



recyclelab

# Recycling Guidance

Plastic Laboratory Consumable Recycling

[info@recycle-labs.com](mailto:info@recycle-labs.com)

Unit 15 Worcester Road Industrial Estate, Chipping Norton, OX7 5XW

[WWW.RECYCLE-LABS.COM](http://WWW.RECYCLE-LABS.COM)



# Welcome!

Welcome to our comprehensive guide on plastic recycling within laboratory settings.

This guide provides step-by-step instructions for setting up a plastic recycling programme in your lab. It outlines which consumables can be recycled, the necessary decontamination methods, and includes answers to frequently asked questions.

## 01 Identifying plastics to be recycled

RecycleLab are able to collect and recycle clean and sterile hard, rigid plastics such as pipette tips, centrifuge tubes and 96-well plates. A few examples are listed below. For a full list of plastics accepted please see Annex 1.

RecycleLab **CAN'T** accept non-plastic items, such as nitrile gloves, glass, or sharps



# Preparing lab plastics for recycling

Laboratory plastics that have been in contact with chemicals or biological agents are usually classed as 'hazardous waste'. However, once decontaminated laboratory plastics are classed as 'safe to handle' and can be recycled.

If laboratory plastics have been in contact with chemicals or biological agents they **MUST** be decontaminated prior to being collected for recycling.

All tubes, containers and bottles must be clean and emptied of any liquids prior to placing in the RecycleLab recycling bins.

## Decontaminating lab plastics

### Chemically disinfecting plastics

Our recommended disinfection protocol uses chemical disinfectant to make lab plastics safe for handling prior to recycling. This method is simple to use with our **Decontamination Stations** and results in higher-quality recycled plastic compared to autoclaving.

We recommend using the chemical disinfectant Naturama. Click **here** to find out more about Naturama.



Use the plastic consumable



Soak plastic consumables in chemical disinfectant

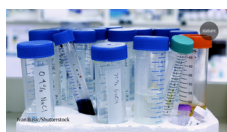


Rinse thoroughly and place in separate 'plastics only' bin in the lab



Place disinfected waste in a green RecycleLab recycling bin.

### Autoclaving plastics



Use the plastic consumable



Place in separate 'plastics only' bin in the lab



Autoclave 'plastics only' bin bag



Place autoclaved waste in a green RecycleLab recycling bin.



# Plastic Recycling Collections

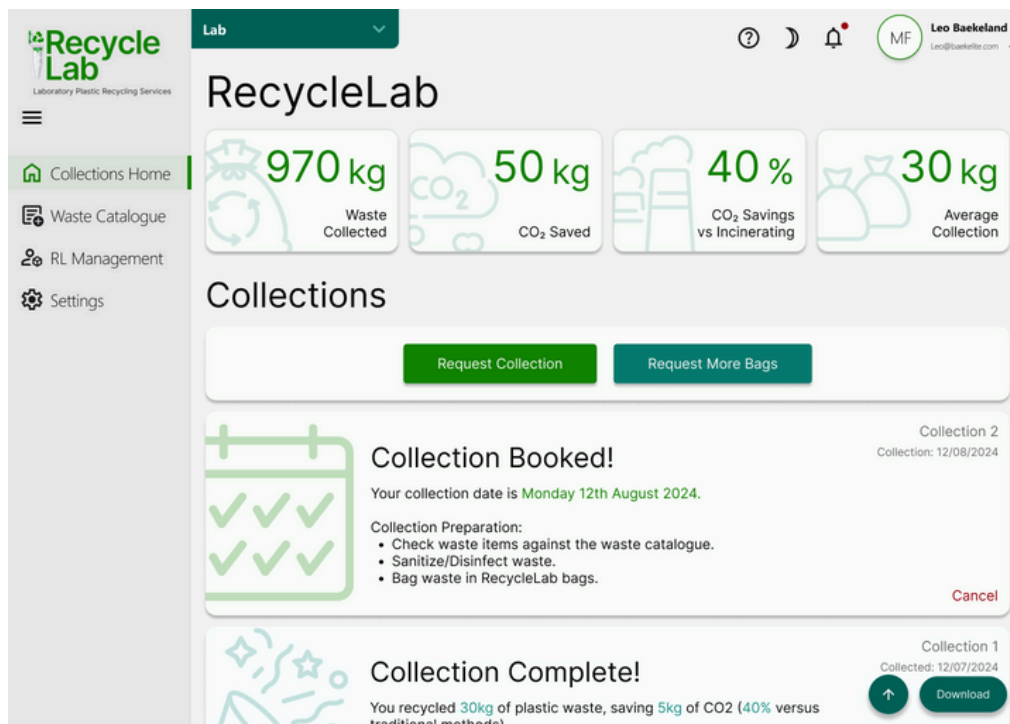
When you are ready for a collection, simply email us and we will schedule a collection using our dedicated courier partner. Please note we ask for a **minimum of 5** full recycling bins before scheduling a collection.

Once collected, the plastic is taken to the RecycleLab sorting facility where it is sorted into the different types of plastics and shredded before being sent for recycling.

## COMING SOON Online Customer Portal

Our online customer accounts will enable you to track your waste, download carbon emission data and book collections through our easy to use online platform.

Here's a sneak peak of what it will look like...





# Annex 1

## Items that RecycleLab accepts

RecycleLab collects laboratory consumables which are made of Polypropylene (**PP**), Polystyrene (**PS**), High Density Polypropylene (**HDPE**) and Polyethylene Terephthalate (**PET**).

