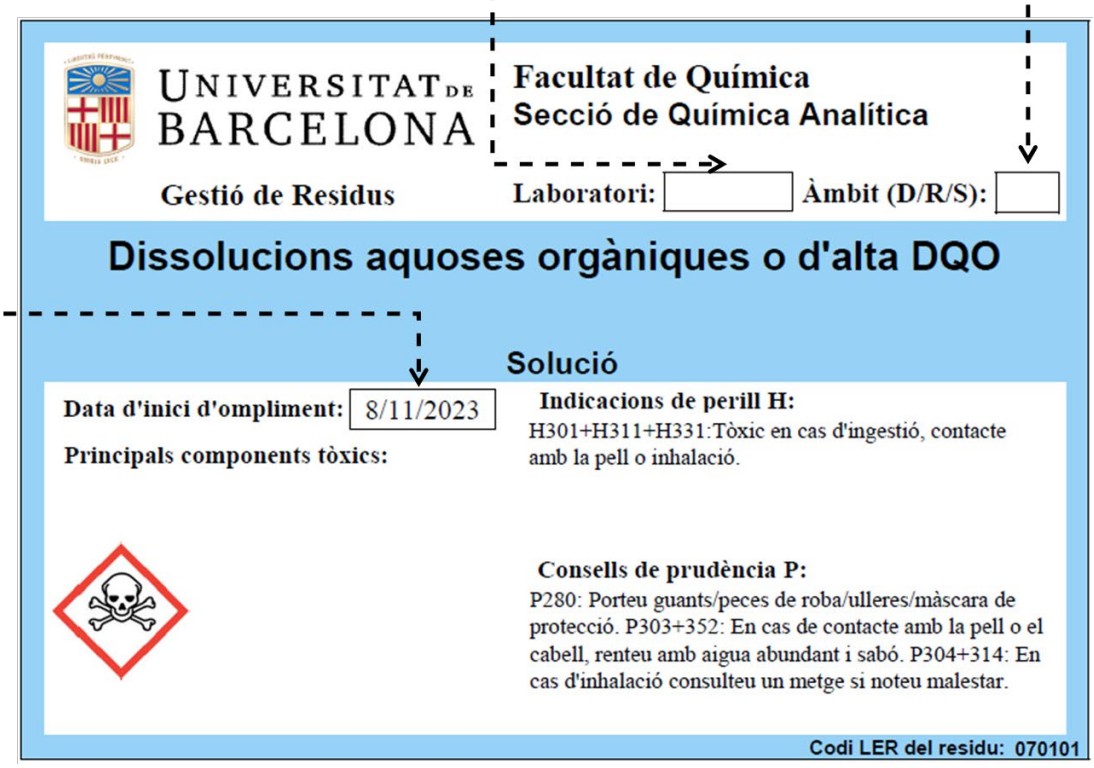
   VERY IMPORTANT: If you have any doubts or concerns, before disposing of your waste, contact your technician (or, if you do not have one, the UQMAS/CTRQ). They will make sure your waste is properly managed under optimal safety and environmental conditions. **Do not dispose of any waste if you have any doubts concerning the method, container or labelling.** Improper waste management poses significant health risks to you, your colleagues and other faculty users and can cause environmental and financial damage to the faculty.

3) **Do not pour** liquid chemical waste down the drain. Failure to follow this rule can seriously contaminate the building's wastewater and deteriorate the facilities. It also poses a significant health and hygiene risk to other users through exposure to toxic volatile substances and unpleasant and irritating odours.

4) **Do not under any circumstances overfill containers** (the maximum capacity is marked with a line).

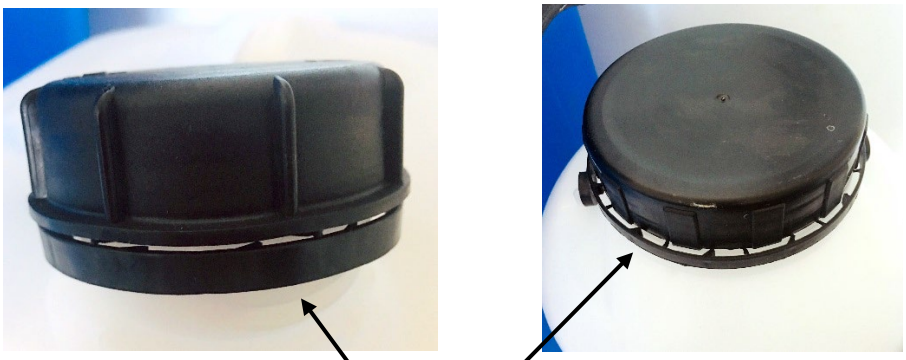
5) Before you start to use a container, make sure the labels are correctly filled out, indicating, in all cases: the laboratory number or code, the usage start date, and the applicable area, i.e. R (Research), D (Teaching), or S (Services).

