



Information for employees and students working at the Faculty of Science (W&N)

This AMD information sheet describes the diverse waste disposal routes within the faculty. It will tell you how and where industrial and chemical waste is collected, and how to submit it.

1 Types of waste

Nearly all processes that take place in laboratories, produce useful products but also waste. This waste may be divided into industrial waste and hazardous laboratory waste.

Industrial waste consists normal waste (including small packaging materials and plastic), cardboard & paper, and equipment. These are collected separately: Normal household waste and plastic in waste bins, cardboard and paper in special paper containers on wheels. How you must submit equipment can be found in Chapter 4.

Hazardous laboratory waste consists liquid and solid chemical waste, biological waste, radioactive waste, sharp and glass waste. How to deal with these is described below. Please always provide your name and telephone number when submitting solid chemical, or biological waste.

Radioactive waste is always collected in consultation with AMD's radiation expert: isotopen@science.leidenuniv.nl

Within the Faculty of Science (W&N), Facility Management (FM) is responsible for the collection of all types of waste. Please contact the [Service Desk](#) if you have any questions.

2 How is hazardous laboratory waste collected?

There are currently several types of barrels for laboratory waste: Some you have to order and purchase, others may be collected for free at the logistics centre of the faculty in the Gorlaeus. The different types of barrels are described below.

2.1. Liquid chemical waste

For liquid chemical waste there are 10 litre containers with different colour codes (black, blank, red, blue, and green). The classification is determined by the demands set by our waste processing service (regarding the environment and the caloric value of the type of waste), and the chemical (in)compatibility of waste substances. Attached to every fumehood is a [waste information chart](#) with more information about the liquids that are collected separately in the diverse containers. Never flush chemical waste down the drain!

What to do when you accidentally poured something in the wrong barrel and the contents react:

- Leave the barrel in the fumehood with the sash closed.
- Do not close off the barrel until the reactions have stopped.
- Report the content on the barrel and then submit it for disposal.
- In case of very severe reactions: close the fumehood and alert the emergency teams (BHV) (See the orange alarm sticker on the telephone.)

Make sure the container is put in a drip tray to catch liquids in case of spillage or breakage. For safety reasons, the containers should not be filled to the top. Please leave a clearing of 5 cm (2 inch) above the liquid level to allow the possible expansion of the vapour. **Containers that are too full cannot be transported.**

During [transport between floors](#) only the goods lifts may be used. Do you transport material where a dangerous amount of flammable, oxygen-dissipating or toxic materials can be released, as like gasses, vapour, liquid or fine powder, than persons are not allowed in the goods lift and must take the other lift or the stairs. Please make sure that the outsides of the containers are clean, to prevent exposing employees of Facility Management (FM) to unknown chemical residues. At some locations you can exchange full containers for empty containers with the same markings at a temporary storage facility. The temporary storage facilities are emptied by FM at regular intervals. At other locations the full containers must be taken to the central collection location of the building directly. These collection locations are also the place where you can get your empty containers, for free. Please see section 5 below for a summary of the storage facilities and collection locations.



BLACK marking

watery solutions pH >5
*>50% watery liquid waste
 polluted with hazardous
 substances*



BLANK marking

watery solutions pH <5
*mixtures of inorganic acids
 with the exception of nitric
 acid and chromic acid*



RED marking

organic solvents
*mixtures of >50%
 organic solvents with
 low halogen content*



BLUE marking

organic halogen rich
*mixtures of halogen
 (Cl, Br, F, I) containing
 organic solvents*



GREEN marking

Oil and grease from workshops
*All waste of lubrication oils and
 greases from workshop and lab
 equipment*

2.2 Solid chemical waste

The faculty has two distinct disposal options for solid chemical waste:

- 1) Solid waste, created during chemical work goes into the white plastic buckets with lid (there are three sizes available).
- 2) Waste from lab cleaning actions is disposed in the blue 60L barrels.