Below is a list of common lab consumables that RecycleLab accepts and the polymer they are made from. Please note this list is not exhaustive, if you use consumables that are not on this list, please let us know.



### Polypropylene

- Centrifuge tubes
- Microcentrifuge tubes - any size
- Pipette tips (inc. filter tips)
- Pipette tip boxes
- Plastic syringes
- PCR plates



### Polystyrene

- Serological pipettes
- Cell culture flasks
- Round-bottom polystyrene tubes
- Well microplates
- Petri dishes – if contain no agar



### HDPE

- Bottles
- Lids & caps



### PET

- Bottles
- Some packaging



# Annex 2

## Plastic Decontamination Protocol

### Biologically Contaminated Waste

Once inactivated, biological waste can be classified as 'safe to handle', meaning it can then be disposed of by general waste stream or recycled.

Biologically contaminated plastic waste can be inactivated via sterilisation by an autoclave, or by chemical disinfection.

Please ensure that all liquid is discarded from any tubes and bottles and all caps are removed prior to both autoclave sterilisation and chemical disinfection.

#### **Chemical disinfection**

This can be achieved by soaking plastic lab consumables in a chemical disinfectant. We recommend using **Naturama**. Check out our **video** on how to set up a Decontamination Station, and **click here** for more information on our Decontamination Station products.

A **minimum** contact time of 24 hours is recommended for complete disinfection of virus, yeasts and bacteria with **Naturama & Virkon**.

We are able to provide you with SOPs for both Naturama and Virkon disinfection. Please get in touch if you would like a copy of these.

Other chemical disinfectants may be selected, however the disinfectant used must be selected with regards to the situation in which they will be used, and biological agents that may be present. Not all chemical disinfectants are active against all biological agents.

#### **Why we recommended Naturama:**

Naturama is an environmentally friendly high level chemical disinfectant which is produced from natural ingredients. This means that it is less harmful to the environment compared to other chemical disinfectants, however it still ensures log-4 disinfection.

#### **Sterilisation**

This can be achieved via autoclaving. The minimum recommended autoclaving conditions for decontamination of waste is:

- Temperature 121-124°C, pressure 15 psi for sterilisation time of 15 minutes

Please note that polystyrene weighing boats and reagent reservoirs **should not** be autolaved, as they are unable to withstand the high temperatures and pressures.



Below is a guideline of the differing types of biological waste contamination and appropriate disinfection methods for plastic laboratory consumables.

**Please note:** if liquid waste is present, in for example, a centrifuge tube, the liquid waste must be emptied from the tube prior to sterilisation/disinfection.

**Pease note:** RecycleLab is UNABLE to accept any plastic which have been in contact with HG4 biological agents, or cytostatic/cytotoxic/carcinogenic drugs.

Biological hazard group	Decontamination method
<b>HG1/Class 1 GMOs</b>	<p>Plastic waste soaked in disinfectant for minimum contact time, rinsed and then placed in recycling bin.</p> <p><b>OR</b></p> <p>Plastic placed in clear autoclave bag and autoclaved. Plastic can then be placed in recycling bin.</p>
<b>HG2/Class 2 GMOs</b>	<p>Plastic waste soaked in disinfectant for minimum contact time, rinsed and then placed in recycling bin.</p> <p><b>OR</b></p> <p>Plastic placed in clear autoclave bag and autoclaved. Plastic can then be placed in recycling bin.</p>
<b>Containment Level 3 laboratories</b>	<p>The waste must be autoclaved prior to leaving the CL3 lab. Depending on the biological agents used within the CL3 lab, plastic waste may then be placed in recycling bin.</p>



## Chemically Contaminated Waste

RecycleLab **CAN** accept plastics that have been in contact with the following, if they are thoroughly rinsed with water:

- Dilute acids & alkalis
- Non-toxic soluble inorganic salts
  - eg.  $\text{CaCl}_2$ ,  $\text{MgSO}_4$ ,  $\text{Na}_2\text{SO}_4$
- Hypochlorite solutions
- Non-toxic water-soluble alcohols
  - eg. Ethanol, methanol, iso-propanol
- Dilute aqueous chemical solutions below relevant concentration threshold levels
- TAE/TBE buffers at working solutions





# FAQs



## **Do we have to sort the plastic into separate bins for PP and PS?**

No. please place all plastic to be recycled in the same bin. RecycleLab will be sorting the plastic at their facility after collection.



## **Does RecycleLab accept filtered pipette tips?**

Yes. RecycleLab will accept any brand of pipette tips, even if they contain filters.



## **Does RecycleLab accept filtered stripettes?**

Yes. RecycleLab will accept any brand of plastic serological pipettes, even if they contain filters.



## **We are concerned pipette tips will pierce plastic bags, what should we do?**

Some labs class pipette tips as 'sharps' as they can pierce plastic bags and thus increase risk of spillage of waste into the environment or injury. Please place the pipette tips into bag prior to placing into the RecycleLab recycling bin.



## **We use plastic lab consumables that are not on the list on this document, can we place these in the RecycleLab recycling bin?**

If there are plastic lab consumables that are not on the list in this document, please send an email to: [info@recycle-labs.com](mailto:info@recycle-labs.com) with the lab consumables you use and would like to be recycled. We can then check which polymer material they are manufactured from and ensure they can be placed in the recycling bin.