Applicable area (D/ R / S = Teaching / Research / Services)
Laboratory number
Usage start date



6) Container caps must be fully and properly closed to prevent the risk of leaks, spillage, or the release of toxic and/or flammable fumes.

7) Do not overtighten the container caps. Simply screw them on completely, without applying more force than necessary, as you could otherwise damage the closure system, giving rise to hazards.



Cap safety seal

8) Material that has been contaminated with chemicals is generally disposed of in the blue lever-lock bins, which are labelled according to the type of material.

IMPORTANT: For the management of this type of waste, see the poster on managing chemically contaminated materials, which is also available on the website.

If you need to use this type of bin (usually 60 L; **check the label**) to dispose of empty containers and glass bottles and it is full, follow these instructions:

a) If available, dispose of your containers in an equivalent bin (check the label to make sure it is suitable for your waste) in an adjacent hallway or room. **Notify the responsible technician as soon as possible** that your bin is full or of any risk situation you might detect, such as those described in the following points.

b) Never leave empty containers on the floor or place them in a blue lever-lock bin **if the bin is already filled beyond capacity**, as this would create a risk of cuts or impact injuries or even unwanted exposure to harmful chemicals.

The bins are prepped so that you can open and close them during the waste disposal process touching only the black lid. To this end, **never touch the metal lever-lock**. Doing so can put people in the vicinity of the bins at significant risk of cuts, puncture wounds or impact injuries. The lever-locks are exclusively for use in closing and sealing the bins, an operation that **only authorized technical staff can perform**.

Closed lock (right and safe)

Open lock (wrong and dangerous)

9) Glass bottles from common household waste (e.g. water, soft drink, wine or cava bottles) should be placed in the green recycling bins located in the hallways for this purpose, **never in the blue lever-lock bins**. Remember, the lever-lock bins are **exclusively** for laboratory waste. Likewise, **laboratory glass waste must never be disposed of in municipal (ordinary) recycling bins**.

Laboratory waste bin **Municipal (ordinary) waste bin**

(contaminated material)

Similarly, common plastic packaging and waste (e.g. plastic beverage bottles, bags and food packaging) must be placed in the yellow recycling bins. **It is not laboratory waste and, therefore, should not be disposed of in the blue lever-lock bins.**

Wrong **Right**

(It is not laboratory waste)

10) Plastic bottles and syringes contaminated with chemicals must be disposed of in the blue lever-lock bins provided for this purpose labelled "**Chemically contaminated material: plastic**" and located in the laboratories or hallways. These bins are **exclusively** for laboratory waste. In contrast, **the plastic**

packaging from syringes must be disposed of in the **yellow recycling bins**, as it is not chemically contaminated material.

Wrong

60 and 120 L blue lever-lock bins

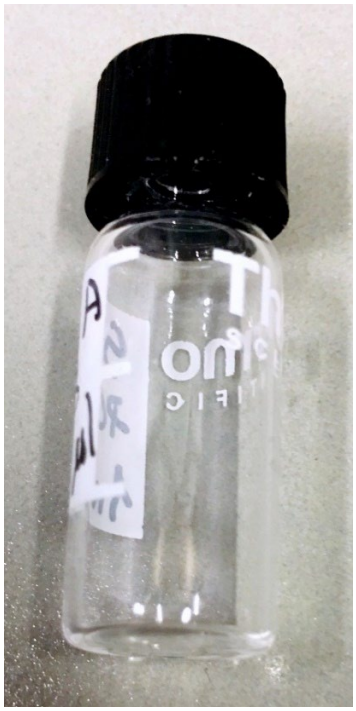
11) Vials larger than 2 mL, whether made of glass, plastic or other materials, **must be emptied** before being disposed of in the appropriate container for the material in question.