Both may be ordered at the logistics centre of the Gorlaeus Lab or through SRM (electronic order system in SAP)



The white buckets are intended for small amounts of solid chemical waste, polluted packaging, filter paper, gels, lab gloves, (paper) tissues, pipettes, etc. For solid waste polluted with nanomaterials, a sealed bag should be placed in the bucket to prevent dusting of nanomaterials when the bucket is reopened.

The blue 60 litre barrels are intended for chemicals in sealed and breakage proof original packaging, which means cans, jars, flasks, and such, with contents up to 2,5 litres.

For both types of barrels applies: Instable, explosive, reactive and radioactive substances may not put in these.

*Important, add always a list of contents (important for the waste collection company). Please contact the Service Desk for disposal.

2.3 Biological and GMO waste

There are three types of different GMO-waste:



- 1) Liquid; must first be deactivated (autoclaved, or chemically) at the department and may then be disposed of via the sewers.
- 2) Solid ML-I (or equivalent); is disposed of in yellow bins with a yellow lid, labelled with code UN 3245 and marked as GMO-waste for road transport.
- 3) Solid ML-II (or equivalent); is disposed of in blue bins with a yellow lid, labelled with code UN 3291, for road transport. This is pathogenic material, named specific hospital waste, or in Dutch “Specifiek ZiekenhuisAfval” (SZA).

Pathogenic biological waste (that is no GMO or animal by-product) is disposed in the blue bins with yellow lid (SZA bins with the UN 3291 code).

Not pathogenic solid material, such as (non-GMO) plants can be disposed in the regular residual waste (SZA is much more expensive). Liquid biological waste can be disposed through the sewers. Pathogenic liquid waste has to be deactivated (autoclaved, or chemically) first before it can be disposed as regular biological liquid waste.

Bins can be ordered via the logistics centre in the Gorlaeus or through SRM, electronic order system in SAP. Full bins *and* properly sealed, must be returned at the logistics centre of the Gorlaeus. Be aware, that the lids can be closed only once).

Disposal of SZA-waste is very expensive, so please make sure you know what is and is not allowed in the SZA waste bin:

Allowed: Anatomical residues and parts of organs, cytotoxic and cytostatic drugs, waste that is/might be infected with viruses, bacteria, or fungi, bedding waste, blood, plasma, liquid, contained in packaging, injection needles contaminated with pathogens.

Not allowed: Radioactive substances, other waste substances, not contaminated injection needles and other sharp objects, laboratory chemicals and uncontained liquids (this in regard of leakage and resulting contamination).

Waste must be transported in compliance with legislation for road transport (ADR):

- *Not properly sealed bins will not be accepted because it is not according to the legislation (ADR)*
- *Do not write on the labels on the bins*



2.4 Sharp waste

Sharp waste should be collected in a yellow needle container. (See picture. These can be ordered at the logistics centre of the Gorlaeus, or through SRM, electronic order system in SAP.) These containers are meant for, among other things, small blades and injection needles, without covers. Returning the used needle in a cover is, therefore, unnecessary, which prevents the risk of stabbing yourself with a contaminated needle. Please use the special adjustment in the lid to remove the needle from the syringe. Please do this carefully. Make sure you get instructions. Do not dispose pipette tips or glass in this container. Please Note: Blades and injection needles can be contaminated with a pathogen or GMO material, they are not allowed in the needle container but need to be disposed in the right bin (see 2.3).

2.5 Glass

Laboratory glassware is made of borosilicate glass, which has a higher melting point in comparison to “normal” glass. This is why normal glass is collected for recycling, and laboratory glassware ends up as residual waste. At the Gorlaeus and Huygens are glass containers in which chemical bottles that have been rinsed and evaporated to dry state, juice bottles, and such, need to be disposed. At locations without glass container, all the glass waste of the lab room is collected, and disposed in the residual waste container by the department itself.