Wrong

Right

Right

The only exception is small vials (**maximum 2 mL**), which can be disposed of even if they are still full, due to the difficulty of emptying them.

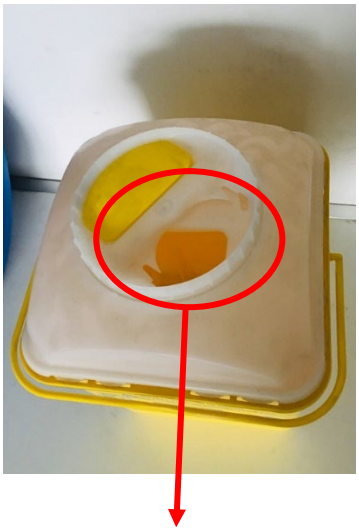


2 mL vial

12) Bear in mind the specific considerations for the **yellow bins**, which are for **biohazardous waste**, a type of health-care waste, not standard chemical waste. In the exceptional cases in which these containers must be used, they must be closed once full before they are delivered as waste, to prevent hazards arising from **exposure to biohazardous agents**.

As this waste is subject to special and exceptional considerations and uses at the Faculties of Chemistry and Physics, if you have any doubts or consider that you need this type of container for your activity, contact the technician responsible for waste in your area (or, if there is none, the UQMAS or CTRQ). **If you already have such a container, remember that the white lid must remain closed throughout the container's useful life in your laboratory** and that waste must be inserted through the opening at the top.

Wrong



Waste disposal opening

TYPES OF LABORATORY CHEMICAL WASTE CONTAINERS

All waste must be disposed of in the right container, depending on whether it is biological or chemical waste or waste materials contaminated with hazardous chemicals:

Narrow-mouthed containers

These are jugs suitable for use with **liquid waste** (except for metal needles), provided they have been prepared and appropriately labelled.

Wide-mouthed containers

These bottles are suitable for solid waste, as the mouth is wider.

Bins with lever-lock band closures

These are blue 30, 60 and 120 L drums intended for packaging and other material contaminated with chemicals. Read the labels on such packaging carefully to determine how to segregate it depending on the type of waste, as each type must be disposed of separately. To this end, you will find appropriately labelled bins for:

- contaminated glass (packaging and non-packaging)
- contaminated plastic (packaging and non-packaging)
- contaminated metal (packaging and non-packaging)
- all other material and other light-weight items, such as gloves, paper and rags.

Blue lever-lock bins

COMMON LABORATORY WASTE MANAGEMENT MISTAKES

The following tables show the most common mistakes made in laboratory waste management at Faculty of Chemistry and Physics laboratories. Review them carefully and make sure to avoid them, as mistakes in waste management entail significant environmental and financial costs for the faculties and the natural environment and pose a high risk to your health and that of your colleagues and other users.

In case of doubt, ask the technician responsible for waste in your section before disposing of any waste. Where no such technician exists, contact the UQMAS or CTRQ.

Common mistakes in handling containers and segregating contaminated material		
Waste bin or container	Common mistake	Correct solution
Wide-mouthed bottle or lever-lock bin	Mixing glass, plastic and paper	Sort the material properly depending on the classification and label
Wide-mouthed bottle or lever-lock bin	Mixing glass, plastic, and/or paper with needles	Sort the material properly depending on the classification and label
Biohazardous waste containers	Using them for material contaminated with chemicals	Sort the material appropriately and use **only for biological material**
Narrow-mouthed jug	Dirtying the outside of the jug or leaving liquid spillage	Use a funnel
Narrow-mouthed jug	Overfilling	Do not overfill

Common conceptual mistakes in the segregation by waste groups depending on the chemical nature		
Liquid waste bin or container	Common mistake	Correct solution
Narrow-mouthed jug with green "Non-halogenated solvents" label	Using it to dispose of liquid waste containing halogenated compounds	Dispose of halogenated liquid waste (compounds with a covalent carbon-halogen bond) in the "Halogenated solvents" (orange label) container
Narrow-mouthed jug with yellow "Heavy metals: basic or neutral solutions" label	Using it to dispose of acidic liquid waste	Dispose of acidic aqueous solutions with heavy metals in the "Heavy metals: acidic solutions" (red label) container