Broken glass laboratory equipment

In the Gorlaeus only, the broken glass laboratory equipment is collected separately to prevent cutting and contamination risks for those who change the rubbish bags. In the lab there are white cardboard boxes (See picture) to collect broken glass laboratory equipment, such as beakers, Erlenmeyer flasks, and Pasteur pipettes, separately. Eventually this glass, therefore, ends up as industrial waste. The box will be collected by FM. In some laboratories there is a (metal) bucket available specifically for broken glass that is contaminated with GMOs. This bucket is autoclaved before the broken glass may be disposed of as glass waste.



3 Other (non-hazardous) waste

This is called industrial waste. Legally, this waste must be separated as much as possible. The following other types of waste are disposed of separately: paper and cardboard, residual waste (“restafval”), wood and scrap materials, (small) chemical waste, white goods, computer equipment, printer toners, furniture and batteries. Distributed at several places around the faculty’s buildings are the paper and cardboard containers, and residual waste containers. The cleaning company uses blue or colourless bags for residual waste. The yellow bags are for laboratory waste *only*. These bags may not be used or changed by the cleaning company, but must be purchased, changed, and disposed of in the residual waste container by laboratory personnel. The yellow bags (See picture) may be ordered at the Logistics Centre in the Gorlaeus, or through SRM, *electronic order system in SAP*.

At the loading and unloading area at the Logistics Centre, other types of waste are collected: (computer) equipment, small chemical waste, such as batteries and printer toners. Outdoors is a container for wood and scrap materials. Old furniture may be disposed of here as well. **However, furniture or equipment that originates from laboratories, may be contaminated and need to be handled according to specific procedures. See Chapter 4.**



Paper and cardboard container (big). These are distributed at several places around the faculty’s buildings



Paper- and cardboard container (small) In Van Steenis only.



Residual waste container These are distributed at several places around the faculty’s buildings



Yellow rubbish bag in the rubbish bin? Dispose of these yourself in the residual waste container

4 Disposal of equipment and laboratory furniture

Simple equipment, such as computers and coffee-makers, may be disposed in the crates at the collection points of the buildings without prior notice. Scientific equipment or other items (such as cupboards) that may be polluted with chemicals, biological agents, or radioactivity, cannot be disposed of/or sold. These require a release procedure first.

Depending on the possible pollution, it is determined how the object needs to be cleaned and by whom it may be released. [Release forms \(in Dutch\)](#) are available at the AMD. After cleaning, the safety expert, radiation expert, and/or biological safety officer will perform a check-up. When the object is clean and safe, and released, an appointment may be made with FM through the [Service Desk](#).

The disposal of equipment with residual economic value requires filling in a decommissioning form as well. This form is available at the [Finance & Projects Department \(Dutch link\)](#) and is needed to be able to write off the equipment in the Faculty of Science's accounts.

5 Waste collection points per building

Gorlaeus building	Ground floor, DM.0.10 1 floor, DM.1.10, EM.1.10 2 floor, DM.2.10, EM.2.10 3 floor, DM.3.10, EM.3.10, GM.3.10 4 floor, DM.4.08, EM.4.08, GM.4.08	Liquid chemical waste, sealed solid chemical waste and sharp waste in yellow needle container.	Is frequently collected by FM
	Shipping ("Expeditie")	(Small) chemical waste, fluorescent tube and energy saving lamps through the desk of the logistics centre. Glass container, wood and scrap waste in container outdoors. Equipment, empty toner and cartridges in the bin in the hallway by logistics centre.	Monday to Friday 8 a.m. to 5 p.m.
LUMY	1ste floor 1.84b	Liquid chemical waste, sealed solid chemical waste and sharp waste in yellow needle container.	Is collected twice a week
Huygens	First floor at the cryogenics department	Liquid chemical waste, sealed solid chemical waste in the yellow cupboard. Glass containers for glass.	On demand via Service Desk
Sylvius	Shipping ("Expeditie") = cupboard next to goods lift	Liquid chemical waste in the cupboard next to the goods lift. Other waste in the space on the shipping platform. Please get the key at the reception.	On demand via Service Desk
Van Steenis			On demand via Service Desk